

ALL TAXONOMIC GROUPS & TOPICS COMBINED

INSECTS

- Abbott, J. C. & Stewart, K. W. (1993). Male search behavior of the stonefly *Pteronarcella badia* Hagen (Plecoptera, Pteronarcyidae) in relation to drumming. *J. Insect Behav.*, **6**, 467-481.
- Acharya, L. & Mcneil, J. N. (1998). Predation risk and mating behavior: the responses of moths to bat-like ultrasound. *Behav. Ecol.*, **9**, 552-558.
- Acharya, L. (1992). Are ears valuable to moths flying around lights? *Bat Res. News*, **33**, 47.
- Ahmad, A., Siddiqui, M. A., Puranik, P. G. & Waheedullah, A. (1989). Natural frequency of elytral vibrations in *Gryllus bimaculatus*. *J. Acoust. Soc. India*, **14**, 40-43.
- Alcock, J. & Bailey, W. J. (1995). Acoustical communication and the mating system of the Australian whistling moth *Hecatesia exultans* (Noctuidae: Agaristinae). *J. Zool.*, **237**, 337-352.
- Allen, G. R. (2000). Call structure variability and field survival among bushcrickets exposed to phonotactic parasitoids. *Ethology*, **106**, 409-423.
- Allen, G. R. & Bailey, W. J. (1994). Female encounter rate and the calling behavior and mating propensity of male *Requena verticalis* (Orthoptera: Tettigoniidae). *Behav. Ecol. Sociobiol.*, **34**, 63-69.
- Allen, G. R., Kamien, D., Berry, O., Byrne, P. & Hunt, J. (1999). Larviposition, host cues and planidial behavior in the sound locating fly *Homotrixa alleni* (Diptera: Tachinidae). *J. Insect Behav.*, **12**, 67-79.
- Allen, G. R. (1998). Diel calling activity and field survival of the bushcricket, *Sciarasaga quadrata* (Orthoptera: Tettigoniidae): A role for sound-locating parasitic flies? *Ethology*, **104**, 645-660.
- Allen, G. R. (1995). The biology of the phonotactic parasitoid, *Homotrixa* sp. (Diptera: Tachinidae), and its impact on the survival of male *Sciarasaga quadrata* (Orthoptera: Tettigoniidae) in the field. *Ecol. Entomol.*, **20**, 103-110.
- Allen, G. R. (1995). The calling behaviour and spatial distribution of male bushcrickets (*Sciarasaga quadrata*) and their relationship to parasitism by acoustically orienting tachinid flies. *Ecol. Entomol.*, **20**, 303-310.
- Alonso-Pimentel, H. & Spangler, H. G. (1995). Female acoustic response in *Drosophila mettleri* (Diptera: Drosophilidae): A new recording technique to detect female sounds. *J. Insect Behav.*, **8**, 287-293.
- Alonso-Pimentel, H., Spangler, H. G., Rogers, R. & Papaj, D. R. (2000). Acoustic component and social context of the wing display of the walnut fly *Rhagoletis juglandis*. *J. Insect Behav.*, **13**, 511-524.
- Alonso-Pimentel, H., Spangler, H. G. & Heed, W. B. (1995). Courtship sounds and behaviour of the two Saguaro-breeding *Drosophila* and their relatives. *Anim. Behav.*, **50**, 1031-1039.
- Alt, S., Ringo, J., Talyn, B., Bray, W. & Dowse, H. (1998). The period gene controls courtship song cycles in *Drosophila melanogaster*. *Anim. Behav.*, **56**, 87-97.
- Aspi, J. (2000). Inbreeding and outbreeding depression in male courtship song characters in *Drosophila montana*. *Heredity*, **84**, 273-282.
- Aspi, J. (1992). Female mate choice and mating system among boreal *Drosophila virilis* group species. *Acta Univ. Ouluensis Ser. A. Sci. Rerum. Nat.*, **241**.
- Aspi, J. & Hoikkala, A. (1995). Male mating success and survival in the field with respect to size and courtship song characters in *Drosophila littoralis* and *D. montana* (Diptera: Drosophilidae). *J. Insect Behav.*, **8**, 67-87.
- Aspi, J. & Hoikkala, A. (1993). Laboratory and natural heritabilities of male courtship song characters in *Drosophila montana* and *D. littoralis*. *Heredity*, **70**, 400-406.
- Atkins, G. J., Navia, B. & Stout, J. (2001). Temporal pattern encoding by auditory interneurons in female crickets: Understanding the prothoracic network. *Soc. Neurosci. Abstr.*, **27**, 1982.
- Aubin, T. (1996). New methods for recording low-amplitude signals. Application to the analysis of the courtship song of *Drosophila* genus. *Bioacoustics*, **6**, 297-298.
- Aubin, T., Rybak, F. & Moulin, B. (2000). A simple method for recording low-amplitude sounds. Application to the study of the courtship song of the fruit fly *Drosophila melanogaster*. *Bioacoustics*, **11**, 51-67.
- Bacher, S., Casas, J. & Dorn, S. (1996). Parasitoid vibrations as potential releasing stimulus of evasive behaviour in a leafminer. *Physiol. Entomol.*, **21**, 33-43.
- Bacher, S., Casas, J., Wackers, F. & Dorn, S. (1997). Substrate vibrations elicit defensive behaviour in leafminer pupae. *J. Insect Physiol.*, **43**, 945-952.
- Bailey, W. J. (1993). The tettigoniid (Orthoptera, Tettigoniidae) ear: multiple functions and structural diversity. *Int. J. Insect Morphol. Embryol.*, **22**, 185-205.
- Bailey, W. J., Bennet-Clark, H. C. & Fletcher, N. H. (2001). Acoustics of a small Australian burrowing cricket: the control of low-frequency pure-tone songs. *J. Exp. Biol.*, **204**, 2827-2841.

- Bailey, W. J. (1993). Measuring the costs of calling and mating in tettigoniids. *Metalepta*, **14**(3), 14-15.
- Bailey, W. J. & Field, G. (2000). Acoustic satellite behaviour in the Australian bushcricket *Elephantodeta nobilis* (Phaneropterinae, Tettigoniidae, Orthoptera). *Anim. Behav.*, **59**, 361-369.
- Bailey, W. J. & Romer, H. (1997). Hear no evil - peripheral control of hearing in an Australian bushcricket *Scirasaga quadrata*. *Metalepta*, **17**(2), 9.
- Bailey, W. J. & Yeoh, P. B. (1988). Female phonotaxis and frequency discrimination in the bushcricket *Requena verticalis*. *Physiol. Entomol.*, **13**, 363-372.
- Bailey, W. J., Withers, P. C., Endersby, M. & Gaull, K. (1993). The energetic costs of calling in the bushcricket *Requena verticalis* (Orthoptera, Tettigoniidae, Listeroscelidinae). *J. Exp. Biol.*, **178**, 21-37.
- Bailey, W. J., Greenfield, M. D. & Shelly, T. E. (1993). Transmission and perception of acoustic signals in the desert clicker *Ligurotettix coquilletti* (Orthoptera, Acrididae). *J. Insect Behav.*, **6**, 141-154.
- Bailey, W. J. (1998). Do large bushcrickets have more sensitive ears? Natural variation in hearing thresholds within populations of the bushcricket *Requena verticalis* (Listrosclidinae: Tettigoniidae). *Physiol. Entomol.*, **23**, 105-112.
- Bailey, W. J. & Simmons, L. W. (1991). Male-male behavior and sexual dimorphism of the ear of a zaprochiline tettigoniid (Orthoptera: Tettigoniidae). *J. Insect Behav.*, **4**, 51-65.
- Balakrishnan, R., von Helversen, D. & von Helversen, O. (2001). Song pattern recognition in the grasshopper *Chorthippus biguttulus*: the mechanism of syllable onset and offset detection. *J. Comp. Physiol. A.*, **187**, 255-264.
- Balakrishnan, R. & Pollack, G. S. (1996). Recognition of courtship song in the field cricket, *Teleogryllus oceanicus*. *Anim. Behav.*, **51**, 353-366.
- Ball, E. E., Oldfield, B. P. & Rudolph, K. M. (1989). Auditory organ structure, development, and function. In *Cricket Behavior and Neurobiology* (F. Huber, T. E. Moore & W. Loher, eds.). Cornell University Press; Ithaca, NY, pp. 391-422.
- Baroni-Urbani, C., Buser, M. W. & Schilliger, E. (1988). Substrate vibration during recruitment in ant social organization. *Insectes Soc.*, **35**, 241-250.
- Barrientos-Lozana, L. & Montes-Torres, M. (1997). Geographic distribution and singing activity of *Pterophylla beltrani* and *P. robertsi* (Orthoptera: Tettigoniidae), under field conditions. *J. Orth. Res.*, **6**, 49-56.
- Barrientos, L. L. (1988). Acoustic behaviour and taxonomy of Mexican *Pterophylla* (Orthoptera. Tettigoniidae: Pseudophyllinae). Ph.D. Thesis. University of Wales; Cardiff, U.K.
- Barrientos, L. L. & Den Hollander, J. (1994). Acoustic signals and taxonomy of Mexican *Pterophylla* (Orthoptera: Tettigoniidae: Pseudophyllinae). *J. Orth. Res.*, **2**, 35-40.
- Bateman, P. W. (2001). Changes in phonotactic behavior of a bushcricket with mating history. *J. Insect Behav.*, **14**, 333-343.
- Bauer, M. & von Helversen, O. (1987). Separate localisation of sound recognizing and sound producing neural mechanisms in a grasshopper. *J. Comp. Physiol. A.*, **161**, 95-101.
- Bellwood, J. J. & Morris, G. K. (1987). Bat predation and its influence on calling behavior in Neotropical katydids. *Science*, **238**, 64-67.
- Benediktov, A. A. (1998). Acoustic communication of tetrigids of genus *Tetrix* (Orthoptera, Tetrigidae). *Entomol. Rev.*, **78**, 892-895.
- Bennet-Clark, H. C. (1987). The tuned singing burrow of mole crickets. *J. Exp. Biol.*, **128**, 383-409.
- Bennet-Clark, H. C. (1989). Songs and the physics of sound production. In *Cricket Behavior and Neurobiology* (F. Huber, T. E. Moore & W. Loher, eds.). Cornell University Press; New York, pp. 227-261.
- Bennet-Clark, H. C. & Bailey, W. J. (2002). Ticking of the clockwork cricket: the role of the escapement mechanism. *J. Exp. Biol.*, **205**, 613-625.
- Bennet-Clark, H. C. & Young, D. (1995). Cicada tymbal mechanics and the role of the tymbal in sound production. *Bioacoustics*, **6**, 220.
- Bennet-Clark, H. C. & Young, D. (1998). Sound radiation by the bladder cicada *Cystosoma saundersii*. *J. Exp. Biol.*, **201**, 707-715.
- Bennet-Clark, H. C. & Daws, A. G. (1999). Transduction of mechanical energy into sound energy in the cicada *Cyclochila australasiae*. *J. Exp. Biol.*, **202**, 1803-1818.
- Bennet-Clark, H. C. (1999). Resonators in insect sound production: How insects produce loud pure-tone songs. *J. Exp. Biol.*, **202**, 3347-3358.
- Bennet-Clark, H. C. (1997). Tymbal mechanics and the control of song frequency in the cicada *Cyclochila australasiae*. *J. Exp. Biol.*, **200**, 1681-1694.
- Bennet-Clark, H. C. & Young, D. (1994). The scaling of song frequency in cicadas. *J. Exp. Biol.*, **191**, 291-294.
- Bennet-Clark, H. C. & Young, D. (1992). A model of the mechanism of sound production in cicadas. *J. Exp. Biol.*, **173**, 123-153.
- Bennet-Clark, H. C. (1989). Songs and the physics of sound production. In *Cricket Behavior and Neurobiology* (F. Huber et al., eds.). Cornell University Press, Comstock Associates; Ithaca, N.Y., pp. 227-261.

- Bertram, S. & Johnson, L. (1998). An electronic technique for monitoring the temporal aspects of acoustic signals of captive organisms. *Bioacoustics*, **9**, 107-118.
- Bertram, S. M. (2000). The influence of age and size on temporal mate signalling behaviour. *Anim. Behav.*, **60**, 333-339.
- Birch, M. & Menendez, G. (1991). Knocking on wood for a mate. *New Sci.*, **6 July**, 42-44.
- Boake, C. R. B. & Poulsen, T. (1997). Correlates versus predictors of courtship success: courtship song in *Drosophila silvestris* and *D. heteroneura*. *Anim. Behav.*, **54**, 699-704.
- Boonman, A. M. (1995). A survey method for the speckled bushcricket *Leptophyes punctatissima* (Orthoptera: Tettigoniidae) based on its sound emission. *Entomol. Bericht.*, **55**, 30-35.
- Boulard, M. (1992). *Pagiphora yanni* new species: A new Anatolian cicada. Description and first biological data, identity and calling song, ethology (Homoptera, Cicadoidea, Tibicinidae). *Nouv. Rev. Entomol.*, **9**, 365-374 (French).
- Boyan, G. S. (1999). Presynaptic contributions to response shape in an auditory neuron of the grasshopper. *J. Comp. Physiol. A.*, **184**, 279-294.
- Brantley, S. & Hill, P. S. M. (2000). Lekking in *Gryllotalpa major*, the prairie mole cricket: A test of the 'hotshot hypothesis'. *Am. Zool.*, **40**, 953-954.
- Brogdon, W. G. (1994). Measurement of flight tone differences between female *Aedes aegypti* and *A. albopictus* (Diptera: Culicidae). *J. Med. Entomol.*, **31**, 700-703.
- Brown, W. D., Wideman, J., Andrade, M. C. B., Mason, A. C. & Gwynne, D. T. (1996). Female choice for an indicator of male size in the song of the black-horned tree cricket, *Oecanthus nigricornis* (Orthoptera: Gryllidae: Oecanthinae). *Evolution*, **50**, 2400-2411.
- Burpee, D. M. & Sakaluk, S. K. (1993). The effect of pair formation on diel calling patterns in two cricket species *Gryllus veletis* and *Gryllodes sigillatus* (Orthoptera, Gryllidae). *J. Insect Behav.*, **6**, 431-440.
- Butlin, R. K. (1993). The variability of mating signals and preferences in the brown planthopper *Nilaparvata lugens* (Homoptera, Delphacidae). *J. Insect Behav.*, **6**, 125-140.
- Cade, W. H., Ciceran, M. & Murray, A. (1996). Temporal patterns of parasitoid fly (*Ormia ochracea*) attraction to field cricket song (*Gryllus integer*). *Can. J. Zool.*, **74**, 393-395.
- Campesan, S., Dubrova, Y., Hall, J. C. & Kyriacou, C. P. (2001). The nonA gene in *Drosophila* conveys species-specific behavioral characteristics. *Genetics*, **158**, 1535-1543.
- Cao, L., Zheng, Z. & Lian, Z. (1995). Comparative study on the sounds of the genus *Podismopsis* (Orthoptera: Acrypteridae) from the northeast of China. *Entomotaxonomia*, **17**, 70-74.
- Casas, J., Bacher, S., Tautz, J., Meyhoefer, R. & Pierre, D. (1998). Leaf vibrations and air movements in a leaf-miner-parasitoid system. *Biol. Control*, **11**, 147-153.
- Charalambous, M., Butlin, R. K. & Hewitt, G. M. (1994). Genetic variation in male song and female song preference in the grasshopper *Chorthippus brunneus* (Orthoptera, Acrididae). *Anim. Behav.*, **47**, 399-411.
- Child, C. Z., Raeman, C. H., Walters, E. & Carstensen, E. L. (1992). The sensitivity of *Drosophila* larvae to continuous-wave ultrasound. *Ultrasound Med. Biol.*, **18**, 725-728.
- Ciceran, M., Murray, A. M. & Rowell, G. (1994). Natural variation in the temporal patterning of calling song structure in the field cricket *Gryllus pennsylvanicus*: Effects of temperature, age, mass, time of day, and nearest neighbour. *Can. J. Zool.*, **72**, 38-42.
- Ciplak, B. & Heller, K.-G. (2001). Notes on the song of *Bolua turkiyae* and on the phylogeny of the genus *Bolua* (Orthoptera, Tettigoniidae, Tettigoniinae). *Isr. J. Zool.*, **47**, 233-242.
- Claridge, M. F. & Morgan, J. C. (1993). Geographical variation in acoustic signals of the planthopper *Nilaparvata bakeri* Muir in Asia: species recognition and sexual selection. *Biol. J. Linn. Soc.*, **48**, 267-281.
- Claridge, M. F., Morgan, J. C. & Moulds, M. S. (1999). Substrate-transmitted acoustic signals of the primitive cicada, *Tettigarcta crinita* Distant (Hemiptera, Cicadoidea, Tettigarctidae). *J. Nat. Hist.*, **33**, 1831-1834.
- Clark, D. C. & Moore, A. J. (1995). Variation and repeatability of male agonistic hiss characteristics and their relationship to social rank in *Gromphadorhina portentosa*. *Anim. Behav.*, **50**, 719-729.
- Clark, D. C. (1998). Male mating success in the presence of a conspecific opponent in a Madagascar hissing cockroach, *Gromphadorhina portentosa* (Dictyoptera: Blaberidae). *Ethology*, **104**, 877-888.
- Clark, D. C. & Moore, A. J. (1995). Social communication in the Madagascar hissing cockroach: features of male courtship hisses and a comparison of courtship and agonistic hisses. *Behaviour*, **132**, 401-417.
- Clemente, M. E., Garcia, M. D. & Presa, J. J. (1997). New data on the acoustic communication in two mediterranean grasshoppers *Sphingonotus coeruleans* and *Truxalis nasuta* (Orthoptera, Acrididae). *Bioacoustics*, **8**, 264-265.
- Clemente, E., Garcia, D. & Presa, J. J. (1994). Description of calling song of *Chorthippus nevadensis* Pascual, 1978 (Orthoptera, Acrididae). *Bol. R. Soc. Esp. Hist. Nat. (Sec. Biol.)*, **91**, 199-202 (Spanish).

- Cocroft, R. B. (1996). Insect vibrational defence signals. *Nature*, **382**, 679-680.
- Cocroft, R. B., Tieu, T. D., Hoy, R. R. & Miles, R. N. (2000). Directionality in the mechanical response to substrate vibration in a treehopper (Hemiptera: *Umbonia crassicornis*). *J. Comp. Physiol. A.*, **186**, 695-705.
- Cocroft, R. (1999). Thornbug to thornbug: The inside story of insect song. *Natural History*, **99**(10), 52-57.
- Cocroft, R. B. (1999). Parent-offspring communication in response to predators in a subsocial treehopper (Hemiptera: Membracidae: *Umbonia crassicornis*). *Ethology*, **105**, 553-568.
- Cocroft, R. B. & Pogue, M. (1996). Social behavior and communication in the neotropical cicada *Fidicina mannifera* (Fabricius)(Homoptera: Cicadidae). *J. Kans. Entomol. Soc.*, **69** (Suppl.), 85-97.
- Coelho, J. R. (1998). An acoustical and physiological analysis of buzzing in cicada killer wasps (*Sphecicus speciosus*). *J. Comp. Physiol. A.*, **183**, 745-751.
- Cokl, A., Virant-Doberlet, M. & Stritih, N. (2000). Temporal and spectral properties of the songs of the southern green stink bug *Nezara viridula* (L.) from Slovenia. *Pfluegers Archiv: Eur. J. Physiol.*, **439**, Suppl., R168-R170.
- Cokl, A., Virant-Doberlet, M. & Stritih, N. (2000). The structure and function of songs emitted by southern green stink bugs from Brazil, Florida, Italy and Slovenia. *Physiol. Entomol.*, **25**, 196-205.
- Cokl, A. (1988). Vibratory signal transmission in plants as measured by laser vibrometry. *Period. Biol.*, **90**, 193-196.
- Cokl, A., Virant-Doberlet, M. & McDowell, A. (1999). Vibrational directionality in the southern green stink bug, *Nezara viridula* (L.), is mediated by female song. *Anim. Behav.*, **58**, 1277-1283.
- Colegrave, N., Hollocher, H., Hinton, K. & Ritchie, M. G. (2000). The courtship song of African *Drosophila melanogaster*. *J. Evol. Biol.*, **13**, 143-150.
- Collins, R. D., Jang, Y., Reinhold, K. & Greenfield, M. D. (1999). Quantitative genetics of ultrasonic advertisement signalling in the lesser waxmoth *Achroia grisella* (Lepidoptera: Pyralidae). *Heredity*, **83**, 644-651.
- Conner, W. E., Sanderford, M. V. & Coro, F. (1995). The evolution of ultrasonic courtship signals in the Arctiidae (Lepidoptera). *Am. Zool.*, **35**, 42A.
- Conner, W. E. (1999). "Un chant d'appel amoureux": Acoustic communication in moths. *J. Exp. Biol.*, **202**, 1711-1724.
- Connetable, S., Robert, A., Bouffault, F. & Bordereau, C. (1999). Vibratory alarm signals in two sympatric higher termite species: *Pseudacanthotennes spiniger* and *P. militaris*. *J. Insect Behav.*, **12**, 329-342.
- Cook, M. A. & Scoble, M. J. (1992). Tympanal organs of geometrid moths: A review of their morphology, function, and systematic importance. *Syst. Entomol.*, **17**, 219-232.
- Coro, F. & Alonso, N. (1989). Cell responses to acoustic stimuli in the pterothoracic ganglion of two noctuid moths. *J. Comp. Physiol. A.*, **165**, 253-268.
- Coro, F. & Koessl, M. (1999). Distortion-product otoacoustic emissions from tympanic organ in two noctuid moths. *J. Comp. Physiol. A.*, **183**, 525-532.
- Coro, F., Perez, M., Mora, E., Boada, D., Conner, W. E., Sanderford, M. V. & Avila, H. (1998). Receptor cell habituation in the A1 auditory receptor of four noctuid moths. *J. Exp. Biol.*, **201**, 2879-2890.
- Coro, F. & Perez, M. (1990). Temperature affects auditory receptor response in an Arctiid moth. *Naturwissenschaften*, **77**, 445-447.
- Costa, C. T., Kuhn G. C. & Sene, F. M. (2000). Low courtship song variation in south and southeastern Brazilian populations of *Drosophila meridionalis* (Diptera, Drosophilidae). *Rev. Bras. Biol.*, **60**, 53-61.
- Crnokrak, P. & Roff, D. A. (1995). Fitness differences associated with calling behaviour in the two wing morphs of male sand crickets, *Gryllus firmus*. *Anim. Behav.*, **50**, 1475-1481.
- Crossley, S. A., Bennet-Clark, H. C. & Evert, H. T. (1995). Courtship song components affect male and female *Drosophila* differently. *Anim. Behav.*, **50**, 827-839.
- Crossley, S. A. & Bennet-Clark, H. C. (1993). The response of *Drosophila parabiepectinata* to simulated courtship songs. *Anim. Behav.*, **45**, 559-570.
- Csada, R. D. & Neudorf, D. L. (1995). Effects of predation risk on mate choice in female *Acheta domesticus* crickets. *Ecol. Entomol.*, **20**, 393-395.
- Dagley, J. R., Butlin, R. K. & Hewitt, G. M. (1994). Divergence in morphology and mating signals, and assortative mating among populations of *Chorthippus parallelus* (Orthoptera: Acrididae). *Evolution*, **48**, 1202-1210.
- Dambach, M. & Gras, A. (1995). Bioacoustics of a miniature cricket, *Cycloptiloides canariensis* (Orthoptera: Gryllidae: Mogoplistinae). *J. Exp. Biol.*, **198**, 721-728.
- Daws, A. G. (1991). *The use of resonance in the acoustic communication of Gryllotalpa australis*. Hons. Thesis. The University of Melbourne.
- Daws, A. G., Bennet-Clark, H. C. & Fletcher, N. H. (1996). The mechanism of tuning of the mole cricket singing burrow. *Bioacoustics*, **7**, 81-117.

- Daws, A. G., Hennig, R. M. & Young, D. (1997). Phonotaxis in the cicadas *Cystosoma saundersii* and *Cyclochila australasiae*. *Bioacoustics*, **7**, 173-188.
- Dawson, J. W. & Fullard, J. H. (1995). The neuroethology of sound production in tiger moths (Lepidoptera, Arctiidae). II. Location of the tymbal central pattern generator in *Cycnia tenera* Huebner. *J. Comp. Physiol. A.*, **176**, 541-549.
- Demetriades, M. C., Thackeray, J. R. & Kyriacou, C. P. (1999). Courtship song rhythms in *Drosophila yakuba*. *Anim. Behav.*, **57**, 379-386.
- Desutter-Grandcolas, L. (1995). Toward the knowledge of the evolutionary biology of Phalangopsid crickets (Orthoptera: Grylloidea: Phalangopsidae): Data, questions and evolutionary scenarios. *J. Orth. Res.*, **4**, 163-175.
- Desutter-Grandcolas, L. (1998). Broad-frequency modulation in cricket (Orthoptera, Grylloidea) calling songs: two convergent cases and a functional hypothesis. *Can. J. Zool.*, **76**, 2148-2163.
- Desutter-Grandcolas, L. (1995). Functional forewing morphology and stridulation in crickets (Orthoptera, Grylloidea). *J. Zool.*, **236**, 243-252.
- Desutter-Grandcolas, L. & Nischk, F. (2000). Songs and stridulatory apparatus of two trigonidiine species from Ecuador (Orthoptera: Grylloidea: Trigonidiidae). *Ann. Soc. Entomol. France*, **36**, 95-106.
- Devetak, D. (1992). Physiology of neuropteran vibration receptors: *Chrysoperla carnea* (Stephens) as an example (Insecta: Neuroptera: Chrysopidae). In *Current Research in Neuropterology. Proceedings of the Fourth International Symposium on Neuropterology* (M. Canard, H. Aspöck & N. W. Mansell, eds.). M. Canard; Toulouse, pp. 105.
- Devetak, D. (1998). Detection of substrate vibration in Neuropteroidea: a review. *Acta Zool. Fennica*, **209**, 87-94.
- Devetak, D. & Amon, T. (1997). Substrate vibration sensitivity of the leg scolopidial organs in the green lacewing, *Chrysoperla carnea*. *J. Insect Physiol.*, **43**, 433-437.
- Devetak, D. & Pabst, M. A. (1994). Structure of the subgenual organ in the green lacewing, *Chrysoperla carnea*. *Tissue and Cell*, **26**, 249-257.
- Devries, P. J., Cocroft, R. B. & Thomas, J. (1993). Comparison of acoustical signals in *Maculinea* butterfly caterpillars and their obligate host *Myrmica* ants. *Biol. J. Linn. Soc.*, **49**, 229-238.
- DeVries, P. J. (1991). Detecting and recording the calls produced by butterfly caterpillars and ants. *J. Res. Lepidopt.*, **28**, 258-262.
- Dobler, S., Stumpner, A. & Heller, K.-G. (1994). Sex-specific spectral tuning for the partner's song in the duetting bushcricket *Ancistrura nigrovittata* (Orthoptera: Phaneropteridae). *J. Comp. Physiol. A.*, **175**, 303-310.
- Dobler, S., Heller, K.-G. & von Helversen, O. (1994). Song pattern recognition and an auditory time window in the female bushcricket *Ancistrura nigrovittata* (Orthoptera: Phaneropteridae). *J. Comp. Physiol. A.*, **175**, 67-74.
- Doherty, J. A. & Howard, D. J. (1996). Lack of preference for conspecific calling songs in female crickets. *Anim. Behav.*, **51**, 981-990.
- Doi, M., Matsuda, M., Tomaru, M., Matsubayashi, H. & Oguma, Y. (2001). A locus for female discrimination behavior causing sexual isolation in *Drosophila*. *Proc. Natl. Acad. Sci. USA*, **98**, 6714-6719.
- Dreller, C. & Kirchner, W. H. (1994). Hearing in the Asian honeybees *Apis dorsata* and *Apis florea*. *Insectes Sociaux*, **41**, 291-299.
- Dreller, C. & Kirchner, W. H. (1993). How honeybees perceive the information of the dance language. *Naturwissenschaften*, **80**, 319-321.
- Dreller, C. & Kirchner, W. H. (1993). Hearing in honeybees: Localization of the auditory sense organ. *J. Comp. Physiol. A.*, **173**, 275-279.
- Duan, J. J. & Messing, R. H. (2000). Effects of host substrate and vibration cues on ovipositorprobing behavior in two larval parasitoids of tephritid fruit flies. *J. Insect Behav.*, **13**, 175-186.
- Duffels, J. P. (1993). The systematic position of *Moana expansa* (Homoptera, Cicadidae), with reference to sound organs and the higher classification of the superfamily Cicadoidea. *J. Nat. Hist.*, **27**, 1223-1237.
- Dunning, D. C., Futtrup, V. & Miller, L. A. (1995). Moth sounds' effects on the insect-catching behavior of bats. *Am. Zool.*, **35**, 41A.
- Dunning, D. & Krueger, M. (1995). Aposematic sounds in African moths. *Biotropica*, **27**, 227-231.
- Eberl, D. F. (1999). Feeling the vibes: chordotonal mechanisms in insect hearing. *Curr. Opin. Neurobiol.*, **9**, 389-393.
- Eberl, D. F., Hardy, R. W. & Kernan, M. J. (2000). Genetically similar transduction mechanisms for touch and hearing in *Drosophila*. *J. Neurosci.*, **20**, 5981-5988.
- Eberl, D. F., Todi, S. V., McNeer, B. W., Caldwell, J. & Sharma, Y. (2001). Analysis of mutations that disrupt hearing in *Drosophila melanogaster*. *Adv. Ethol.*, **36**, 147.
- Eiriksson, T. (1993). Female preference for specific pulse duration of male songs in the grasshopper *Omocestus*

- viridulus*. *Anim. Behav.*, **45**, 471-477.
- Eiriksson, T. (1994). Song duration and female response behaviour in the grasshopper *Omocestus viridulus*. *Anim. Behav.*, **47**, 707-712.
- Elfferich, N. W. (1988). Noise production by lycaenid pupae (Lepidoptera). *Mitt. Entomol. Ges. Basel*, **38**, 156-168 (German).
- Elsner, N. & Wasser, G. (1995). The transition from leg to wing stridulation in two geographically distinct populations of the grasshopper *Stenobothrus rubicundus*. *Naturwissenschaften*, **82**, 384-386.
- Engel, J. E. & Hoy, R. R. (1999). Experience dependent modification of ultrasound auditory processing in a cricket escape response. *J. Exp. Biol.*, **202**, 2797-2806.
- Erickson, D. (1991). An acoustic sensor spies on insects. *Sci. Am.*, February, 114.
- Esperson, J. R. (1994). Do ants use ultrasound for personal communication (Hymenoptera: Formicidae)? *J. Aust. Entomol. Soc.*, **33**, 213-215.
- Ewart, T. (2001). Dusk chorusing behaviour in cicadas (Homoptera: Cicadidae) and a mole cricket, Brisbane, Queensland. *Mem. Queensland Mus.*, **46**, 499-510.
- Farris, H. E., Forrest, T. G. & Hoy, R. R. (1998). The effect of ultrasound on the attractiveness of acoustic mating signals. *Physiol. Entomol.*, **23**, 322-328.
- Farris, H. E. & Hoy, R. R. (2000). Ultrasound sensitivity in the cricket, *Eunemobius carolinus* (Gryllidae, Nemobiinae). *J. Acoust. Soc. Am.*, **107**, 1727-1736.
- Farris, H. E., Forrest, T. G. & Hoy, R. R. (1997). The effects of calling song spacing and intensity on the attraction of flying crickets (Orthoptera: Gryllidae: Nemobiinae). *J. Insect. Behav.*, **10**, 639-653.
- Farris, H. E., Mason, A. C. & Hoy, R. R. (2000). Temporal and spectral sensitivity in identified auditory units in the cricket. *Soc. Neurosci. Abstr.*, **26**.
- Farris, H. E. & Hoy, R. R. (2002). Two-tone suppression in the cricket, *Eunemobius carolinus* (Gryllidae, Nemobiinae). *J. Acoust. Soc. Am.*, **111**, 1475-1485.
- Faulkes, Z. & Pollack, G. S. (2001). Mechanisms of frequency-specific responses of omega neuron 1 in crickets (*Teleogryllus oceanicus*): a polysynaptic pathway for song? *J. Exp. Biol.*, **204**, 1295-1305.
- Faulkes, Z. & Pollack, G. S. (2000). Effects of inhibitory timing on contrast enhancement in auditory circuits in crickets (*Teleogryllus oceanicus*). *J. Neurophysiol.*, **84**, 1247-1255.
- Faure, P. A. & Hoy, R. R. (2000). The sounds of silence: cessation of singing and song pausing are ultrasound induced acoustic startle behaviors in the katydid *Neoconocephalus ensiger* (Orthoptera; Tettigoniidae). *J. Comp. Physiol. A.*, **186**, 129-142.
- Faure, P. A. & Hoy, R. R. (2000). Neuroethology of the katydid T-cell. II. Responses to acoustic playback of conspecific and predatory signals. *J. Exp. Biol.*, **203**, 3243-3254.
- Faure, P. A., Fullard, J. H. & Dawson, J. W. (1993). The gleaning attacks of the northern long-eared bat, *Myotis septentrionalis*, are relatively inaudible to moths. *J. Exp. Biol.*, **178**, 173-189.
- Faure, P. A. & Hoy, R. R. (2000). Neuroethology of the katydid T-cell. I. Tuning and responses to pure tones. *J. Exp. Biol.*, **203**, 3225-3242.
- Field, L. H. & Bailey, W. J. (1997). Sound production in primitive Orthoptera from Western Australia: Sounds used in defence and social communication in *Ametrus* sp. and *Hadrogryllacris* sp. (Gryllacrididae: Orthoptera). *J. Nat. Hist.*, **31**, 1127-1141.
- Field, L. H. (1993). Structure and evolution of stridulatory mechanisms in New Zealand wetas (Orthoptera, Stenopelmatidae). *Int. J. Insect Morphol. Embryol.*, **22**, 163-183.
- Fischer, F. P., Schubert, H., Fenn, S. & Schulz, U. (1996). Diurnal song activity of grassland Orthoptera. *Acta Oecol.*, **17**, 345-364.
- Fischer, F. P. (2001). Total eclipse silences grasshoppers' and bushcrickets' songs. *J. Zool.*, **254**, 447-448.
- Fitzpatrick, M. J. & Gray, D. A. (2001). Divergence between the courtship songs of the field crickets *Gryllus texensis* and *Gryllus rubens* (Orthoptera, Gryllidae). *Ethology*, **107**, 1075-1085.
- Fonseca, P. J. & Revez, M. A. (2002). Song discrimination by male cicadas *Cicada barbara lusitanica* (Homoptera, Cicadidae). *J. Exp. Biol.*, **205**, 1285-1292.
- Fonseca, P. J. & Revez, M. A. (2002). Temperature dependence of cicada songs (Homoptera, Cicadoidea). *J. Comp. Physiol. A.*, **187**, 971-976.
- Fonseca, P. J. & Popov, A. V. (1997). Directionality of the tympanal vibrations in a cicada: a biophysical analysis. *J. Comp. Physiol. A.*, **180**, 417-427.
- Fonseca, P. J. (1996). Sound production in cicadas: timbal muscle activity during calling song and protest song. *Bioacoustics*, **7**, 13-31.
- Fonseca, P. J. & Popov, A. V. (1994). Sound radiation in a cicada: The role of different structures. *J. Comp. Physiol. A.*, **175**, 349-361.
- Forrest, T. G., Miller, G. L. & Zagar, J. R. (1993). Sound propagation in shallow water: implications for acoustic communication by aquatic animals. *Bioacoustics*, **4**, 259-270.
- Forrest, T. G. & Hoy, R. R. (1995). Predation risk for night-flying beetles and other insects. *Am. Zool.*, **35**, 41A.

- Forrest, T. G., Farris, H. E. & Hoy, R. R. (1995). Ultrasound acoustic startle response in scarab beetles. *J. Exp. Biol.*, **198**, 2593-2598.
- Forrest, T. G. & Raspet, R. (1994). Models of female choice in acoustic communication. *Behav. Ecol.*, **5**, 293-303.
- Fries, G. & Elsner, N. (1996). Transection of intraganglionic connections causes synchrony of hindleg stridulation in the gomphocerine grasshopper *Stenobothrus lineatus*. *Naturwissenschaften*, **83**, 284-287.
- Fullard, J. H. (1990). The sensory ecology of moths and bats: global lessons in staying alive. In *Insect Defenses* (D. L. Evans and J. O. Schmidt, eds.). Suny Press, New York, pp. 203-272.
- Fullard, J. H. (1998). Sensory coevolution of moths and bats. In *Comparative Hearing: Insects* (R. R. Hoy, A. N. Popper and R. R. Fay, eds.). Springer; New York, pp. 279-326.
- Fullard, J. H., Otero, L. D., Orellana, A. & Surlykke, A. (2000). Auditory sensitivity and diel flight activity in neotropical Lepidoptera. *Ann. Entomol. Soc. Am.*, **93**, 956-965.
- Fullard, J. H., Forrest, E. & Surlykke, A. (1998). Intensity responses of the single auditory receptor of notodontid moths: A test of the peripheral interaction hypothesis in moth ears. *J. Exp. Biol.*, **201**, 3419-3424.
- Fullard, J. H., Simmons, J. A. & Saillant, P. A. (1994). Jamming bat echolocation: the dogbane tiger moth *Cycnia tenera* times its clicks to the terminal attack calls of the big brown bat *Eptesicus fuscus*. *J. Exp. Biol.*, **194**, 285-298.
- Fullard, J. H. & Napoleone, N. (2001). Diel flight periodicity and the evolution of auditory defences in the Macrolepidoptera. *Anim. Behav.*, **62**, 349-368.
- Fullard, J. H., Dawson, J. W., Otero, L. D. & Surlykke, A. (1997). Bat-deafness in day-flying moths (Lepidoptera, Notodontidae, Doptinae). *J. Comp. Physiol. A.*, **181**, 477-483.
- Fullard, J. H. (1994). Auditory changes in noctuid moths endemic to a bat-free niche. *J. Evol. Biol.*, **7**, 435-445.
- Fullard, J. H. (1988). The tuning of moth ears. *Experientia*, **44**, 423-428.
- Fullard, J. H. & Dawson, J. W. (1999). Why do diurnal moths have ears? *Naturwissenschaften*, **86**, 276-279.
- Fullard, J. H. & Yack, J. E. (1993). The evolutionary biology of insect hearing. *Trends Ecol. Evol.*, **8**, 248-252.
- Galliard, P. L. & Shaw, K. C. (1996). The effect of variation in parameters of the male calling song of the katydid, *Amblycorypha parvipennis* (Orthoptera: Tettigoniidae), on female phonotaxis and phonoresponse. *J. Insect Behav.*, **9**, 841-855.
- Garcia, M. D., Clemente, M. E., Hernandez, A. & Presa, J. J. (1997). First data on the communicative behaviour of three Mediterranean grasshoppers (Orthoptera: Acrididae). *J. Orth. Res.*, **6**, 113-116.
- Garcia, M. D., Clemente, M. E. & Presa, J. J. (1998). The song of *Omocestus femoralis* Bolivar, 1908 and *O. kaestneri* Harz, 1972 (Orthoptera, Caelifera, Acrididae). *Bol. R. Soc. Esp. Hist. Nat. (Sec. Biol)*, **94**, 5-13 (Spanish).
- Garcia, M. D., Clemente, M. E. & Presa, J. J. (1994). The acoustic behaviour of *Dociostaurus jagoi occidentalis* Soltani, 1978 (Orthoptera, Acrididae). *Zool. Baetica*, **5**, 79-87.
- Garcia, M. D., Clemente, M. E. & Presa, J. J. (1995). Description of the song of *Chorthippus binotatus binotatus* (Charpentier, 1825)(Orthoptera: Acrididae). Its taxonomic status and its distribution in the Iberian Peninsula. *Boln. Asoc. Esp. Ent.*, **19**, 229-242 (Spanish).
- Geng, Z., Zhu, D., Sun, Y., Cai, H. & Chen, J. (1989). Study on the courtship song of six species in *Drosophila takahashii* subgroup. *Acta Genetica Sinica*, **16**, 448-454.
- Gerhardt, H. C. (1994). Selective responsiveness to long-range acoustic signals in insects and anurans. *Am. Zool.*, **34**, 706-714.
- Gilbert, F. (1995). Mate localization and acoustic orientation in *Chorthippus biguttulus* in a natural environment. Thesis; University of Göttingen. (German).
- Gilbert, F. & Elsner, N. (2000). Directional hearing of a grasshopper in the field. *J. Exp. Biol.*, **203**, 983-993.
- Gillham, M. C. & de Vrijer, P. W. F. (1995). Patterns of variation in the acoustic calling signals of *Chloriona* planthoppers (Homoptera: Delphacidae) coexisting on the common reed *Phragmites australis*. *Biol. J. Linn. Soc.*, **54**, 245-269.
- Givois, V. & Pollack, G. S. (2000). Sensory habituation of auditory receptor neurons: Implications for sound localization. *J. Exp. Biol.*, **203**, 2529-2537.
- Gleason, J. M., Nuzhdin, S. V. & Ritchie, M. G. (2002). Quantitative trait loci affecting a courtship signal in *Drosophila melanogaster*. *Heredity*, **89**, 1-6.
- Gleason, J. M. & Ritchie, M. G. (1998). Evolution of courtship song and reproductive isolation in the *Drosophila willistoni* species complex: Do sexual signals diverge the most quickly? *Evolution*, **52**, 1493-1500.
- Goepfert, M. C. & Wasserthal, L. T. (1999). Auditory sensory cells in hawkmoths: identification, physiology and structure. *J. Exp. Biol.*, **202**, 1579-1587.
- Goepfert, M. C. & Wasserthal, L. T. (1999). Hearing with the mouthparts: behavioural responses and the structural basis of ultrasound perception in acherontiine hawkmoths. *J. Exp. Biol.*, **202**, 909-918.

- Goepfert, M. C., Surlykke, A. & Wasserthal, L. T. (2002). Tympanal and atympanal 'mouth-ears' in hawkmoths (Sphingidae). *Proc. Roy. Soc. Lond. B.*, **269**, 89-95.
- Goepfert, M. C. & Daniel, R. (2002). The mechanical basis of *Drosophila* audition. *J. Exp. Biol.*, **205**, 1199-1208.
- Gogala, M. (1997). Acoustic diversity in tropical cicadas: examples from S.E. Asia. *Bioacoustics*, **8**, 250-251.
- Gogala, M. & Riede, K. (1995). Time sharing of song activity by cicadas in Temengor Forest Reserve, Hulu Perak, and in Sabah, Malaysia. *Malay. Nat. J.*, **48**, 297-305.
- Gogala, M. (1995). Songs of four cicada species from Thailand. *Bioacoustics*, **6**, 101-116.
- Gogala, M. (1998). Use of acoustic methods to find, locate and recognize singing cicadas in Slovenia, Croatia and Macedonia. *Bioacoustics*, **9**, 156.
- Gogala, M. & Popov, A. V. (1996). Bioacoustic survey of cicadas. *Bioacoustics*, **6**, 300-301.
- Gogala, M. & Trilar, T. (1999). The song structure of *Cicadetta montana macedonica* Schedl with remarks on songs of related singing cicadas (Hemiptera: Auchenorrhyncha: Cicadomorpha: Tibicinidae). *Reichenbachia*, **33**, 91-97.
- Gopfert, M. C., Briegel, H. & Robert, D. (1999). Mosquito hearing: Sound induced antennal vibrations in male and female *Aedes aegypti*. *J. Exp. Biol.*, **202**, 2727-2738.
- Gopfert, M. C. & Wasserthal, L. T. (1999). Hearing with the mouthparts: Behavioural responses and the structural basis of ultrasound perception in acherontiine hawkmoths. *J. Exp. Biol.*, **202**, 909-928.
- Gopfert, M. C. & Wasserthal, L. T. (1999). Auditory sensory cells in hawkmoths: Identification, physiology and structure. *J. Exp. Biol.*, **202**, 1579-1588.
- Gorzycza, M. & Hall, J. C. (1987). The INSECTAVOX, an integrated device for recording and amplifying courtship songs. *Drosophila Information Service*, **66**, 157-160.
- Goulson, D., Birch, M. C. & Wyatt, T. D. (1994). Mate location in the deathwatch beetle, *Xestobium rufovillosum* de Geer (Anobiidae): Orientation to substrate vibrations. *Anim. Behav.*, **47**, 899-907.
- Gray, D. A. & Eckhardt, G. (2001). Is cricket courtship song condition dependent? *Anim. Behav.*, **62**, 871-877.
- Gray, D. A. & Cade, W. H. (2000). Sexual selection and speciation in field crickets. *Proc. Natl. Acad. Sci. USA*, **97**, 14449-14454.
- Gray, D. A. (1997). Female house crickets, *Acheta domesticus*, prefer the chirps of large males. *Anim. Behav.*, **54**, 1553-1562.
- Gray, D. A. & Cade, W. H. (1999). Sex, death and genetic variation: natural and sexual selection on cricket song. *Proc. Roy. Soc. Lond. B.*, **266**, 707-709.
- Green, S. V. (1995). Song characteristics of certain Namibian grasshoppers (Orthoptera: Acrididae: Gomphocerinae). *Afr. Entomol.*, **3**, 1-6.
- Greenacre, M. L., Ritchie, M. G., Byrne, B. C. & Kyriacou, C. P. (1993). Female song preference and the period gene in *Drosophila*. *Behav. Genet.*, **23**, 85-90.
- Greenfield, M. D., Tourtellot, M. K. & Snedden, W. A. (1997). Precedence effects and the evolution of chorusing. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **264**, 1355-1361.
- Greenfield, M. D. (1997). Acoustic communication in Orthoptera. In *The Bionomics of Grasshoppers, Katydid and Their Kin* (S. K. Gangwere, M. C. Muralirangan and M. Muralirangan, eds.). Cambridge University Press; Cambridge, pp. 197-230.
- Greenfield, M. D. (1990). Evolution of acoustic communication in the genus *Neoconocephalus*: Discontinuous songs, synchrony, and interspecific interactions. In *The Tettigoniidae: Biology, Systematics and Evolution* (W. J. Bailey and D. C. F. Rentz, eds.). Crawford haouse Press; Bathurst, N.S.W., Australia, pp. 71-97.
- Greenfield, M. D. (1994). Synchronous and alternating choruses in insects and anurans: common mechanisms and diverse functions. *Am. Zool.*, **34**, 605-615.
- Greenfield, M. D. (1992). The evening chorus of the desert clicker, *Ligurotettix coquilletti* (Orthoptera: Acrididae): Mating investment with delayed returns. *Ethology*, **91**, 265-278.
- Greenfield, M. D. (1993). Inhibition of male calling by heterospecific signals: Artifact of chorusing or abstinence during suppression of female phonotaxis? *Naturwissenschaften*, **80**, 570-573.
- Greenfield, M. D. & Weber, T. (2000). Evolution of ultrasonic signalling in wax moths: discrimination of ultrasonic mating calls from bat echolocation signals and the exploitation of an antipredator receiver bias by sexual advertisement. *Ethol. Ecol. Evol.*, **12**, 259-279.
- Greenfield, M. D. & Minckley, R. L. (1993). Acoustic dueling in tarbush grasshoppers: Settlement of territorial contests via alternation of reliable signals. *Ethology*, **95**, 309-326.
- Greenfield, M. D. & Roizen, I. (1993). Katydid synchronous chorusing is an evolutionarily stable outcome of female choice. *Nature*, **364**, 618-620.
- Guerra, P. A. & Morris, G. K. (2002). Calling communication in meadow katydids (Orthoptera, Tettigoniidae): Female preferences for species-specific wingstroke rates. *Behaviour*, **139**, 23-43.
- Gupta, A. P. (1993). Meeting of cuticle, stridulatory and hearing organs, ovarioles and oogenesis, egg, chorion,

- spermatozoa, and midgut cell junctions, held at the 19th International Congress of Entomology, Beijing, China, June 18-July 4, 1992. *Int. J. Insect Morphol. Embryol.*, **22**, 77-486.
- Gwynne, D. T. (1995). Phylogeny of the Ensifera (Orthoptera): A hypothesis supporting multiple origins of acoustical signalling, complex spermatophores and maternal care in crickets, katydids, and weta. *J. Orth. Res.*, **4**, 203-218.
- Gwynne, D. & Bailey, W. J. (1999). Female-female competition in katydids: Sexual selection for increased sensitivity to a male signal? *Evolution*, **53**, 546-551.
- Hack, M. A. (1997). The energetic costs of fighting in the house cricket, *Acheta domesticus* L. *Behav. Ecol.*, **8**, 28-36.
- Hagstrum, D. W. & Flinn, P. W. (1993). Comparison of acoustical detection of several species of stored-grain beetles (Coleoptera, Curculionidae, Tenebrionidae, Bostrichidae, Cucujidae) over a range of temperatures. *J. Econ. Entomol.*, **86**, 1271-1278.
- Hanada, S., Isobe, Y., Wada, K. & Nagoshi, M. (1994). Drumming behavior of two stonefly species, *Microperla brevicauda* Kawai (Peltoperlidae) and *Kamimuria tibialis* (Pictet) (Perlidae), in relation to other behaviors. *Aquat. Insects*, **16**, 75-89.
- Hanrahan, S. A. & Kirchner, W. H. (1994). Acoustic orientation and communication in desert tenebrionid beetles in sand dunes. *Ethology*, **97**, 26-32.
- Hardt, M. & Watson, A. H. D. (1999). Distribution of input and output synapses on the central branches of bushcricket and cricket auditory afferent neurones: Immunocytochemical evidence for GABA and glutamate in different populations of presynaptic boutons. *J. Comp. Neurol.*, **403**, 281-294.
- Harrison, R. G. & Bogdanowicz, S. M. (1995). Mitochondrial DNA phylogeny of North American field crickets: perspectives on the evolution of life cycles, songs, and habitats. *J. Evol. Biol.*, **8**, 209-232.
- Hartley, J. C. & Stephen, R. O. (1997). Physical aspects of sound production in Orthoptera. *Metalepta*, **17(2)**, 10.
- Hartley, J. C. (1993). Acoustic behaviour and phonotaxis in the duetting ephippigerines *Steropleurus nobrei* and *S. stali* (Tettigoniidae). *Zool. J. Linn. Soc.*, **107**, 155-167.
- Hedrick, A. V. (1986). Female preferences for male calling bout duration in a field cricket. *Behav. Ecol. Sociobiol.*, **19**, 73-77.
- Hedrick, A. & Weber, T. (1998). Variance in female responses to the fine structure of male song in the field cricket, *Gryllus integer*. *Behav. Ecol.*, **9**, 582-591.
- Hedrick, A. V. (2000). Crickets with extravagant mating songs compensate for predation risk with extra caution. *Proc. Roy. Soc. Lond. B.*, **267**, 671-675.
- Hedwig, B. (2000). Control of cricket stridulation by a command neuron: Efficacy depends on the behavioral state. *J. Neurophysiol.*, **83**, 712-722.
- Hedwig, B. (1996). A descending brain neuron elicits stridulation in the cricket *Gryllus bimaculatus* (de Geer). *Naturwissenschaften*, **83**, 428-429.
- Hedwig, B. (1993). The impact of stridulation on auditory information processing in the acridid grasshopper *Omocestus viridulus* L. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 386-393.
- Hedwig, B. (2001). Singing and hearing: Neuronal mechanisms of acoustic communication in orthopterans. *Zoology (Jena)*, **103**, 140-149.
- Hedwig, B. (1993). Functional significance and stridulatory interneurons in the acridid grasshopper *Omocestus viridulus* L. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 394-399.
- Hedwig, B. & Heinrich, R. (1997). Identified descending brain neurons control different stridulatory motor patterns in an acridid grasshopper. *J. Comp. Physiol. A.*, **180**, 285-294.
- Hedwig, B. & Meyer, J. (1994). Auditory information processing in stridulating grasshoppers: Tympanic membrane vibrations and neurophysiology. *J. Comp. Physiol. A.*, **174**, 121-131.
- Heidelbach, J. & Dambach, M. (1997). Wing-flick signals in the courtship of the African cave cricket, *Phaeophilacris spectrum*. *Ethology*, **103**, 827-843.
- Heinrich, R. (2002). Impact of descending brain neurons on the control of stridulation, walking, and flight in Orthoptera. *Microsc. Res. Tech.*, **56**, 292-301.
- Heinrich, R., Wenzel, B. & Elsner, N. (2001). A role for muscarinic excitation: control of specific singing behavior by activation of the adenylate cyclase pathway in the brain of grasshoppers. *Proc. Natl. Acad. Sci. USA*, **98**, 9919-9923.
- Heinrich, R., Wenzel, B. & Elsner, N. (2001). Pharmacological brain stimulation releases elaborate stridulatory behaviour in gomphocerine grasshoppers: Conclusions for the organization of the central nervous system. *J. Comp. Physiol. A.*, **187**, 155-169.
- Heinrich, R., Rozwod, K. & Elsner, N. (1998). Neuropharmacological evidence for inhibitory cephalic control mechanisms of stridulatory behaviour in grasshoppers. *J. Comp. Physiol. A.*, **183**, 389-399.
- Heinrich, R., Jatho, M. & Kalmring, K. (1993). Acoustic transmission characteristics of the tympanal tracheae of

- bushcrickets Tettigoniidae. II. Comparative studies of the tracheae of seven species. *J. Acoust. Soc. Am.*, **93**, 3481-3489.
- Heller, K.-G. (1997). Speciation in Orthoptera and the role of song pattern and genitalia evolution. *Metalepta*, **17**(2), 9.
- Heller, K.-G. & Achmann, R. (1993). The ultrasonic song of the moth *Amyna natalis* (Lepidoptera: Noctuidae: Acontiinae). *Bioacoustics*, **5**, 89-97.
- Heller, K.-G. & von Helversen, D. (1993). Calling behaviour in bushcrickets of the genus *Poecilimon* with differing communication systems (Orthoptera, Tettigonioidea, Phaneropteridae). *J. Insect Behav.*, **6**, 361-377.
- Heller, K.-G. (1988). *Bioacoustics of the European Bush Crickets*. Josef Margraf, Weikersheim, Germany (German).
- Heller, K.-G. (1995). Acoustic signalling in palaeotropical bushcrickets (Orthoptera: Tettigonioidea: Pseudophyllidae): does predation pressure by eavesdropping enemies differ in the Palaeo- and Neotropics? *J. Zool.*, **237**, 469-485.
- Heller, K.-G. & Achmann, R. (1995). Ultrasound communication in the pyralid moth species *Symmoracma minoralis* (Lepidoptera: Pyralidae: Nymphulinae). *Entomol. Gen.*, **20**, 1-9.
- Heller, K.-G., von Helversen, O. & Sergejeva, M. (1997). Indiscriminate response behaviour in a female bushcricket: sex role reversal in selectivity of acoustic mate recognition? *Naturwissenschaften*, **84**, 252-255.
- Heller, K.-G. (1987). Warm-up and stridulation in the bushcricket *Hexacentrus unicolor* Serville (Orthoptera, Conocephalidae, listroscelinae). *J. Exp. Biol.*, **126**, 97-109.
- Heller, K.-G. & Krahe, R. (1994). Sound production and hearing in the pyralid moth *Symmoracma minoralis*. *J. Exp. Biol.*, **187**, 101-111.
- Helversen, D. von & von Helversen, O. (1987). Innate receiver mechanisms in the acoustic communication of orthopteran insects. In *Aims and Methods in Neuroethology* (D. M. Guthrie, ed.). Manchester university Press, pp. 104-150.
- Helversen, D. von (1998). Is the ramped shape of pulses in the song of grasshoppers adaptive for directional hearing? *Naturwissenschaften*, **85**, 186-188.
- Helversen, O. von (1986). Song and courtship in the *Chorthippus albomarginatus*-group (Orthoptera: Acrididae). *Zool. Jb. Syst.*, **113**, 319-342 (German).
- Helversen, D. von & von Helversen, O. (1997). Recognition of sex in the acoustic communication of the grasshopper *Chorthippus biguttulus* (Orthoptera, Acrididae). *J. Comp. Physiol. A.*, **180**, 373-386.
- Helversen, D. von, Schul, J. & Kleindienst, H. U. (2000). Male recognition mechanism for female responses implies a dilemma for their localisation in a phaneropterine bushcricket. *J. Comp. Physiol. A.*, **186**, 1153-1158.
- Helversen, D. von & von Helversen, O. (1995). Acoustic pattern recognition and orientation in orthopteran insects: Parallel or serial processing? *J. Comp. Physiol. A.*, **177**, 767-774.
- Helversen, D. von (1997). Acoustic communication and orientation in grasshoppers. In *Orientation and Communication in Arthropods* (M. Lehrer, ed.). Birkhaeuser, Basel, pp. 301-341.
- Helversen, D. von & Rheinlaender, J. (1988). Interaural intensity and time discrimination in an unrestrained grasshopper: a tentative behavioural approach. *J. Comp. Physiol. A.*, **162**, 333-340.
- Helversen, O. von & Helversen, D. von (1994). Forces driving coevolution of song and song recognition in grasshoppers. In *Neural Basis of Behavioural Adaptations* (K. Schildberger & N. Elsner, eds.). *Forsch. Zool.*, **39**, Gustav-Fischer-Verlag, pp. 253-284.
- Helversen, D. von & Wendler, G. (2000). Coupling of visual to auditory cues during phonotactic approach in the phaneropterine bushcricket *Poecilimon affinis*. *J. Comp. Physiol. A.*, **186**, 729-736.
- Helversen, D. von (1993). "Absolute steepness" of ramps as an essential cue for auditory pattern recognition by a grasshopper (Orthoptera: Acrididae; *Chorthippus biguttulus* L.). *J. Comp. Physiol. A.*, **172**, 633-639.
- Helversen, D. von & von Helversen, O. (1998). Acoustic pattern recognition in a grasshopper: processing in the time or frequency domain? *Biol. Cybern.*, **79**, 467-476.
- Hennig, R. M. & Weber, T. (1997). Filtering of temporal parameters of the calling song by cricket females of two closely related species: A behavioral analysis. *J. Comp. Physiol. A.*, **180**, 621-630.
- Hennig, R. M., Weber, T., Huber, F., Kleindienst, H.-U., Moore, T. E. & Popov, A. V. (1993). A new function for an old structure: the timbal muscle in cicada females. *Naturwissenschaften*, **80**, 324-326.
- Henry, C. S., Martinez Wells, M. L. & Simon, C. M. (1999). Convergent evolution of courtship songs among cryptic species of the *Carnea* group of green lacewings (Neuroptera: Chrysopidae: *Chrysoperla*). *Evolution*, **53**, 1165-1179.
- Henry, C. S. (1994). Singing and cryptic speciation in insects. *Trends Ecol. Evol.*, **9**, 388-392.
- Henry, C. S., Martinez Wells, M. & Pupedis, R. J. (1993). Hidden taxonomic diversity within *Chrysoperla plorabunda* (Neuroptera: Chrysopidae): Two new species based on courtship songs. *Ann. Entomol.*

- Soc. Am.*, **86**, 1-13.
- Henry, C. S. (1993). *Chrysoperla johnsoni* (Neuroptera, Chrysopidae): acoustic evidence for full species status. *Ann. Entomol. Soc. Am.*, **86**, 14-25.
- Henry, C. S., Brooks, S. J., Johnson, J. B. & Duelli, P. (1999). Revised concept of *Chrysoperla mediterranea* (Holzel), a green lacewing associated with conifers: Courtship songs across 2800 kilometres of Europe (Neuroptera: Chrysopidae). *System. Entomol.*, **24**, 335-350.
- Hickling, R. & Brown, R. L. (2000). Analysis of acoustic communication by ants. *J. Acoust. Soc. Am.*, **108**, 1920-1929.
- Hill, P. S. M. (1998). Environmental and social influences on calling effort in the prairie mole cricket (*Gryllotalpa major*). *Behav. Ecol.*, **9**, 101-108.
- Hill, P. S. M. & Shadley, J. R. (1997). Substrate vibration as a component of a calling song. *Naturwissenschaften*, **84**, 460-463.
- Hill, P. S. M. & Shadley, J. R. (2001). Talking back: Sending soil vibration signals to lekking prairie mole cricket males. *Am. Zool.*, **41**, 1200-1214.
- Hill, P. S. M. (1996). The communication repertoire of the prairie mole cricket. *Am. Zool.*, **36**, 92A.
- Hintze-Podufal, C. & von Hermanni, G. (1996). The development of the tympanic organs of wax moth species and their inverted scolopidia (Lepidoptera: Pyralidae: Galleriinae). *Entomol. Gen.*, **20**, 195-201 (German).
- Hirabayashi, K. & Ogawa, K.-I. (1999). The efficiency of artificial wingbeat sounds for capturing midges in black light traps. *Entomol. Exp. Appl.*, **92**, 233-238.
- Hirschberger, P. (2001). Stridulation in *Aphodius* dung beetles: Behavioral context and intraspecific variability of song patterns in *Aphodius ater* (Scarabaeidae). *J. Insect Behav.*, **14**, 69-88.
- Hoback, W. W. & Wagner, W. E. Jr. (1997). The energetic cost of calling in the variable field cricket, *Gryllus lineaticeps*. *Physiol. Entomol.*, **22**, 286-290.
- Hoffart, C. & Hill, P. S. M. (2000). Morphological and molecular phylogenetic analyses of the Gryllotalpidae: What came first, the chirp or the trill? *Am. Zool.*, **40**, 1060.
- Hoffmann, E. & Jatho, M. (1995). The acoustic trachea of tettigoniids as an exponential horn: Theoretical calculations and bioacoustical measurements. *J. Acoust. Soc. Am.*, **98**, 1845-1851.
- Hoikkala, A. & Moro, S. (2000). SEM search for sound production and sound perception organs in a variety of *Drosophila* species. *Microsc. Res. Tech.*, **50**, 161-168.
- Hoikkala, A., Aspi, J. & Suvanto, L. (1998). Male courtship song frequency as an indicator of male genetic quality in an insect species, *Drosophila montana*. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 503-508.
- Hoikkala, A., Kaneshiro, K. Y. & Hoy, R. R. (1994). Courtship songs of the picture-winged *Drosophila planitibia* subgroup species. *Anim. Behav.*, **47**, 1363-1374.
- Hoikkala, A. & Crossley, S. (2000). Copulatory courtship in *Drosophila*: Behavior and songs of *D. birchii* and *D. serrata*. *J. Insect Behav.*, **13**, 71-86.
- Hoikkala, A. & Suvanto, L. (1999). Male courtship song frequency as an indicator of male mating success in *Drosophila montana*. *J. Insect Behav.*, **12**, 599-609.
- Hoikkala, A., Crossley, S. & Castillo-Melendez, C. (2000). Copulatory courtship in *Drosophila birchii* and *D. serrata*, species recognition and sexual selection. *J. Insect Behav.*, **13**, 361-373.
- Hoikkala, A. & Kaneshiro, K. Y. (1997). Variation in male wing song characters in *Drosophila plantibia* (Hawaiian picture-winged *Drosophila* group). *J. Insect Behav.*, **10**, 425-436.
- Hoikkala, A. & Isoherranen, E. (1997). Variation and repeatability of courtship song characters among wild-caught and laboratory-reared *Drosophila montana* and *D. littoralis* males (Diptera: Drosophilidae). *J. Insect Behav.*, **10**, 193-202.
- Hoikkala, A., Paallysaho, S., Aspi, J. & Lumme, J. (2000). Localization of genes affecting species differences in male courtship song between *Drosophila virilis* and *D. littoralis*. *Genet. Res.*, **75**, 37-46.
- Hoikkala, A. & Aspi, J. (1993). Criteria of female mate choice in *Drosophila littoralis*, *D. montana* and *D. ezoana*. *Evolution*, **47**, 768-777.
- Hollander, J. Den & Barrientos, L. L. (1994). Acoustic and morphometric differences between allopatric populations of *Pterophylla beltrani* (Orthoptera: Tettigoniidae: Pseudophyllinae). *J. Orth. Res.*, **2**, 29-34.
- Holman, J. (1994). Possible sound producing structures present in some Macrosiphini (Homoptera: Aphididae). *Eur. J. Entomol.*, **91**, 97-101.
- Horseman, G. & Huber, F. (1994). Sound localisation in crickets. II. Modelling the role of a simple neural network in the prothoracic ganglion. *J. Comp. Physiol. A.*, **175**, 339-413.
- Hoy, R. R. & Robert, D. (1995). Tympanal hearing in insects. *Ann. Rev. Entomol.*, **40**, 433-450.
- Hoy, R. R. (1992). The evolution of hearing in insects as an adaptation to predation from bats. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag;

New York, pp. 115-130.

- Hoy, R. R. & Robert, D. (1996). Tympanal hearing in insects. *Ann. Rev. Entomol.*, **41**, 433-450.
- Hoy, R. R. (1992). Genetic and temperature coupling between sender and receiver in acoustic biocommunication systems. *Semin. Neurosci.*, **4**, 377-383.
- Huang, Y., Orti, G., Sutherlin, M., Duhachek, A. & Zera, A. (2000). Phylogenetic relationships of North American field crickets inferred from mitochondrial DNA data. *Molec. Phylogen. Evol.*, **17**, 48-57.
- Huber, F. (2000). 50 years of research in acoustic communication in crickets: Behaviour and neurobiology. *Verh. Westd. Entom. Tag 1998*, 1-31 (German).
- Huerta, C., Halfpfer, G. & Fresneau, D. (1992). Inhibition of stridulation in *Necrophorus* (Coleoptera: Silphidae): consequences for reproduction. *Elytron*, **6**, 151-157.
- Hunt, R. E. (1994). Vibrational signals associated with mating behavior in the treehopper, *Enchenopa binotata* Say (Hemiptera: Homoptera: Membracidae). *J. New York Entomol. Soc.*, **102**, 266-270.
- Hunt, J. & Allen, G. R. (1998). Fluctuating asymmetry, call structure and the risk of attack from phonotactic parasitoids in the bushcricket *Sciarasaga quadrata* (Orthoptera: Tettigoniidae). *Oecologia*, **116**, 356-364.
- Hunt, R. E. (1993). Role of vibrational signals in mating behavior of *Spissistilus festinus* (Homoptera: Membracidae). *Ann. Entomol. Soc. Am.*, **86**, 356-361.
- Hutchinson, J. M. C. (1997). The geometry of phonotaxis and herds: optimal trajectories and target spacing when quality is detectable at a distance. *Adv. Ethol.*, **32**, 168.
- Imaizumi, K. & Pollack, G. S. (1999). Neural coding of sound frequency by cricket auditory receptors. *J. Neurosci.*, **19**, 1508-1514.
- Ingrisch, S. (1995). Evolution of the *Chorthippus biguttulus* group (Orthoptera, Acrididae) in the Alps, based on morphology and stridulation. *Rev. Suisse Zool.*, **102**, 475-535.
- Isoherranen, E., Aspi, J. & Hoikkala, A. (1999). Inheritance of species differences in female receptivity and song requirement between *Drosophila virilis* and *D. montana*. *Hereditas* (Lund), **131**, 203-209.
- Isoherranen, E., Aspi, J. & Hoikkala, A. (1999). Variation and consistency of female preferences for simulated courtship songs in *Drosophila virilis*. *Anim. Behav.*, **57**, 619-625.
- Itoh, M. T. & Murakami, S. (2002). The effect of female wings on male courtship behavior in the cricket *Gryllus bimaculatus*. *Naturwissenschaften*, **89**, 230-232.
- Jablonski, P. G. & Wilcox, R. S. (1996). Signalling asymmetry in the communication of the water strider *Aquarius remigis* in the context of dominance and spacing in the non-mating season. *Ethology*, **102**, 353-359.
- Jacobs, K., Otte, B. & Lakes-Harlan, R. (1998). Tympanal receptor cells of *Schistocerca gregaria*: Correlation of soma positions and dendritic attachment sites, central projections and physiologies. *J. Exp. Zool.*, **283**, 270-285.
- Jang, Y. & Greenfield, M. D. (1996). Ultrasonic communication and sexual selection in wax moths: female choice based on energy and asynchrony of male signals. *Anim. Behav.*, **51**, 1095-1106.
- Jang, Y. & Greenfield, M. D. (1998). Absolute versus relative measurements of sexual selection: Assessing the contribution of ultrasonic signal characters to mate attraction in lesser wax moth, *Achroia grisella* (Lepidoptera, Pyralidae). *Evolution*, **52**, 1383-1393.
- Jang, Y., Collins, R. D. & Greenfield, M. D. (1997). Variation and repeatability of ultrasonic sexual advertisement signals in *Achroia grisella* (Lepidoptera: Pyralidae). *J. Insect. Behav.*, **10**, 87-98.
- Jang, Y. (1997). *Evolution and genetics of mate preference in an ultrasonic pyralid moth*. Ph.D. Dissertation. University of Kansas, Lawrence, USA.
- Jatho, M., Schul, J., Stiedl, O. & Kalmring, K. (1994). Specific differences in sound production and pattern recognition in tettigoniids. *Behav. Processes*, **31**, 293-300.
- Jefferey, J., Mapoma, M., Sickler, M., Mashaud, L., Snyder, K., Atkins, G. & Stout, J. (2000). Transformational encoding of two behaviorally significant features of the male's calling song by a single, first order interneuron in female crickets. *Soc. Neurosci. Abstr.*, **26**.
- Jeffery, J., Stout, J. & Atkins, G. (2001). The role of prothoracic interneurons in the recognition of the male's calling song by four species of female crickets. *Soc. Neurosci. Abstr.*, **27**, 1982.
- Jeraj, M. & Walter, G. H. (1998). Vibrational communication in *Nezara viridula*: response of Slovenian and Australian bugs to one another. *Behav. Process.*, **44**, 51-58.
- Jia, F.-Y., Greenfield, M. D. & Collins, R. D. (2001). Ultrasonic signal competition between male wax moths. *J. Insect Behav.*, **14**, 19-33.
- Jian, J., Yang, X., Wang, Y., Xu, M., Chen, H & Tang, H. (1995). Neural control of sound production in Mingming cicada. *Sci. China, Ser. B.*, **38**, 676-687.
- Jones, G. (1992). Bats vs moths: studies on the diets of rhinolophid and hipposiderid bats support the allotonic frequency hypothesis. In *Prague Studies in Mammalogy* (I. Horacek & V. Vohralik, eds.). Charles Univ. Press; Praha, pp. 87-92.

- Jones, C. (1993). Song preferences in female *Drosophila melanogaster*. M.Sc. Thesis. University of Wales, College of Cardiff.
- Joseph, K. J. (1991). SEM study of the stridulatory organs in the giant dung beetle *Heliocopris dominus* (Scarabaeidae) with observations on the significance of the sound production. *Entomon*, **16**, 319-322.
- Jun-Xian, S. (1993). A peripheral mechanism for auditory directionality in the bushcricket *Gampsocleis gratiosa*: acoustic tracheal system. *J. Acoust. Soc. Am.*, **94**, 1211-1217.
- Kalrmring, K., Roessler, W., Hoffmann, E., Jatho, M. & Unrast, C. (1995). Causes of the differences in detection of low frequencies in the auditory receptor organs of two species of bushcrickets. *J. Exp. Zool.*, **272**, 103-115.
- Kalrmring, K., Roessler, C. & Unrast, W. (1994). Complex tibial organs in the forelegs, midlegs and hindlegs of the bushcricket *Gampsocleis gratiosa* (Tettigoniidae): Comparison of the physiology of the organs. *J. Exp. Zool.*, **270**, 155-161.
- Kalrmring, K. & Jatho, M. (1994). The effect of blocking inputs of the acoustic trachea on the frequency tuning of primary auditory receptors in two species of tettigoniids. *J. Exp. Zool.*, **270**, 360-371.
- Kalrmring, K., Jatho, M., Roessler, W. & Sickman, T. (1997). Acousto-vibratory communication in bushcrickets (Orthoptera: Tettigoniidae). *Entomol. Gen.*, **21**, 265-291.
- Kalrmring, K., Roessler, W., Ebdndt, R., Ahi, J. & Lakes, R. (1993). The auditory receptor organs in the forelegs of bush-crickets: physiology, receptor cell arrangement, and morphology of the tympanal and intermediate organs of three closely related species. *Zool. Jahrb. Abt. Allg. Zool. Physiol. Tiere*, **97**, 75-94.
- Kamper, G. & Vedenina, V. Y. (1998). Frequency-intensity characteristics of cricket cercal interneurons: units with high-pass functions. *J. Comp. Physiol. A.*, **182**, 715-724.
- Kehlmaier, C. (2000). Studies upon the distribution, the life-cycle, and the male mating song of *Cercopis vulnerata* Rossi, 1807 (Auchenorrhyncha: Cercopidae) at the Schildstein in Lueneburg (Lower Saxony, Germany). *Braunschw. Naturkundl. Schr.*, **6**, 69-84.
- Kerr, W. E. (1994). Communication among *Melipona* workers (Hymenoptera: Apidae). *J. Insect Behav.*, **7**, 123-128.
- Kiflawi, M. & Gray, D. A. (2000). Size-dependent response to conspecific mating calls by male crickets. *Proc. Roy. Soc. Lond. B.*, **267**, 2157-2161.
- King, I. M. (1999). Species-specific sounds in water bugs of the genus *Micronecta*. Part 2, Chorusing. *Bioacoustics*, **10**, 19-29.
- King, I. M. (1999). Acoustic communication and mating behaviour in water bugs of the genus *Micronecta*. *Bioacoustics*, **10**, 115-130.
- King, I. M. (1997). Acoustic behaviour of water bugs of the genus *Micronecta kirkaldy* (Heteroptera: Corixidae). Ph.D. thesis, University of Melbourne.
- King, I. M. (1999). Species-specific sounds in water bugs of the genus *Micronecta*. Part 1, Sound analysis. *Bioacoustics*, **9**, 297-323.
- Kingsolver, J. M., Romero, N. J. & Johnson, C. D. (1993). Files and scrapers: Circumstantial evidence for stridulation in three species of *Amblycerus*, one new (Coleoptera: Bruchidae). *Pan-Pac Entomol.*, **69**, 122-132.
- Kirchner, W. H. (1993). Vibrational signals in the tremble dance of the honeybee, *Apis mellifera*. *Behav. Ecol. Sociobiol.*, **33**, 169-172.
- Kirchner, W. H. & Dreller, C. (1993). Acoustical signals in the dance language of the giant honeybee *Apis dorsata*. *Behav. Ecol. Sociobiol.*, **33**, 67-72.
- Kirchner, W. H., Lindauer, M. & Michelsen, A. (1988). Honeybee dance communication. Acoustical indication of direction in round dances. *Naturwissenschaften*, **75**, 629-630.
- Kirchner, W. H. (1994). Hearing in honeybees: The mechanical response of the bee's antenna to near field sound. *J. Comp. Physiol. A.*, **175**, 261-265.
- Kirchner, W. H., Broecker, I. & Tautz, J. (1994). Vibrational alarm communication in the damp-wood termite *Zootermopsis nevadensis*. *Physiol. Entomol.*, **19**, 187-190.
- Klappert, K. & Reinhold, K. (2001). What makes the song of a male grasshopper so irresistible? *Zoology (Jena)*, **103**, Suppl. 3, 45.
- Klaassen, R. E. & Furgason, E. S. (1988). Characterization of ultrasonic signals generated by concealed insects. *IEEE 1988 Ultrasonics Symposium*, **2**, 923-927.
- Knopek, L. von & Hintze-Podufal, C. (1986). On the morphology of the abdominal tympanic organ of the little wax moth *Achroia grisella* (Fbr.). *Zool. Jahrb., Abt. Anat. Ontog. Tiere*, **114**, 83-93.
- Knyazev, A. N. & Chudakova, I. V. (1993). Hormonal regulation of acoustic communication in crickets: effects of larval castration. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 345-354.
- Koehler, U. & Lakes-Harlan, R. (2001). Auditory behaviour of a parasitoid fly (*Emblemasoma auditrix*,

- Sarcophagidae, Diptera). *J. Comp. Physiol. A.*, **187**, 581-587.
- Koessl, M. & Boyan, G. S. (1998). Otoacoustic emissions from a nonvertebrate ear. *Naturwissenschaften*, **85**, 124-127.
- Koessl, M. & Boyan, G. S. (1998). Acoustic distortion products from the ear of a grasshopper. *J. Acoust. Soc. Am.*, **104**, 326-335.
- Kolluru, G. R. (1998). Sex can be dangerous: Acoustically-orienting parasitoids on field crickets (Orthoptera: Gryllidae). *Metalepta*, **18(1)**, 5-7.
- Kolluru, G. R. (1999). Variation and repeatability of calling behavior in crickets subject to a phonotactic parasitoid fly. *J. Insect Behav.*, **12**, 611-626.
- Kon, M., Akemi, O. E., Numata, H. & Hidaka, T. (1988). Comparison of the mating behaviour between two sympatric species, *Nezara antennata* and *Nezara viridula* (Heteroptera: Pentatomidae), with special reference to sound emission. *J. Ethol.*, **2**, 91-98.
- Konopka, R. J., Kyriacou, C. P. & Hall, J. C. (1996). Mosaic analysis in the *Drosophila* CNS of circadian and courtship song rhythms affected by a period clock mutation. *J. Neurogenet.*, **11**, 117-139.
- Kos, M. & Gogala, M. (2000). The cicadas of the *Purana nebulilinea* group (Homoptera, Cicadidae) with a note on their songs. *Tijdschrift Entomol.*, **143**, 1-26.
- Krahe, R. & Ronacher, B. (1993). Long rise times of sound pulses in grasshopper songs improve the directionality cues received by the CNS from the auditory receptors. *J. Comp. Physiol., A.*, **173**, 425-434.
- Krahe, R., Budinger, E. & Ronacher, B. (2002). Coding of a sexually dimorphic song feature by auditory interneurons of grasshoppers: The role of leading inhibition. *J. Comp. Physiol. A.*, **187**, 977-985.
- Kreusel, B. & Haeuser, C. L. (1997). Relationships between tympanal organ structure and activity patterns in ctenuchine moths (Lepidoptera, Arctiidae). *Verh. Deutsch. Zool. Ges.*, **90**, 176.
- Kyriacou, C. P., van den Berg, M. & Hall, J. C. (1990). Courtship song rhythms in wild-type and period mutant *Drosophila* revisited. *Behav. Genet.*, **20**, 631-658.
- Kyriacou, C. P., Greenacre, M. L., Thackeray, J. R. & Hall, J. C. (1993). Genetic and molecular analysis of song rhythms in *Drosophila*. In *Cellular Clocks Series, Vol. 4. Molecular Genetics of Biological Rhythms* (M. W. Young, ed). Marcel Dekker, Inc.; New York, pp. 171-193.
- Lakes-Harlan, R., Stoelting, H. & Moore, T. E. (2000). Phonotactic behaviour of a parasitoid fly (*Emblemasoma auditrix*, Diptera, Sarcophagidae) in response to the calling song of its host cicada (*Okanagana rimosa*, Homoptera, Cicadidae). *Zoology (Jena)*, **103**, 31-39.
- Lakes-Harlan, R., Stumpner, A. & Allen, G. R. (1995). Functional adaptations of the auditory system of two parasitoid fly species, *Therobia leonidei* and *Homotrixia* spec. In *Nervous Systems and Behaviour 1995* (M. Burrows, T. Matheson, P. L. Newland and H. Schuppe, eds.). Thieme-Verlag; New York, p. 358.
- Lakes-Harlan, R., Jacobs, K. & Heinrich, R. (1998). Identification of auditory interneurons in situ and in vitro by tracer injection into an afferent neuropil of *Locusta migratoria*. *Naturwissenschaften*, **85**, 240-243.
- Lakes-Harlan, R. & Pfahlert, C. (1995). Regeneration of axotomized tympanal nerve fibres in the adult grasshopper *Chorthippus biguttulus* (L.) (Orthoptera: Acrididae). *J. Comp. Physiol. A.*, **176**, 796-807.
- Lang, F. (1996). Noise filtering in the auditory system of *Locusta migratoria* L. *J. Comp. Physiol. A.*, **179**, 575-585.
- Lang, F. (2000). Acoustic communication distances of a gomphocerine grasshopper. *Bioacoustics*, **10**, 233-258.
- Lapshin, D. N. & Zhantiev, O. D. (1993). The effect of rhythmic sound signals on the cricket flight system. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 370-375.
- Lapshin, D. N., Fyodorova, M. V. & Zhantiev, R. D. (1993). Emission and perception of ultrasounds in some noctuid moths (Lepidoptera, Noctuidae). In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 363-369.
- Larsen, O. N., Kleindienst, H.-U. & Michelsen, A. (1989). Biophysical aspects of sound reception. In *Cricket Behavior and Neurobiology* (F. Huber, T. E. Moore & W. Loher, eds.). Cornell University Press; Ithaca, pp. 364-390.
- Lees, D. C. (1992). Foreleg stridulation in male *Urania* moths (Lepidoptera, Uraniidae). *Zool. J. Linn. Soc.*, **106**, 163-170.
- Lehmann, G. & Heller, K.-G. (1998). Bushcricket song structure and predation by the acoustically orienting parasitoid fly *Therobia leonidei* (Diptera: Tachinidae: Ormiini). *Behav. Ecol. Sociobiol.*, **43**, 239-245.
- Lehmann, A. & Heller, K.-G. (1997). Evolution of signals and preferences in acoustically communicating bushcrickets. *Adv. Ethol.*, **32**, 207.
- Leiler, T.-E. (1992). Sound production by lamiine larvae (Coleoptera, Cerambycidae). *Entomol. Tidskr.*, **113**, 55-56.
- Leis, M., Sbrenna-Micciarelli, A. & Sbrenna, G. (1992). Communication in termites: preliminary observations

- on the vibratory movements of *Kaloterme flavicollis* (Fabr.) (Isoptera, Kalotermitidae). *Ethol. Ecol. Evol.*, **2**, 111-114.
- Lewis, F., Fullard, J. H. & Morrill, S. (1993). Auditory influences on the flight behaviour of moths at a Nearctic site. II. Flight times, heights and erraticism. *Can. J. Zool.*, **71**, 1562-1568.
- Lewis, L. A. & Schneider, S. S. (2000). The modulation of worker behavior by the vibration signal during house hunting in swarms of the honeybee, *Apis mellifera*. *Behav. Ecol. Sociobiol.*, **48**, 154-164.
- Lewis, L. A., Schneider, S. S. & Degradi-Hoffman, G. (2002). Factors influencing the selection of recipients by workers performing vibration signals in colonies of the honeybee, *Apis mellifera*. *Anim. Behav.*, **63**, 361-367.
- Li, K. & Lian, Z. (1999). Sound structure analyses of three species of crickets (Orthoptera: Grylloidea) from Hubei Province. *Entomotaxonomia*, **21**, 187-190.
- Li, K. & Zheng, Z. (1999). Sound characteristics analysis and the identification of six species of *Loxoblemmus* (Orthoptera: Grylloidea). *Entomotaxonomia*, **21**, 17-21.
- Libersat, F., Murray, J. A. & Hoy, R. R. (1994). Frequency as a releaser in the courtship song of two crickets, *Gryllus bimaculatus* (de Geer) and *Teleogryllus oceanicus*: A neuroethological analysis. *J. Comp. Physiol. A*, **174**, 485-494.
- Lickman, K., Murray, A.-M. & Cade, W. H. (1998). Effect of mating on female phonotactic response in *Gryllus integer* (Orthoptera: Gryllidae). *Can. J. Zool.*, **76**, 1263-1268.
- Lin, Y. Z., Kalmring, K., Jatho, M., Sickmann, T. & Rossler, W. (1993). Auditory receptor organs in the forelegs of *Gampsocleis gratiosa* (Tettigoniidae): morphology and function of the organs in comparison to the frequency parameters of the conspecific song. *J. Exp. Zool.*, **267**, 377-388.
- Lins, F. & Elsner, N. (1995). Descending stridulatory interneurons in the suboesophageal ganglion of two grasshopper species. I. Anatomy and song-specific activity. *J. Comp. Physiol. A*, **176**, 809-821.
- Lins, F. & Elsner, N. (1995). Descending stridulatory interneurons in the suboesophageal ganglion of two grasshopper species. II. Influence upon the stridulatory patterns. *J. Comp. Physiol. A*, **176**, 823-833.
- Loher, W., Weber, T. & Huber, F. (1993). The effect of mating on phonotactic behaviour in *Gryllus bimaculatus* (De Geer). *Physiol. Entomol.*, **18**, 57-66.
- Loher, W., Weber, T., Rembold, H. & Huber, F. (1992). Persistence of phonotaxis in females of four species of crickets following allatectomy. *J. Comp. Physiol. A*, **171**, 325-341.
- Lorier, E., Garcia, M. D., Clemente, M. E. & Presa, J. J. (2002). Acoustic behavior of *Metaleptea adspersa* (Orthoptera: Acrididae). *Can. Entomol.*, **134**, 113-123.
- Luca, P. A. de & Morris, G. K. (1998). Courtship communication in meadow katydids: female preference for large male vibrations. *Behaviour*, **135**, 777-793.
- Lund, H. H., Webb, B. & Hallam, J. (1998). Physical and temporal scaling considerations in a robot model of cricket calling song preference. *Artific. Life*, **4**, 95-107.
- Lyal, C. H. C. & King, T. (1996). Elytro-tergal stridulation in weevils (Insecta: Coleoptera: Curculionoidea). *J. Nat. Hist.*, **30**, 703-773.
- MacDermid, V. & Fullard, J. (1998). Not all receptor cells are equal: Octopamine exerts no influence on auditory thresholds in the noctuid moth *Catocala cerogama*. *Naturwissenschaften*, **85**, 505-507.
- Machens, C. K., Stemmler, M. B., Prinz, P., Ritz, R., Ronacher, R. & Herz, A. V. (2000). Representation of acoustic communication signals in the grasshopper auditory system. *Soc. Neurosci. Abstr.*, **26**.
- Machens, C. K., Stemmler, M. B., Prinz, P., Krahe, R., Ronacher, B. & Herz, A. V. (2001). Representation of acoustic communication signals by insect auditory receptor neurons. *J. Neurosci.*, **21**, 3215-3227.
- Malkmus, R. (1995). Who calls here: Frog or cricket? *Sauria, Berlin*, **17**, 35-38 (German).
- Mankin, R. W. (1994). Acoustical detection of *Aedes taeniorhynchus* swarms and emergence exoduses in remote salt marshes. *J. Am. Mosq. Control. Assoc.*, **10**, 302-308.
- Martin, S. D., Gray, D. A. & Cade, W. H. (2000). Fine-scale temperature effects on cricket calling song. *Can. J. Zool.*, **78**, 706-712.
- Martinez Wells, M. & Henry, C. S. (1994). Behavioral responses of hybrid lacewings (Neuroptera: Chrysopidae) to courtship songs. *J. Insect Behav.*, **7**, 649-662.
- Mason, A. C., Morris, G. K. & Hoy, R. R. (1999). Peripheral frequency mismatch in the primitive ensiferan *Cyphoderris monstrosa* (Orthoptera: Haglidae). *J. Comp. Physiol. A*, **184**, 543-551.
- Mason, A. C. & Bailey, W. J. (1998). Ultrasound hearing and male-male communication in Australian katydids (Tettigoniidae: Zaprochilinae) with sexually dimorphic ears. *Physiol. Entomol.*, **23**, 139-149.
- Mason, A. C. & Schildberger, K. (1993). Auditory interneurons in *Cyphoderris monstrosa* (Orthoptera, Haglidae). *J. Comp. Physiol. A*, **171**, 749-757.
- Mason, A. C. (1996). Territoriality and the function of song in the primitive acoustic insect *Cyphoderris monstrosa* (Orthoptera: Haglidae). *Anim. Behav.*, **51**, 211-224.
- Mason, A. C., Forrest, T. G. & Hoy, R. R. (1998). Hearing in mole crickets (Orthoptera: Gryllotalpidae) at sonic and ultrasonic frequencies. *J. Exp. Biol.*, **201**, 1967-1979.

- Mason, A. C., Oshinsky, M. L. & Hoy, R. R. (2001). Hyperacute directional hearing in a microscale auditory system. *Nature*, **410**, 686-690.
- Mayer, F. & von Helversen, O. (2001). Sexual selection in a hybrid population of the grasshopper *Chorthippus biguttulus*. *Zoology* (Jena), **103**, Suppl. 3, 47.
- Mbata, K. J. (1992). Some observations on the reproductive behaviour of *Acanthoplus speiseri* Brancsik (Orthoptera: Tettigoniidae: Heterodinae). *Insect Sci. Appl.*, **13**, 19-26.
- Mbata, K. J. (1992). Functional morphology of the stridulatory apparatus of *Acanthoplus speiseri* Brancsik (Orthoptera: Tettigoniidae, Heterodinae). *J. Entomol. Soc. South. Afr.*, **55**, 227-244.
- McVean, A. & Field, L. H. (1996). Communication by substratum vibration in the New Zealand tree weta, *Hemideina femorata* (Stenopelmatidae: Orthoptera). *J. Zool.*, **239**, 101-122.
- Meier, T. & Reichert, H. (1990). Embryonic development and evolutionary origin of the orthopteran auditory organs. *J. Neurobiol.*, **21**, 592-610.
- Meyer, J. & Elsner, N. (1997). Can spectral cues contribute to species separation in closely related grasshoppers? *J. Comp. Physiol. A.*, **180**, 171-180.
- Meyer, J. (1994). Possibilities and limits in the adaptation of hearing on the demands of intraspecific communication in field crickets. A biophysical, electrophysiologic and behavioural study. Dissertation. University of Göttingen (German).
- Meyer, J. & Hedwig, B. (1995). The influence of tracheal pressure changes on the responses of the tympanal membrane and auditory receptors in the locust *Locusta migratoria* L. *J. Exp. Biol.*, **198**, 1327-1339.
- Meyer, J. & Elsner, N. (1996). How well are frequency sensitivities of grasshopper ears tuned to species-specific song spectra? *J. Exp. Biol.*, **199**, 1631-1642.
- Meyhoefer, R., Casas, J. & Dorn, S. (1994). Host location by a parasitoid using leafminer vibrations: characterizing the vibrational signals produced by the leafmining host. *Physiol. Entomol.*, **19**, 349-359.
- Meyhofer, R. & Casas, J. (1999). Vibratory stimuli in host location by parasitic wasps. *J. Insect Physiol.*, **45**, 967-971.
- Michelsen, A. & Elsner, N. (1999). Sound emission and the acoustic far field of a singing acridid grasshopper (*Omocestus viridulus* L.). *J. Exp. Biol.*, **202**, 1571-1578.
- Michelsen, A. & Rohrseitz, K. (1997). Sound localisation in a habitat: an analytical approach to quantifying the degradation of directional cues. *Bioacoustics*, **7**, 291-313.
- Michelsen, A. (1998). Biophysics of sound localization in insects. In *Comparative Hearing: Insects*. (R. R. Hoy, A. N. Popper and R. R. Fay, eds.). Springer; New York, pp. 18-62.
- Michelsen, A., Popov, A. V. & Lewis, B. (1994). Physics of directional hearing in the cricket *Gryllus bimaculatus*. *J. Comp. Physiol. A.*, **175**, 153-162.
- Michelsen, A. & Rohrseitz, K. (1995). Directional sound processing and interaural sound transmission in a small and a large grasshopper. *J. Exp. Biol.*, **198**, 1817-1827.
- Michelsen, A. (1994). Directional hearing in crickets and other small animals. *Fortschr. Zool.*, **39**, 195-207.
- Michelsen, A. & Fonseca, P. (2000). Spherical sound radiation patterns of singing grass cicadas, *Tympanistalna gastrica*. *J. Comp. Physiol. A.*, **186**, 163-168.
- Michelsen, A. & Loehe, G. (1995). Tuned directionality in cricket ears. *Nature*, **375**, 639.
- Michelsen, A., Heller, K.-G., Stumpner, A. & Rohrseitz, K. (1994). A new biophysical method to determine the gain of the acoustic trachea in bushcrickets. *J. Comp. Physiol. A.*, **175**, 145-151.
- Michelsen, A., Towne, W. F., Kirchner, W. H. & Kryger, P. (1987). The acoustic near field of a dancing honeybee. *J. Comp. Physiol. A.*, **161**, 633-643.
- Miklas, N., Stritih, N., Cokl, A., Virant-Doberlet, M. & Renou, M. (2001). The influence of substrate on male responsiveness to the female calling song in *Nezara viridula*. *J. Insect Behav.*, **14**, 313-332.
- Miles, R. N., Robert, D. & Hoy, R. R. (1995). Mechanically coupled ears for directional hearing in the parasitoid fly *Ormia ochracea*. *J. Acoust. Soc. Am.*, **98**, 3059-3070.
- Miller, L. A. (1991). Arctiid moth clicks can degrade the accuracy of range difference discrimination in echolocating big brown bats. *J. Comp. Physiol. A.*, **168**, 571-579.
- Miller, L. A. (1995). How some insects detect and avoid being eaten by bats: the tactics and counter tactics of prey and predator. *Am. Zool.*, **35**, 41A.
- Minckley, R. L. & Greenfield, M. D. (1995). Psychoacoustics of female phonotaxis and the evolution of male signal interactions in Orthoptera. *Ethol. Ecol. Evol.*, **7**, 235-243.
- Minckley, R. L., Greenfield, M. D. & Tourtellot, M. K. (1995). Chorus structure in tarbush grasshoppers: inhibition, selective phonoresponse and signal competition. *Anim. Behav.*, **50**, 579-594.
- Monge-Najera, J., Hernandez, F., Gonzalez, M. I., Soley, J., Araya, J. & Zolla, S. (1998). Spatial distribution, territoriality and sound production by tropical cryptic butterflies (*Hamadryas*, Lepidoptera: Nymphalidae): implications for the 'industrial melanism' debate. *Revista de Biologica Tropical*, **46**, 297-330.

- Monge-Najera, J. & Hernandez, F. (1991). A morphological search for the sound mechanism of *Hamadryas* butterflies (Lepidoptera: Nymphalidae). *J. Res. Lepid.*, **30**, 196-208.
- Moore, T. E., Huber, F., Weber, T., Klein, U. & Bock, C. (1993). Interaction between visual and phonotactic orientation during flight in *Magiccada cassini* (Homoptera: Cicadidae). *Great Lakes Entomol.*, **26**, 199-221.
- Morris, G. K. & Mason, A. C. (1995). Covert stridulation: novel sound generation by a South American katydid. *Naturwissenschaften*, **82**, 96-98.
- Morris, G. K., Mason, A. C., Wall, P. & Belwood, J. J. (1994). High ultrasonic and tremulation signals in Neotropical katydids (Orthoptera, Tettigoniidae). *J. Zool.*, **233**, 129-163.
- Morris, G. K., DeLuca, P. A., Norton, M. & Mason, A. C. (2002). Calling-song function in male haglids (Orthoptera: Haglidae, *Cyphoderris*). *Can. J. Zool.*, **80**, 271-285.
- Moss, J. T. & Moulds, M. S. (2000). A new species of *Psaltoda stal*, with notes on comparative morphology and song structure (Hemiptera: Cicadidae). *Austr. Entomol.*, **27**, 47-60.
- Moulin, B., Rybak, F., Aubin, T. & Jallon, J. M. (2001). Compared ontogenesis of courtship song components of males from the sibling species, *D. melanogaster* and *D. simulans*. *Behav. Genet.*, **31**, 299-308.
- Moulin, B. & Rybak, F. (1998). Ontogenesis of *Drosophila* courtship song. *Bioacoustics*, **9**, 153.
- Mueller, P. & Robert, D. (2001). A shot in the dark: the silent quest of a free-flying phonotactic fly. *J. Exp. Biol.*, **204**, 1039-1052.
- Muller, K. L. (1998). The role of conspecifics in habitat settlement in a territorial grasshopper. *Anim. Behav.*, **56**, 479-485.
- Murray, A.-M. & Cade, W. H. (1997). Longitudinal studies of selection and mating behavior in field crickets. *Metalepta*, **17(2)**, 9.
- Naessig, W. A., Oberprieler, R. G. & Duke, N. J. (1992). Preliminary observations on sound production in South African hawk moths (Lepidoptera: Sphingidae). *J. Entomol. Soc. South Afr.*, **55**, 277-279.
- Navia, B. J., Atkins, G., Fang, H., Rawson, R. & Stout, J. (2000). Evaluation of inhibitory inputs onto the 13 auditory interneuron in the cricket and their role in syllable period selective phonotaxis. *Soc. Neurosci. Abstr.*, **26**.
- Neems, R. M. & Butlin, R. K. (1993). Divergence in mate finding behaviour between two subspecies of the meadow grasshopper *Chorthippus parallelus* (Orthoptera, Acrididae). *J. Insect Behav.*, **6**, 421-430.
- Neems, R. M., Dooher, K., Butlin, R. K. & Shorrocks, B. (1997). Differences in male courtship song among the species of the *quinaria* group of *Drosophila*. *J. Insect Behav.*, **10**, 237-246.
- Nelson, C. M. & Nolen, T. G. (1997). Courtship song, male agonistic encounters, and female mate choice in the house cricket, *Acheta domesticus* (Orthoptera: Gryllidae). *J. Insect Behav.*, **10**, 557-570.
- Niedzlek-Feaver, M. (1995). Crepitation, pair formation, and female choice in *Chortophaga viridifasciata* (DeGeer)(Orthoptera: Acrididae). *J. Orth. Res.*, **4**, 131-142.
- Nischk, F. (1998). Bioacoustic niches of crickets (Orthoptera, Gryllidae): A comparison of neotropical forest ecosystems. *Verh. Westd. Entom. Tag 1997*, **177-186** (German).
- Nolen, T. C., Lam, C., Wong, J., Luayon, L. & Luayon, J. (1992). High frequency components in the rivalry song of territorial male crickets: multiple functions for aversion to ultrasound. *Proc. Int. Congr. Neuroethol.*, **3**.
- Noor, M. A. F., Williams, M. A., Alvarez, D. & Ruiz-Garcia, M. (2000). Lack of evolutionary divergence in courtship songs of *Drosophila pseudoobscura* subspecies. *J. Insect Behav.*, **13**, 255-262.
- Noor, M. A. F. & Aquadro, C. (1998). Courtship songs of *Drosophila pseudoobscura* and *D. persimilis*: analysis of variation. *Anim. Behav.*, **56**, 115-125.
- Norman, A. P., Jones, G. & Arlettaz, R. (1999). Noctuid moths show neural and behavioural responses to sounds made by some bat-marking rings. *Anim. Behav.*, **57**, 829-835.
- Northcott, M. A. & Fullard, J. H. (1996). The closed-loop nature of the tymbal response in the dogbane tiger moth, *Cyrcia tenera* (Lepidoptera, Arctiidae). *Brain Behav. Evol.*, **48**, 130-136.
- Nummelin, M. (1987). Ripple signals of the water strider *Limnopus rufoscutellatus* (Heteroptera, Gerridae). *Ann. Zool. Fenn.*, **53**, 17-22.
- Ohnishi, K. & Yamaguchi, T. (1993). Light-induced, sound-induced, and ultrasound-induced cercal movements in flying crickets. *Zool. Sci.*, **10**, 749-756.
- Oliveira, P. A. P., Simoes, P. C. & Quartau, J. A. (2001). Calling songs of certain orthopteran species (Insecta, Orthoptera) in southern Portugal. *Anim. Biodiv. Conserv.*, **24**, 65-79.
- Olvido, A. E. & Mousseau, T. A. (1995). Effect of rearing environment on calling song plasticity in the striped ground cricket. *Evolution*, **49**, 1271-1277.
- Orci, K. M., Rague, D. R. & Reynolds, W. J. (2002). A re-examination of the taxonomy of *Euchorthippus pulvinatus* and related species on the basis of morphology and song (Orthoptera: Acrididae). *J. Nat. Hist.*, **36**, 585-600.
- Orci, K. M., Szovenyi, G. & Nagy, B. (2001). Description of the song of *Isophya beybienkoi* (Orthoptera,

- Tettigonioidea). *Biologia* (Bratislava), **56**, 489-495.
- Ordish, R. G. (1992). Aggregation and communication of the Wellington weta *Hemideina crassidens* (Blanchard)(Orthoptera: Stenopelmatidae). *N. Z. Entomol.*, **15**, 1-8.
- Otazo, A., Corro, F. & Portilla, N. (1989). Acoustic stimuli evoke spikes from the last abdominal ganglion in an arctiid moth. *Naturwissenschaften*, **76**, 430-431.
- Otero, L. D. (1990). The stridulatory organ in *Hamadryas* (Nymphalidae): Preliminary observations. *J. Lepidopt. Soc.*, **44**, 285-288.
- Otis, G. W., Patton, K. & Tingek, S. (1995). Piping by queens of *Apis cerana* Fabricius 1793 and *Apis koschevnikovi* v Buttel-Reepen 1906. *Apidologie*, **26**, 61-65.
- Otte, D. & Peck, S. B. (1997). New species of *Gryllus* (Orthoptera: Grylloidea: Gryllidae) from the Galapagos Islands. *J. Orth. Res.*, **6**, 161-173.
- Otten, H., Waeckers, F., Battini, M. & Dorn, S. (2001). Efficiency of vibrational sounding in the parasitoid *Pimpla turionellae* is affected by female size. *Anim. Behav.*, **61**, 671-677.
- Otto, D. & Hennig, R. M. (1993). Interneurons descending from the cricket subsophageal ganglion control stridulation and ventilation. *Naturwissenschaften*, **80**, 36-38.
- Paez, V. P., Bock, B. C. & Rand, A. S. (1993). Inhibition of evoked calling of *Dendrobates pumilio* due to acoustic interference from cicada calling. *Biotropica*, **25**, 242-245.
- Paillette, M., Bizat, N. & Joly, D. (1997). Differentiation of dialects and courtship strategies in allopatric populations of *Drosophila teissieri*. *J. Insect Physiol.*, **43**, 809-814.
- Painter-Kurt, S. & Schneider, S. S. (1998). Age and behavior of honey bees, *Apis mellifera* (Hymenoptera, Apidae), that perform vibration signals on queens and queen cells. *Ethology*, **104**, 475-485.
- Painter-Kurt, S. & Schneider, S. S. (1998). Age and behavior of honey bees, *Apis mellifera* (Hymenoptera: Apidae), that perform vibration signals on workers. *Ethology*, **104**, 457-473.
- Palestrini, C., Luzzatto, M., Roggero, A. & Zunino, M. (1997). Acoustic emission in *Megatrupes cavicollis* (Bates 1887)(Coleoptera, Geotrupinae). *Bioacoustics*, **8**, 263-264.
- Palestrini, C., Pensati, F., Barbero, E. & Zunino, M. (1996). Interspecific differences of distress signals in Passalid beetles (Coleoptera, Passalidae). In *Proceedings of the Sixth Conference of the Italian section of the International Union for the study of social insects. Insect Social Life*, Vol. 1., pp. 227-231.
- Palestrini, C. & Zunino, M. (1987). The biological meaning of sounds produced by nesting and subsocial Lamellicorn beetles. In *Ethological Perspectives in Social and Presocial Arthropods. Pubbl. Ist. Entom. Univ. Pavia*, **36**, 81-85.
- Palestrini, C. & Pavan, G. (1995). The stridulation in *Thorectes intermedius* (Costa, 1827)(Coleoptera: Geotrupidae). *Elytron*, **9**, 115-124.
- Parkman, J. P. & Frank, J. H. (1993). Use of a sound trap to inoculate *Steinernema scapterisci* (Rhabditida, Steinernematidae) into pest mole cricket populations (Orthoptera, Gryllotalpidae). *Fla. Entomol.*, **76**, 75-82.
- Pavan, G., de Carli, P., Priano, M., Lachaud, J.-P., Beugnon, G., Fanfani, A. & Giovannotti, M. (1996). Stridulation in 5 species of Neotropical Ponerinae ants (Hymenoptera, Formicidae). In *Proceedings of the Sixth Conference of the Italian section of the International Union for the Study of Social Insects. Insect social life*, Vol. 1, pp. 169-172.
- Pavan, G., Priano, M., de Carli, P., Fanfani, A. & Giovannotti, M. (1997). Stridulatory organ and ultrasonic emission in certain species of ponerine ants (genus: *Ectatomma* and *Pachycondyla*, Hymenoptera, Formicidae). *Bioacoustics*, **8**, 209-221.
- Pavey, C. R. & Burwell, C. J. (1998). Bat predation on eared moths: a test of the allotonic frequency hypothesis. *Oikos*, **81**, 143-151.
- Pavlovic, P. & Cokl, A. (2001). Songs of *Holcostethus strictus* (Fabricius): a different repertoire among landbugs (Heteroptera: Pentatomidae). *Behav. Process.*, **53**, 65-73.
- Pearson, G. A. & Allen, D. M. (1996). Vibrational communication in *Eusattus convexus* LeConte (Coleoptera: Tenebrionidae). *Coleopt. Bull.*, **50**, 391-394.
- Peixoto, A. A., Costa, R. & Hall, J. C. (2000). Molecular and behavioral analysis of sex-linked courtship song variation in a natural population of *Drosophila melanogaster*. *J. Neurogenet.*, **14**, 245-256.
- Peixoto, A. A. & Hall, J. C. (1998). Analysis of temperature-sensitive mutants reveals new genes involved in the courtship song of *Drosophila*. *Genetics*, **148**, 827-838.
- Perez, M., Portilla, N., Otazo, A., Coro, F. & Barro, P. (1988). The auditory system of noctuid moths and its possible role in mating behavior. *Wiss. Z. Humboldt-Univ. Berlin R. Math/Nat.Wiss.*, **37**, 322-327.
- Pfannenstiel, R. S., Hunt, R. E. & Yeagan, K. V. (1995). Orientation of a hemipteran predator to vibrations produced by feeding caterpillars. *J. Insect Behav.*, **8**, 1-10.
- Pfluger, H.-J. & Field, L. H. (1999). A locust chordotonal organ coding for proprioceptive and acoustic stimuli. *J. Comp. Physiol. A.*, **184**, 169-183.
- Phelan, P. L. (1997). Evolution of mate-signaling in moths: Phylogenetic considerations and predictions from the

- asymmetric tracking hypothesis. In *Mating Systems in Insects and Arachnids* (J. C. Choe & B. J. Crespi, eds.). Cambridge University Press; Cambridge, pp. 240-256.
- Polhemus, J. T. (1992). Stridulatory mechanisms in aquatic and semi-aquatic Heteroptera. *J. N. Y. Entomol. Soc.*, **102**.
- Pollack, G. S. & Imaizumi, K. (1999). Neural analysis of sound frequency in insects. *Bioessays*, **21**, 295-303.
- Pollack, G. S. (1998). Neural processing of acoustic signals. In *Comparative Hearing: Insects*. (R. R. Hoy, A. N. Popper and R. R. Fay, eds.). Springer; New York, pp. 139-196.
- Pollack, G. (2000). Who, what, where? Recognition and localization of acoustic signals by insects. *Curr. Opin. Neurobiol.*, **10**, 763-767.
- Pollack, G. S. & El-Feghaly, E. (1993). Calling song recognition in the cricket *Teleogryllus oceanicus*: comparison of the effects of stimulus intensity and sound spectrum on selectivity for temporal pattern. *J. Comp. Physiol. A.*, **171**, 759-765.
- Pollack, G. S. (1988). Selective attention in an insect auditory neuron. *J. Neurosci.*, **8**, 2635-2639.
- Pollack, G. S., Givois, V. & Balakrishnan, R. (1998). Air-movement "signals" are not required for female mounting during courtship in the cricket *Teleogryllus oceanicus*. *J. Comp. Physiol. A.*, **183**, 513-518.
- Popov, A. V., Savvateeva-Popova, E. V., Shehekanov, E. E. & Riederer, P. (2001). The effects of age on courtship sound production in fruit flies *Drosophila melanogaster*. *Sensornye Sistemy*, **15**, 167-176.
- Popov, A. V. (1998). Sibling species of the singing cicadas *Cicadette prasina* (Pall.) and *C. pellosoma* (Uhler)(Homoptera, Cicadidae). *Entomol. Rev.*, **78**, 309-318.
- Popov, A. V., Savvateeva-Popova, E. V. & Kamyshev, N. G. (2000). Peculiarities of acoustic communication in fruit flies *Drosophila melanogaster*. *Sensornye Sistemy*, **14**, 60-74.
- Portilla, N., Coro, F., Otazo, A., Perez, M. & Alonso, N. (1987). Mating behavior and auditory information flow in an arctiid moth. *Naturwissenschaften*, **74**, 503-505.
- Poulet, J. & Hedwig, B. (2001). The impact of stridulation on sound processing in the cricket (*G. bimaculatus*). *Zoology* (Jena), **Suppl. 3**, 21.
- Poulet, J. F. & Hedwig, B. (2001). Tympanic membrane oscillations and auditory receptor activity in the stridulating cricket *Gryllus bimaculatus*. *J. Exp. Biol.*, **204**, 1281-1293.
- Prestwich, K. N. (1995). Is the energetics of calling in an acoustic free field similar to that measured in a metabolic chamber? *Am. Zool.*, **35**, 142A.
- Prestwich, K. N. (1994). The energetics of acoustic signalling in anurans and insects. *Am. Zool.*, **34**, 625-643.
- Prestwich, K. N., Lenihan, K. M. & Martin, D. M. (2000). The control of carrier frequency in cricket calls: a refutation of the subalar-tegmental resonance/auditory feedback model. *J. Exp. Biol.*, **302**, 585-596.
- Priano, M., Pavan, G., Mori, A., Grasso, D., Le Moli, F., Giovannotti, M. & Fanfani, A. (1997). Stridulation in four ant species of the genus *Messor*: ultrasonic emission and description of their stridulatory apparatus (Hymenoptera, Formicidae). *Bioacoustics*, **8**, 265.
- Priano, M., Pavan, G., de Carli, P., Lachaud, J.-P., Fanfani, A. & Giovannotti, M. (1996). Ultrasonic emission in two genera of neotropical ants (Hymenoptera, Formicidae, Ponerinae). *Bioacoustics*, **6**, 319-320.
- Prosser, M. R., Murray, A. M. & Cade, W. H. (1997). The influence of female age on phonotaxis during single and multiple song presentations in the field cricket, *Gryllus integer* (Orthoptera, Gryllidae). *J. Insect Behav.*, **10**, 437-449.
- Pugh, A. R. G. & Ritchie, M. G. (1996). Polygenic control of a mating signal in *Drosophila*. *Heredity*, **77**, 378-382.
- Pye, D. (1997). The emergence of animal ultrasound. *Bioacoustics*, **7**, 235-240.
- Quartau, J. A., Rebelo, M. T., Simoes, P. C., Fernandes, T. M., Claridge, M. F., Drosopoulos, S. & Morgan, J. C. (1999). Acoustic signals of populations of *Cicada orni* L. in Portugal and Greece (Hemiptera: Auchenorrhyncha: Cicadomorpha: Cicadidae). *Reichenbachia*, **33**, 71-80.
- Quartau, J. A., Seabra, S. & Sanborn, A. (2000). Effect of ambient air temperature on the calling song of *Cicada orni* Linnaeus, 1758 (Hemiptera: Cicadidae) in Portugal. *Acta Zool. Cracov.*, **43**, 193-198.
- Ragge, D. R. & Reynolds, W. J. (1998). *The Songs of the Grasshoppers and Crickets of Western Europe*. Harley Books; Colchester.
- Ragge, D. R. (1986). The songs of the western European grasshoppers of the genus *Omocestus* in relation to their taxonomy (Orthoptera: Acrididae). *Bull. Brit. Mus. (Nat. Hist.)*, **53**, 213-249.
- Ralf, H., Wenzel, B. & Elsner, N. (2001). Pharmacological brain stimulation releases elaborate stridulatory behavior in gomphocerine grasshoppers - conclusions for the organization of the nervous control. *J. Comp. Physiol. A.*, **187**, 155-169.
- Ramsauer, N. & Robert, D. (2000). Free-flight phonotaxis in a parasitoid fly: behavioural thresholds, relative attraction and susceptibility to noise. *Naturwissenschaften*, **87**, 315-319.
- Reinhold, K., Greenfield, M. D., Jang, Y. & Broce, A. (1998). Energetic cost of sexual attractiveness: ultrasonic advertisement in wax moths. *Anim. Behav.*, **55**, 905-913.
- Renou, M., Miklas, N., Cokl, A. & Doberlet, M. V. (2001). Courtship behavior in *Nezara viridula* (Heteroptera,

- Pentatomidae): A matter of songs and pheromones. *Adv. Ethol.*, **36**, 248-249.
- Rheinlaender, J., Hardt, M. & Robinson, D. J. (1986). The directional sensitivity of a bush cricket ear: A behavioural and neurophysiological study of *Leptophyes punctatissima*. *Physiol. Entomol.*, **11**, 309-316.
- Ribaric, D. & Gogala, M. (1996). Acoustic behaviour of some butterfly species of the genus *Erebia* (Lepidoptera: Satyridae). *Acta Entomologica Slovenica*, **4**, 5-12.
- Riede, K. (1993). Bioacoustics of calling communities from a Malaysian lowland rainforest. *Verh. Deutsch. Zool. Ges.*, **86**, 269 (German).
- Riede, K. (1997). Bioacoustic monitoring of insect communities in a Bornean rainforest canopy. In *Canopy Arthropods* (N. E. Stork, J. Adis & R. K. Didham, eds.). Chapman & Hall; London, pp. 442-452.
- Riede, K. (1997). Bioacoustic diversity and resource partitioning in tropical calling communities. In *Tropical Biodiversity and Systematics* (H. Ulrich, ed.). Zoologisches Forschungsinstitut und Museum Alexander Koenig; Bonn, pp. 275-280.
- Riede, K. (1996). Diversity of sound-producing insects in a Bornean lowland rain forest. In *Tropical Rainforest Research - Current Issues* (D. S. Edwards & W. E. Booth, eds.). Kluwer Academic Publishers; Dordrecht, pp. 77-84.
- Riede, K. (1997). Bioacoustic comparison of three tropical cricket communities. *Metalepta*, **17**(2), 9.
- Riede, K. & Kroker, A. (1995). Bioacoustics and niche differentiation in two cicada species from Bornean lowland forest. *Zool. Anz.*, **234**, 43-51.
- Riede, K. (1993). Monitoring biodiversity: analysis of Amazonian rainforest sounds. *Ambio*, **22**, 546-548.
- Riley, J. R. (1994). Acoustic sounding, atmospheric structure and insects. *Int. J. Remote Sensing*, **15**, 293-297.
- Ritchie, M. G. & Kyriacou, C. P. (1994). Genetic variability of courtship song in a population of *Drosophila melanogaster*. *Anim. Behav.*, **48**, 425-434.
- Ritchie, M. G., Yate, V. & Kyriacou, C. P. (1994). Genetic variability of the interpulse interval of courtship song among some European populations of *Drosophila melanogaster*. *Heredity*, **72**, 459-464.
- Ritchie, M. G. (2000). The inheritance of female preference functions in a mate recognition system. *Proc. Roy. Soc. Lond. B.*, **267**, 327-332.
- Ritchie, M. G. & Kyriacou, C. P. (1996). Artificial selection for a courtship signal in *Drosophila melanogaster*. *Anim. Behav.*, **52**, 603-611.
- Ritchie, M. G. & Gleason, J. M. (1995). Rapid evolution of courtship song in *Drosophila willistoni* sibling species. *J. Evol. Biol.*, **8**, 463-479.
- Ritchie, M. G., Racey, S. N., Gleason, J. M. & Wolff, K. (1997). Variability of the bushcricket *Ephippiger ephippiger*: RAPDs and song races. *Heredity*, **79**, 286-294.
- Ritchie, M. G., Saarikettu, M., Livingstone, S. & Hoikkala, A. (2001). Characterization of female preference functions for *Drosophila montana* courtship song and a test of the temperature coupling hypothesis. *Evolution*, **55**, 721-727.
- Ritchie, M. G., Halsey, E. J. & Gleason, J. M. (1999). *Drosophila* song as a species-specific mating signal and the behavioural importance of Kyriacou & Hall cycles in *D. melanogaster* song. *Anim. Behav.*, **58**, 649-657.
- Ritchie, M. G., Townhill, R. M. & Hoikkala, A. (1998). Female preference for fly song: playback experiments confirm the targets of sexual selection. *Anim. Behav.*, **56**, 713-717.
- Ritchie, M. G., Sunter, D. & Hockham, L. R. (1998). Behavioral components of sex role reversal in the tettigoniid bushcricket *Ephippiger ephippiger*. *J. Insect Behav.*, **11**, 481-491.
- Ritchie, M. G. (1995). Evolutionary influences on the receiver system in insect bioacoustics; coevolution and sexual selection. *Bioacoustics*, **6**, 216.
- Ritchie, M. G., Couzin, I. D. & Snedden, W. A. (1995). What's in a song? Female bushcrickets discriminate against the song of older males. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **262**, 21-27.
- Robert, D., Amoroso, J. & Hoy, R. R. (1992). The evolutionary convergence of hearing in a parasitoid fly and its cricket host. *Science*, **258**, 1135-1137.
- Robert, D., Miles, R. N. & Hoy, R. R. (1999). Tympanal hearing in the sarcophagid parasitoid fly *Emblemasoma* sp.: The biomechanics of directional hearing. *J. Exp. Biol.*, **202**, 1865-1876.
- Robert, D., Miles, R. N. & Hoy, R. R. (1998). Tympanal mechanics in the parasitoid fly *Ormia ochracea*: intertympanal coupling during mechanical vibration. *J. Comp. Physiol. A.*, **183**, 443-452.
- Robert, D. & Hoy, R. R. (1994). Overhearing cricket love songs. *Natural History*, **103**, 49-51.
- Robert, D. & Hoy, R. R. (1995). Directional hearing in insects: an evolutionary and mechanistic analysis. *Bioacoustics*, **6**, 215.
- Robinson, D. (1990). Acoustic communication between the sexes in bushcrickets. In *The Tettigoniidae: Biology, Systematics and Evolution* (W. J. Bailey & D. C. F. Rentz, eds.). Crawford House Press; Bathurst, New South Wales, pp. 112-129.
- Roces, F., Tautz, J. & Hoelldobler, B. (1993). Stridulation in leaf-cutting ants. Short-range recruitment through

- plant-borne vibrations. *Naturwissenschaften*, **80**, 521-524.
- Roces, F. & Hoelldobler, B. (1995). Vibrational communication between hitchhikers and foragers in leaf-cutting ants (*Atta cephalotes*). *Behav. Ecol. Sociobiol.*, **37**, 297-302.
- Roces, F. & Hoelldobler, B. (1996). Use of stridulation in foraging leaf-cutting ants: mechanical support during cutting or short-range recruitment signal? *Behav. Ecol. Sociobiol.*, **39**, 293-299.
- Roces, F. & Manrique, G. (1996). Different stridulatory vibrations during sexual behaviour and disturbance in the blood-sucking bug *Triatoma infestans* (Hemiptera: Reduviidae). *J. Insect Physiol.*, **42**, 231-238.
- Rodriguez, M. A. & Angulo, A. O. (2000). Stridulatory apparatus and bioacoustic model of call song of two species of Gryllidae from Chile (Orthoptera: Ensifera: Tettigoniidae: Gryllidae). *Gayana*, **64**, 47-60.
- Roemer, H. & Krusch, M. (2000). A gain-control mechanism for processing of chorus sounds in the afferent auditory pathway of the bushcricket *Tettigonia viridissima* (Orthoptera: Tettigoniidae). *J. Comp. Physiol. A.*, **186**, 181-191.
- Roemer, H. & van Staaden, M. J. (1997). Constraints on acoustic communication in insects. *Adv. Ethol.*, **32**, 28.
- Roemer, H., Marquart, V. & Hardt, M. (1988). Organization of a sensory neuropile in the auditory pathway of two groups of orthopterans. *J. Comp. Neurol.*, **275**, 201-215.
- Roemer, H. (1993). Environmental and biological constraints for the evolution of long-range signalling and hearing in acoustic insects. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 179-185.
- Roemer, H. (1991). Ecological constraints for the evolution of hearing and sound communication in insects. In *The Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag; Berlin, pp. 79-94.
- Roemer, H., Spickermann, M. & Bailey, W. (1998). Sensory basis for sound intensity discrimination in the bushcricket *Requena verticalis* (Tettigoniidae, Orthoptera). *J. Comp. Physiol. A.*, **182**, 595-607.
- Roemer, H., Hedwig, B. & Ott, S. (1997). Proximate mechanism of female preference for the leader male in synchronizing bushcrickets (*Mecopoda elongata*). In *Proceedings of the 25th Goettingen Neurobiology Conference*, Vol. II (N. Elsner & H. Waessle, eds), pp. 322.
- Roff, D. A., Mousseau, T. A. & Howard, D. J. (1999). Variation in genetic architecture of calling song among populations of *Allonemobius socius*, *A. fasciatus* and a hybrid population: Drift or selection? *Evolution*, **53**, 216-224.
- Ronacher, B., Krahe, R. & Hennig, R. M. (2000). Effects of signal duration on the recognition of masked communication in the grasshopper *Chorthippus biguttulus*. *J. Comp. Physiol. A.*, **186**, 1065-1072.
- Ronacher, B. & Krahe, R. (2000). Temporal integration vs. parallel processing: coping with the variability of neuronal messages in directional hearing of insects. *Eur. J. Neurosci.*, **12**, 2147-2156.
- Ronacher, B. & Stumpner, A. (1993). Parallel processing of song pattern and sound direction by ascending auditory interneurons in the grasshopper *Chorthippus biguttulus*. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 376.
- Ronacher, B. & Krahe, R. (1998). Song recognition in the grasshopper *Chorthippus biguttulus* is not impaired by shortening song signals: implications for neuronal encoding. *J. Comp. Physiol. A.*, **183**, 729-735.
- Ronacher, B., Stumpner, A., Sokoliuk, T. & Herrmann, B. (1993). Acoustic communication of grasshopper males after lesions in the thoracic connectives: correlation with the ascending projections of identified auditory neurons. *Zool. Jahrb. Abt. Allg. Zool. Physiol. Tiere*, **97**, 199-214.
- Rosslar, W. & Schul, J. (1993). Processing of complex song parameters by parallel neuronal activity within the auditory system of two closely related bushcricket species. *Zool. Jahrb. Abt. Allg. Zool. Physiol. Tiere*, **97**, 95-110.
- Rotenberry, J. T., Zuk, M., Simmons, L. W. & Hayes, C. (1996). Phonotactic parasitoids and cricket song structure: An evaluation of alternative hypotheses. *Evol. Ecol.*, **10**, 233-243.
- Rowell, G. A. & Cade, W. H. (1993). Simulation of alternative male reproductive behavior: calling and satellite behavior in field crickets. *Ecol. Modell.*, **65**, 265-280.
- Ryan, M. A. & Walter, G. H. (1992). Sound communication in *Nezara viridula* L. (Heteroptera, Pentatomidae): further evidence that signal transmission is substrate borne. *Experientia*, **48**, 1112-1115.
- Ryan, M. A., Cokl, A. & Walter, G. H. (1996). Differences in vibratory sound communication between a Slovenian and an Australian population of *Nezara viridula* (L.) (Heteroptera: Pentatomidae). *Behav. Processes*, **36**, 183-193.
- Rydell, J., Roininen, H. & Philip, K. W. (2000). Persistence of bat defence reactions in high Arctic moths (Lepidoptera). *Proc. Roy. Soc. Lond. B.*, **267**, 553-557.
- Rydell, J. (1998). Bat defence in lekking ghost swifts (*Hepialus humuli*), a moth without ultrasonic hearing. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 1373-1376.
- Rydell, J., Skals, N., Surlykke, A. & Svensson, M. (1997). Hearing and bat defence in geometrid winter moths. *Proc. R. Soc. Lond. B.*, **264**, 83-88.
- Rydell, J., Johes, G. & Waters, D. (1995). Echolocating bats and hearing moths: who are the winners? *Oikos*, **73**, 419-424.

- Ryder, J. J. & Siva-Jothy, M. T. (2000). Male calling song provides a reliable signal of immune function in a cricket. *Proc. Roy. Soc. Lond. B.*, **267**, 1171-1175.
- Ryder, J. J. & Siva-Jothy, M. T. (2001). Quantitative genetics of immune function and body size in the house cricket, *Acheta domesticus*. *J. Evol. Biol.*, **14**, 646-653.
- Sakaluk, S. K., Snedden, W. A., Jacobson, K. A. & Eggert, A.-K. (1995). Sexual competition in sagebrush crickets: must males hear calling rivals? *Behav. Ecol.*, **16**, 250-257.
- Sakaluk, S. K. & Snedden, W. A. (1990). Nightly calling durations of male sagebrush crickets (*Cyphoderris strepitans*): size, mating and seasonal effects. *Oikos*, **57**, 153-160.
- Sanborn, A. E. & Phillips, P. K. (1995). No acoustic benefit to subterranean calling in the cicada *Okanagana pallidula* Davis (Homoptera: Tibicinidae). *Great Basin Nat.*, **55**, 374-376.
- Sanborn, A. F. & Phillips, P. K. (1999). Analysis of acoustic signals produced by the cicada *Platypedia puthami* variety *lutea* (Homoptera: Tibicinidae). *Ann. Entomol. Soc. Am.*, **92**, 451-455.
- Sanborn, A. F. & Phillips, P. K. (2001). Re-evaluation of the *Diceroprocta delicata* (Homoptera: Cicadidae) species complex. *Ann. Entomol. Soc. Am.*, **94**, 159-165.
- Sanborn, A. F. & Phillips, P. K. (1995). Scaling of sound pressure level and body size in cicadas (Homoptera: Cicadidae; Tibicinidae). *Ann. Entomol. Soc. Am.*, **88**, 479-484.
- Sanborn, A. F. (1997). Body temperature and the acoustic behavior of the cicada *Tibicen winnemanna* (Homoptera: Cicadidae). *J. Insect Behav.*, **10**, 257-263.
- Sanborn, A. F. & Mate, S. (2000). Thermoregulation and the effect of body temperature on call temporal parameters in the cicada *Diceroprocta olympusa* (Homoptera: Cicadidae). *Comp. Biochem. Physiol. A.*, **125**, 141-148.
- Sanborn, F. (2001). Timbal muscle physiology in the endothermic cicada *Tibicen winnemanna* (Homoptera: Cicadidae). *Comp. Biochem. Physiol. A.*, **130**, 9-19.
- Sanderford, M. V. & Conner, W. E. (1995). Acoustic courtship communication in *Syntomeida epilais* Wik. (Lepidoptera: Arctiidae, Ctenuchinae). *J. Insect Behav.*, **8**, 19-32.
- Sanderford, M. V., Coro, F. & Conner, W. E. (1998). Courtship behavior in *Empyreuma affinis* Roths. (Lepidoptera, Arctiidae, Ctenuchinae): Acoustic signals and tympanic organ response. *Naturwissenschaften*, **85**, 82-87.
- Sanderford, M. V. (1992). *Acoustic Courtship Communication of the Polka-dot Wasp Moth, Syntomeida epilais Walker* (Lepidoptera, Arctiidae, Ctenuchinae). Ph.D. thesis. Wake Forest University; Winston-Salem, NC.
- Satokangas, P., Liimatainen, J. O. & Hoikkala, A. (1994). Songs produced by the females of the *Drosophila virilis* group of species. *Behav. Genet.*, **24**, 263-272.
- Sauer, A. E. & Stein, W. (1999). Sensorimotor pathways processing vibratory signals from the femoral chordotonal organ of the stick insect. *J. Comp. Physiol. A.*, **185**, 21-31.
- Savitskii, V. Yu. (2000). Acoustic signals, ecological features, and reproductive isolation of grasshoppers of the genus *Doclostaurus* (Orthoptera, Acrididae) in semidesert. *Zoologicheskii Zhurnal*, **79**, 1168-1184.
- Saxena, R. C., Zhang, Z. T. & Boncodin, M. E. M. (1993). Neem oil affects courtship signals and mating behaviour of brown planthopper *Nilaparvata lugens* Stal (Homoptera, Delphacidae) females. *J. Appl. Entomol.*, **116**, 127-132.
- Schaeffer, S. & Lakes-Harlan, R. (2001). Embryonic development of the central projection of auditory afferents (*Schistocerca gregaria*, Orthoptera, Insecta). *J. Neurobiol.*, **46**, 97-112.
- Scheffrahn, R. H., Robbins, W. P., Busey, P., Su, N.-Y. & Mueller, R. K. (1993). Evaluation of a novel, hand-held acoustic emissions detector to monitor termites (Isoptera: Kalotermitidae, Rhinotermitidae) in wood. *J. Econ. Entomol.*, **86**, 1720-1729.
- Schildberger, K., Huber, F. & Wohlers, D. W. (1989). Central auditory pathway: neuronal correlates of phonotactic behavior. In *Cricket Behavior and Neurobiology* (F. Huber, T. E. Moore & W. Loher, eds.). Cornell University Press.
- Schmitt, M. (1991). Stridulatory devices of leaf beetles (Chrysomelidae) and other Coleoptera. In *Advances in Coleopterology* (M. Zunino, X. Belles & M. Blas, eds.). Asociacion Europea de Coleopterologia; pp. 263-280.
- Schneider, S. S. (1987). The modulation of workers activity by the vibration dance of the honey bee, *Apis mellifera* (Hymenoptera: Apidae). *Ethology*, **74**, 211-218.
- Schneider, S. S., Stamps, J. A. & Gary, N. E. (1986). The vibration dance of the honey bee. I. Communication regulating foraging on two time scales. *Anim. Behav.*, **34**, 386-391.
- Schneider, S. S., Painter-Kurt, S. & Degrandi-Hoffman, G. (2001). The role of the vibration signal during queen competition in colonies of the honeybee, *Apis mellifera*. *Anim. Behav.*, **61**, 1173-1180.
- Schneider, S. S. (1991). Modulation of queen activity by the vibration dance in swarming colonies of the African honey bee, *Apis mellifera scutellata* (Hymenoptera: Apidae). *J. Kansas Entomol. Soc.*, **64**, 269-278.
- Schuetze, H. & Elsner, N. (2001). Stridulatory pattern generation in acridid grasshoppers: metathoracic

- interneurons in *Stenobothrus rubicundus* (Germar 1817). *J. Comp. Physiol. A.*, **187**, 529-540.
- Schul, J. (1999). Neuronal basis for spectral song discrimination in the bushcricket *Tettigonia cantans*. *J. Comp. Physiol. A.*, **184**, 457-461.
- Schul, J., Holderied, M., von Helversen, D. & von Helversen, O. (1999). Directional hearing in grasshoppers: Neurophysiological testing of a bioacoustic model. *J. Exp. Biol.*, **202**, 121-134.
- Schul, J., von Helversen, D. & Weber, T. (1998). Selective phonotaxis in *Tettigonia cantans* and *T. viridissima* in song recognition and discrimination. *J. Comp. Physiol. A.*, **182**, 687-694.
- Schul, J. (1997). Neuronal basis of phonotactic behaviour in *Tettigonia viridissima* hair: processing of behaviourally relevant signals by auditory afferents and thoracic interneurons. *J. Comp. Physiol. A.*, **180**, 573-583.
- Schul, J. (1998). Song recognition by temporal cues in a group of closely related bushcricket species (genus *Tettigonia*). *J. Comp. Physiol. A.*, **183**, 401-410.
- Schul, J. & Schulze, W. (2001). Phonotaxis during walking and flight: are differences in selectivity due to predation pressure? *Naturwissenschaften*, **88**, 438-442.
- Seeley, T. D. & Tautz, J. (2001). Worker piping in honey bee swarms and its role in preparing for liftoff. *J. Comp. Physiol. A.*, **187**, 667-676.
- Sergejeva, M. V. & Popov, A. V. (1994). Ontogeny of positive phonotaxis in female crickets, *Gryllus bimaculatus* De Geer: Dynamics of sensitivity, frequency-intensity domain, and selectivity to temporal pattern of the male calling song. *J. Comp. Physiol. A.*, **174**, 381-389.
- Sergejeva, M. V., Popov, A. V. & Shuvalov, V. F. (1993). Ontogeny of selectivity of positive phonotaxis in female crickets *Gryllus bimaculatus* to temporal parameters of the male calling song. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 319-327.
- Shade, R. E., Furgason, E. S. & Murdock, L. L. (1990). Detection of hidden insect infestations by feeding-generated ultrasonic signals. *Am. Entomol.*, **36**, 231-234.
- Shadley, J. R. & Hill, P. S. M. (2000). Talking back: Sending soil vibration signals to lekking prairie mole cricket males. *Am. Zool.*, **40**, 1207.
- Shaw, K. L. & Herlihy, D. P. (2000). Acoustic preference functions and song variability in the Hawaiian cricket *Laupala cerasina*. *Proc. Roy. Soc. Lond. B.*, **267**, 577-584.
- Shaw, K. L. (2000). Further acoustic diversity in Hawaiian forests: two new species of Hawaiian cricket (Orthoptera: Gryllidae: Trigonidiinae: *Laupala*). *Zool. J. Linn. Soc.*, **129**, 73-91.
- Shaw, K. C., Bitzer, R. J., Galliard, P. L., Troendle, M. A. & Shaffer, C. S. (1995). Effect of a strong, DC-induced magnetic field on circadian singing activity of the house cricket (Orthoptera: Gryllidae). *Ann. Am. Entomol. Soc.*, **88**, 362-365.
- Shaw, S. R. (1994). Re-evaluation of the absolute threshold and response mode of the most sensitive known "vibration" detector, the cockroach's subgenual organ: A cochlea-like displacement threshold and a direct response to sound. *J. Neurobiol.*, **25**, 1167-1185.
- Shaw, K. L. (1999). A nested analysis of song groups and species boundaries in the Hawaiian cricket genus *Laupala*. *Mol. Phylogen. Evol.*, **11**, 332-341.
- Shaw, K. L. & Parsons, Y. M. (2002). Divergence of mate recognition behavior and its consequences for genetic architectures of speciation. *Am. Natur.*, **159**, S61-S75.
- Shaw, K. L. (1993). *The evolution of song groups in the Hawaiian cricket genus Laupala*. Ph.D. dissertation. Washington University; St. Louis.
- Shaw, K. L. (1993). Rapid song evolution and an historical test of reproductive character displacement in a Hawaiian cricket. *Metalepta*, **14**(3), 22.
- Shaw, K. L. (1996). Polygenetic inheritance of a behavioral phenotype: Interspecific genetics of song in the Hawaiian cricket genus *Laupala*. *Evolution*, **50**, 256-266.
- Shchekanov, E. E. & Popov, A. V. (1993). Chlordimeform affects phonotaxis in crickets. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 336-344.
- Shelly, T. E. (2000). Male signalling and lek attractiveness in the Mediterranean fruit fly. *Anim. Behav.*, **60**, 245-251.
- Shen, J. & Xu, Z. (1995). An intracellular study on low-frequency acoustic signal processing in locust: Structure and function of the cercus-to-giant interneuron system. *Sci. China (Ser. B.)*, **38**, 1210-1221.
- Shen, J.-X. (1993). A peripheral mechanism for auditory directionality in the bushcricket *Gampsocleis gratiosa*: Acoustic tracheal system. *J. Acoust. Soc. Am.*, **94**, 1211-1217.
- Shi, F.-M., Yang, P.-L. & Jiang, S.-N. (2001). Studies on the songs and stridulatory organs of *Euconocephalus nasutus* (Thunberg) and *E. pallidus* (Redtenbacher). *Zool. Res.*, **22**, 115-119.
- Shuman, D., Coffelt, J. A., Vick, K. W. & Mankin, R. W. (1993). Quantitative acoustical detection of larvae feeding inside kernels of grain. *J. Econ. Entomol.*, **86**, 933-938.

- Sickmann, T., Kalmring, K. & Mueller, A. (1997). The auditory-vibratory system of the bushcricket *Polysarcus denticauda* (Phaneropterinae, Tettigoniidae). *Hear. Res.*, **104**, 155-166.
- Simmons, L. W., Zuk, M. & Rotenberry, J. T. (2001). Geographic variation in female preference functions and male songs of the field cricket *Teleogryllus oceanicus*. *Evolution*, **55**, 1386-1394.
- Simmons, L. W. & Bailey, W. J. (1993). Agonistic communication between males of a zaprochiline katydid (Orthoptera: Tettigoniidae). *Behav. Ecol.*, **4**, 364-368.
- Simmons, L. W. & Zuk, M. (1992). Variability in call structure and pairing success of male field crickets, *Gryllus bimaculatus*: the effects of age, size and parasite load. *Anim. Behav.*, **44**, 1145-1152.
- Simmons, L. W. & Ritchie, M. G. (1996). Symmetry in the songs of crickets. *Proc. R. Soc. Lond. B.*, **263**, 305-311.
- Simmons, L. W. (1995). Correlates of male quality in the field cricket, *Gryllus campestris* L.: age, size, and symmetry determine pairing success in field populations. *Behav. Ecol.*, **6**, 376-381.
- Sismondo, E. (1990). Synchronous, alternating, and phase-locked stridulation by a tropical katydid. *Science*, **249**, 55-58.
- Sismondo, E. (1993). Ultrasubharmonic resonance and nonlinear dynamics in the song of *Oecanthus nigricornis* F. Walker (Orthoptera, Gryllidae). *Int. J. Insect Morphol. Embryol.*, **22**, 217-231.
- Skals, N. & Surlykke, A. (1999). Sound production by abdominal tymbal organs in two moth species: The green silver-line and the scarce silver-line (Noctuoidea: Nolidae: Chloephorinae). *J. Exp. Biol.*, **202**, 2937-2950.
- Skals, N., Surlykke, A. & Soerensen, A. (1997). Sound production with an abdominal tymbal organ in a noctuid moth *Pseudoips fagana*. *Bioacoustics*, **8**, 263.
- Snedden, W. A. & Irazuzta, S. (1994). Attraction of female sagebrush crickets to male song: the importance of field bioassays. *J. Insect Behav.*, **7**, 233-236.
- Snedden, W. A., Tosh, C. R. & Ritchie, M. G. (1994). The ultrasonic mating signal of the male lesser wax moth. *Physiol. Entomol.*, **19**, 367-372.
- Snedden, W. A. & Greenfield, M. D. (1998). Females prefer leading males: relative call timing and sexual selection in katydid choruses. *Anim. Behav.*, **56**, 1091-1098.
- Snedden, W. A., Greenfield, M. D. & Jang, Y. (1998). Mechanisms of selective attention in grasshopper choruses: who listens to whom? *Behav. Ecol. Sociobiol.*, **43**, 59-66.
- Sobel, E. C. & Tank, D. W. (1994). In vivo Ca²⁺ dynamics in a cricket auditory neuron: an example of chemical computation. *Science*, **263**, 823-826.
- Souza, N. A. de, Ward, R. D., Hamilton, J. G. C., Kyriacou, C. P. & Peixoto, A. A. (2002). Copulation songs in three siblings of *Lutzomyia longipalpis* (Diptera: Psychodidae). *Trans. Roy. Soc. Trop. Medic. Hygiene*, **96**, 102-103.
- Spangler, H. G. (1991). Do honey bees encode distance information into the wing vibrations of the waggle dance? *J. Insect Behav.*, **4**, 15-20.
- Spangler, H. G. & Takessian, A. (1986). Further observations on sound production by the lesser wax moth, *Achroia grisella* (F.) (Lepidoptera: Pyralidae). *J. Kansas Ent. Soc.*, **59**, 555-557.
- Stein, W. & Sauer, A. E. (1999). Physiology of vibration sensitive afferents in the femoral chordotonal organ of the stick insect. *J. Comp. Physiol. A.*, **184**, 253-263.
- Stephen, R. O. & Hartley, J. C. (1995). Control of call carrier frequency in the bush cricket *Ruspolia nitidula*. *Bioacoustics*, **6**, 163-170.
- Stewart, K. W. (1997). Vibrational communication in insects: epitome in the language of stoneflies? *Amer. Ent.*, **43**, 81-91.
- Stiedl, O. (1991). Acousto-vibratory behaviour studies on Ephemeropterine grasshoppers in laboratory and biotop. Ph.D. thesis. University of Marburg (German).
- Stiedl, O., Hoffmann, E. & Kalmring, K. (1994). Chirp rate variability in male song of *Ephippigerida taeniata* (Orthoptera: Ensifera). *J. Insect Behav.*, **7**, 171-182.
- Stokes, D. R. & Josephson, R. K. (1999). Power and control muscle of cicada song. *Am. Zool.*, **39**, 72A-73A.
- Stout, J., Carlson, N., Bingol, H., Ramseier, J., Bronsert, M. & Atkins, G. (1997). The L3 neuron and an associated prothoracic network are involved in calling song recognition by female crickets. *Invertebrate Neurosci.*, **3**, 145-153.
- Stout, J., Hao, J., Coburn, P., Standish, T., Heinrich, C. & Atkins, G. (1998). Correlation of nicotinic receptor-like-mRNA expression with excitatory input into the behaviorally important L1 and L3 auditory interneurons of the cricket, *Acheta domesticus*. *J. Exp. Zool.*, **281**, 109-123.
- Stout, J., Hao, J., Kim, P., Mbungu, D., Bronsert, M., Slikkers, S., Maier, J., Kim, D., Bacchus, K. & Atkins, G. (1998). Regulation of the phonotactic threshold of the female cricket, *Acheta domesticus* hair: juvenile hormone III, allatectomy, L1 auditory neuron thresholds and environmental factors. *J. Comp. Physiol. A.*, **182**, 635-645.
- Stritih, N., Virant-Doberlet, M. & Cokl, A. (2000). Green stink bug *Nezara viridula* detects differences in

- amplitude between courtship song vibrations at stem and petiolus. *Pfluegers Archiv: Eur. J. Physiol.*, **439**, Suppl., R190-R192.
- Stumpner, A. (1999). Comparison of morphology and physiology of two plurisegmental sound-activated interneurons in a bushcricket. *J. Comp. Physiol. A.*, **185**, 199-205.
- Stumpner, A. (1996). Tonotopic organization of the hearing organ in a bushcricket. Physiological characterization and complete staining of auditory receptor cells. *Naturwissenschaften*, **83**, 81-84.
- Stumpner, A. (2002). A species-specific frequency filter through specific inhibition, not specific excitation. *J. Comp. Physiol. A.*, **188**, 239-248.
- Stumpner, A. & von Helversen, D. (2001). Evolution and function of auditory systems in insects. *Naturwissenschaften*, **88**, 159-170.
- Stumpner, A. & Meyer, S. (2001). Songs and the function of song elements in four duetting bushcricket species (Ensifera, Phaneropteridae, *Barbitistes*). *J. Insect Behav.*, **14**, 511-534.
- Stumpner, A. & Meyer, S. (2001). Songs and their neuronal processing in some bushcrickets. *Zoology (Jena)*, **103**, Suppl. 3, 22.
- Stumpner, A. (1999). An interneurone of unusual morphology is tuned to the female song frequency in the bushcricket *Ancistrura nigrovittata* (Orthoptera, Phaneropteridae). *J. Exp. Biol.*, **202**, 2071-2082.
- Stumpner, A. & von Helversen, O. (1994). Song production and song recognition in a group of sibling grasshopper species (*Chorthippus dorsatus*, *Ch. dichrous* and *Ch. loratus*: Orthoptera, Acrididae). *Bioacoustics*, **6**, 1-23.
- Stumpner, A. (1988). Auditory thoracic interneurons in *Chorthippus biguttulus* L.: Morphological and physiological characterization and description of their filter traits for behaviourally relevant sound playbacks. Thesis. University Erlangen (German).
- Stumpner, A. & Heller, K.-G. (1992). Morphological and physiological differences of the auditory system in three related bushcrickets (Orthoptera: Phaneropteridae, *Poecilimon*). *Physiol. Entomol.*, **17**, 73-80.
- Stumpner, A. & Lakes-Harlan, R. (1996). Auditory interneurons in a hearing fly (*Therobia leonidei*, Ormiini, Tachinidae, Diptera). *J. Comp. Physiol. A.*, **178**, 227-233.
- Stumpner, A., Atkins, G. & Stout, J. F. (1995). Processing of unilateral and bilateral auditory inputs by the ON1 and L1 interneurons of the cricket *Acheta domesticus* and comparison to other cricket species. *J. Comp. Physiol. A.*, **177**, 379-388.
- Staadén, M. J. van & Roemer, H. (1997). Acoustic behaviour and the genetic structure of bladder grasshopper populations. *Adv. Ethol.*, **32**, 279.
- Staadén, M. van & Roemer, H. (1998). Sexual signalling in bladder grasshoppers: Tactical design for maximal calling range. *J. Exp. Biol.*, **200**, 2597-2608.
- Staadén, M. J. van & Huber, R. (2001). Multidisciplinary dissection of behavioral arousal: The role of muscarinic acetylcholine stimulation in grasshopper stridulatory behavior. *Proc. Natl. Acad. Sci. USA*, **98**, 9468-9470.
- Sueur, J. & Puissant, S. (2000). Sound production of a French population of the cicada *Cicadivetta tibialis* (Panzer, 1798) (Hemiptera: Cicadoidea: Cicadidae). *Ann. Soc. Entomol. France*, **36**, 261-268.
- Sueur, J. & Aubin, T. (2002). Acoustic communication in the Palearctic red cicada, *Tibicina haematodes*: Chorus organisation, calling-song structure, and signal recognition. *Can. J. Zool.*, **80**, 126-136.
- Sueur, J. (2002). Cicada acoustic communication: Potential sound partitioning in a multispecies community from Mexico (Hemiptera: Cicadomorpha: Cicadidae). *Biol. J. Linn. Soc.*, **75**, 379-394.
- Surlykke, A., Filskov, M., Fullard, J. H. & Forrest, E. (1999). Auditory relationships to size in noctuid moths: Bigger is better. *Naturwissenschaften*, **86**, 238-241.
- Surlykke, A. & Treat, A. E. (1995). Hearing in wintermoths. *Naturwissenschaften*, **82**, 382-384.
- Surlykke, A., Larsen, O. N. & Michelsen, A. (1988). Temporal coding in the auditory receptor of the moth ear. *J. Comp. Physiol. A.*, **162**, 367-374.
- Surlykke, A., Skals, N., Rydell, J. & Svensson, M. (1998). Sonic hearing in a diurnal geometrid moth, *Archiearis parthenias*, temporally isolated from bats. *Naturwissenschaften*, **85**, 36-37.
- Surlykke, A. & Filskov, M. (1997). Hearing in geometrid moths. *Naturwissenschaften*, **84**, 356-359.
- Suvanto, L., Liimatainen, J. O., Tregenza, T. & Hoikkala, A. (2000). Courtship signals and mate choice of the flies of inbred *Drosophila montana* strains. *J. Evol. Biol.*, **13**, 583-592.
- Suvanto, L., Hoikkala, A. & Liimatainen, J. O. (1994). Secondary courtship songs and inhibitory songs of *Drosophila virilis*-group males. *Behav. Genet.*, **24**, 85-94.
- Suvanto, L., Liimatainen, J. O. & Hoikkala, A. (1999). Variability and evolvability of male song characters in *Drosophila montana* populations. *Hereditas (Lund)*, **130**, 13-18.
- Tauber, E. & Eberl, D. F. (2001). Song production in auditory mutants of *Drosophila*: the role of sensory feedback. *J. Comp. Physiol. A.*, **187**, 341-348.
- Tauber, E., Cohan, D., Greenfield, M. D. & Pener, M. P. (2001). Duet singing and female choice in the bushcricket *Phaneroptera nana*. *Behaviour*, **138**, 411-430.

- Tauber, E. & Pener, M. P. (2000). Song recognition in female bushcrickets *Phaneroptera nana*. *J. Exp. Biol.*, **203**, 597-604.
- Tauber, E. & Eberl, D. F. (2002). The effect of male competition on the courtship song of *Drosophila melanogaster*. *J. Insect Behav.*, **15**, 109-120.
- Tauber, E. (2001). Bidirectional communication system in katydid: The effect on chorus structure. *Behav. Ecol.*, **12**, 308-312.
- Tautz, J., Roces, F. & Hoelldobler, B. (1995). Use of a sound-based vibratome by leaf-cutting ants. *Science*, **267**, 84-87.
- Thomson, G. (1991). A possible sound producing structure in *Maniola* butterflies (Lepidoptera, Nymphalidae). *Nota Lepidopterol.*, **14**, 171-178.
- Tishechkin, D. Yu. (1992). Acoustic signalization of *Paralimnini* leafhoppers (Homoptera, Cicadellidae, Deltocephalinae). *Entomol. Rev.*, **71**, 158-165.
- Tishechkin, D. Yu. (1998). Acoustic signals of Issidae (Homoptera, Cicadinea, Fulgoroidea) compared with signals of some other Fulgoroidea and notes on taxonomic status of the subfamily Caliscelinae. *Entomol. Rev.*, **78**, 884-892.
- Tishechkin, D. Yu. (1998). Acoustic signals and morphological characters of leafhoppers belonging to *Aphrodes bicinctus* group (Homoptera, Cicadellidae) from European Russia. *Entomol. Rev.*, **78**, 370-377.
- Tomaru, M. & Oguma, Y. (1994). Differences in courtship song in the species of the *Drosophila auraria* complex. *Anim. Behav.*, **47**, 133-140.
- Tomaru, M., Matsubayashi, H. & Oguma, Y. (1998). Effects of courtship song in interspecific crosses among the species of the *Drosophila auraria* complex (Diptera: Drosophilidae). *J. Insect Behav.*, **11**, 383-398.
- Tomaru, M. & Oguma, Y. (1994). Genetic basis and evolution of species-specific courtship song in the *Drosophila auraria* complex. *Genet. Res.*, **63**, 11-17.
- Tomaru, M., Matsubayashi, H. & Oguma, Y. (1995). Heterospecific inter-pulse intervals of courtship song elicit female rejection in *Drosophila biauraria*. *Anim. Behav.*, **50**, 905-914.
- Tomaru, M. & Oguma, Y. (2000). Mate choice in *Drosophila melanogaster* and *D. sechellia*: criteria and their variation depending on courtship song. *Anim. Behav.*, **60**, 797-804.
- Tomaru, M., Doi, M., Higuchi, H. & Oguma, Y. (2000). Courtship song recognition in the *Drosophila melanogaster* complex: heterospecific songs make females receptive in *D. melanogaster*, but not in *D. sechellia*. *Evolution*, **54**, 1286-1294.
- Toms, R. B., Ferguson, J. W. H. & Becker, S. (1993). Relationship between body temperature and air temperature in stridulating male crickets, *Gryllus bimaculatus* (Orthoptera: Gryllidae). *S. Afr. J. Zool.*, **28**, 71-73.
- Toms, R. B. (1993). Incidental effects and evolution of sound producing organs in tree crickets (Orthoptera, Oecanthidae). *Int. J. Insect Morphol. Embryol.*, **22**, 207-216.
- Tougaard, J. (1999). Detection of short pure-tone stimuli in the noctuid ear: what are temporal and integration time all about? *J. Comp. Physiol. A.*, **183**, 563-572.
- Tougaard, J. (1999). Receiver operating characteristics and temporal integration in an insect auditory receptor cell. *J. Acoust. Soc. Am.*, **106**, 3711-3718.
- Tougaard, J., Caseday, J. H. & Covey, E. (1998). Arctiid moths and bat echolocation: broad-band clicks interfere with neural responses to auditory stimuli in the nuclei of the lateral lemniscus of the big brown bat. *J. Comp. Physiol. A.*, **182**, 203-215.
- Tougaard, J. (1996). Energy detection and temporal integration in the noctuid A1 auditory receptor. *J. Comp. Physiol. A.*, **178**, 669-677.
- Towne, W. F. (1995). Frequency discrimination in the hearing of honey bees (Hymenoptera: Apidae). *J. Insect Behav.*, **8**, 281-286.
- Travassos, M. A. & Pierce, N. E. (2000). Acoustics, context and function of vibrational signalling in a lycaenid butterfly-ant mutualism. *Anim. Behav.*, **60**, 13-26.
- Tregenza, T., Pritchard, V. L. & Butlin, R. K. (2000). Patterns of trait divergence between populations of the meadow grasshopper, *Chorthippus parallelus*. *Evolution*, **54**, 574-585.
- Triblehorn, J. D. & Yager, D. D. (2001). Mantis auditory interneuron MR-501-T3 stops responding during the critical period just before capture by a flying bat. *Soc. Neurosci. Abstr.*, **27**, 1920.
- Triblehorn, J. D. & Yager, D. D. (2001). Broad versus narrow auditory tuning and corresponding bat-evasive flight behaviour in praying mantids. *J. Zool.*, **254**, 27-40.
- Triblehorn, J. D. & Yager, D. D. (2002). Implanted electrode recordings from a praying mantis auditory interneuron during flying bat attacks. *J. Exp. Biol.*, **205**, 307-320.
- Tschuch, G. (1993). Sound production in mutillid wasps (Mutillidae, Hymenoptera). *Bioacoustics*, **5**, 123-129.
- Tschuch, G. (1996). Analysis of signals from stridulatory organs without any resonance. *Bioacoustics*, **6**, 310.
- Tschuch, G. (1994). Stridulatory organs of Mutillid wasps (Hymenoptera). *Bioacoustics*, **6**, 71-72.
- Tschuch, G. & Brothers, D. J. (1999). Modeling vibration and sound production in insects with nonresonant

- stridulatory organs. *J. Acoust. Soc. Am.*, **106**, 3706-3710.
- Tuckerman, J. F., Gwynne, D. T. & Morris, G. K. (1993). Reliable acoustic cues for female mate preference in a katydid *Scudderia curvicauda* (Orthoptera, Tettigoniidae). *Behav. Ecol.*, **4**, 106-113.
- Vedenina, V. Yu, Rozhkova, G. I. & Byzov, A. L. (1993). Medial giant interneuron of the cricket nerve cord: directional sensitivity in adults and nymphs. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag; Basel, pp. 410-416.
- Vedenina, V. Yu. & Bukhvalova, M. A. (2001). Contributions to the study of acoustic signals of grasshoppers (Orthoptera: Acrididae: Gomphocerinae) from Russia and adjacent countries. 2. Calling songs of widespread species recorded in different localities. *Russ. Entomol. J.*, **10**, 93-123.
- Veech, J. A., Benedix Jr., J. H. & Howard, D. J. (1996). Lack of calling song displacement between two closely related ground crickets. *Evolution*, **50**, 1982-1989.
- Victorsson, J. & Wikars, L.-O. (1997). Sound production and cannibalism in larvae of the pine-sawyer beetle *Monochamus sutor* L. (Coleoptera: Cerambycidae). *Entomol. Tidsskr.*, **117**, 29-33.
- Viktorsson, J. & Wikars, L.-O. (1996). Sound production and cannibalism in larvae of the pine-sawyer beetle *Monochamus sutor* L. (Coleoptera: Cerambycidae). *Entomol. Tidsskr.* (Uppsala), **117**, 29-33.
- Virant-Doberlet, M., Cokl, A. & Stritih, N. (2000). Vibratory songs of hybrids from Brazilian and Slovenian populations of the green stink bug *Nezara viridula*. *Pfluegers Archiv: Eur. J. Physiol.*, **439**, Suppl., R196-R198.
- Visscher, P. K., Shepardson, J., McCart, L. & Camazine, S. (1999). Vibration signal modulates the behavior of house-hunting honey bees (*Apis mellifera*). *Ethology*, **105**, 759-769.
- Waeckers, F. L., Mitter, E. & Dorn, S. (1998). Vibrational sounding by the pupal parasitoid *Pimpla (Coccygomimus) turionellae*: an additional solution to the reliability-detectability problem. *Biol. Control*, **11**, 141-146.
- Wagner, Jr., W. E. & Reiser, M. G. (2000). The importance of calling song and courtship song in female mate choice in the variable field cricket. *Anim. Behav.*, **59**, 1219-1226.
- Wagner, Jr., W. E., Smeds, M. R. & Wiegmann, D. D. (2001). Experience affects female responses to male song in the variable field cricket *Gryllus lineaticeps* (Orthoptera, Gryllidae). *Ethology*, **107**, 769-776.
- Wagner, W. E., Jr. & Hoback, W. W. (1999). Nutritional effects on male calling behaviour in the variable field cricket. *Anim. Behav.*, **57**, 89-95.
- Wagner, W. E., Jr. (1996). Convergent song preferences between female field crickets and acoustically orienting parasitoid flies. *Behav. Ecol.*, **7**, 279-285.
- Wagner, W. E. Jr., Murray, A.-M. & Cade, W. H. (1995). Phenotypic variation in the mating preferences of female field crickets, *Gryllus integer*. *Anim. Behav.*, **49**, 1269-1281.
- Walker, T. J. (1998). Trilling field crickets in a zone of overlap (Orthoptera: Gryllidae: *Gryllus*). *Ann. Entomol. Soc. Am.*, **91**, 175-184.
- Walker, T. J. (1993). Phonotaxis in female *Ormia ochracea* (Diptera, Tachinidae): a parasitoid of field crickets. *J. Insect Behav.*, **6**, 389-410.
- Walker, T. J. (2000). Pulse rates in the songs of trilling field crickets (Orthoptera: Gryllidae: *Gryllus*). *Ann. Entomol. Soc. Am.*, **93**, 565-572.
- Ware, A. B. (1994). Factors eliciting stridulation by the ponerine ant *Strebiognathus aethiopicus* Smith (Hymenoptera: Formicidae). *Afr. Entomol.*, **2**, 31-36.
- Waters, D. A. & Jones, G. (1995). Echolocating bats and tympanate moths: interactions and perspectives. *Bioacoustics*, **6**, 217.
- Waters, D. A. & Jones, G. (1996). The peripheral auditory characteristics of noctuid moths. I. Responses to the search-phase echolocation calls of bats. *J. Exp. Biol.*, **199**, 847-856.
- Waters, D. A. (1996). The peripheral auditory characteristics of noctuid moths: information encoding and endogenous noise. *J. Exp. Biol.*, **199**, 857-868.
- Waters, D. A. & Jones, G. (1994). Wingbeat-generated ultrasound in noctuid moths increases the discharge rate of the bat-detecting A1 cell. *Proc. Roy. Soc. Lond.*, **258B**, 41-46.
- Waters, D. A. (1993). The auditory response of noctuid moths to the echolocation calls of bats. Ph.D. thesis. University of Bristol.
- Watson, A. H. D. & Mardt, M. (1996). Distribution of synapses on two local auditory interneurons, ON1 and ON2, in the prothoracic ganglion of the cricket: relations with GABA-immunoreactive neurones. *Cell Tiss. Res.*, **283**, 231-246.
- Webb, B. (1996). A cricket robot. *Sci. Am.*, **Dec.**, 62-67.
- Webb, B. (1995). Using robots to model animals: A cricket test. *Robotics and Autonomous Systems*, **16**, 117-132.
- Webb, B. & Scutt, T. (2000). A simple latency-dependent spiking neuron model of cricket phonotaxis. *Biol. Cybern.*, **82**, 247-269.
- Webb, B. (1998). Robots, crickets and ants: models of neural control of chemotaxis and phonotaxis. *Neural Networks*, **11**, 1479-1496.

- Weber, T., Moore, T. E., Huber, F. & Klein, U. (1987). Sound production in periodical cicadas (Homoptera: Cicadidae: *Magicicada septendecim*, *M. cassini*). In *Proc. 6th Auchen Meeting, Turin, Italy, 7-11 Sept. 1987*, pp. 329-336.
- Weber, T. & Thorson, J. (1989). Phonotactic behavior of walking crickets. In *Cricket Behavior and Neurobiology* (F. Huber, T. E. Moore & W. Loher, eds.). Cornell University Press; Ithaca, N. Y., pp. 310-339.
- Weber, T. (1993). Allatectomized females of *Gryllus bimaculatus* and *Acheta domesticus* develop and maintain phonotaxis. In *Advances in Life Sciences: Sensory Systems of Arthropods* (K. Wiese et al., eds). Birkhaeuser Verlag, Basel, pp. 355-362.
- Welbergen, P. & Lankinen, P. (1991). A practical device for sound recording of *Drosophila*. *Drosophila Inform. Serv.*, **70**, 263-264.
- Wells, M. M. (1993). Laboratory hybridization in green lacewings (Neuroptera: Chrysopidae: *Chrysoperla*): Evidence for genetic incompatibility. *Can. J. Zool.*, **71**, 233-237.
- Wenzel, B., Elsner, N. & Hedwig, B. (1998). Microinjection of neuroactive substances into brain neuropil controls stridulation in the cricket *Gryllus bimaculatus* (de Geer). *Naturwissenschaften*, **85**, 452-454.
- Wenzel, B. & Hedwig, B. (1999). Neurochemical control of cricket stridulation revealed by pharmacological microinjections into the brain. *J. Exp. Biol.*, **202**, 2203-2216.
- White, P. R., Birch, M. C., Church, S., Jay, C., Rowe, E. & Keenlyside, J. J. (1993). Intraspecific variability in the tapping behavior of the deathwatch beetle, *Xestobium rufovillosum* (Coleoptera: Anobiidae). *J. Insect Behav.*, **6**, 549-562.
- Wiegmann, D. D. (1999). Search behaviour and mate choice by female field crickets, *Gryllus integer*. *Anim. Behav.*, **58**, 1293-1298.
- Wilcox, R. S. & Distephano, J. D. (1991). Vibratory signals enhance mate guarding in a water strider (Hemiptera: Gerridae). *J. Insect Behav.*, **4**, 43-50.
- Williams, M. A., Blouin A. G. & Noor, M. A. (2001). Courtship songs of *Drosophila pseudoobscura* and *D. persimilis*. II. Genetics of species differences. *Heredity*, **86**, 68-77.
- Wilson, L. M., Henry, C. S., Johnson, J. B. & McCaffrey, J. P. (1993). Sound production in *Phrydiuchus tau* (Coleoptera, Curculionidae). *Ann. Entomol. Soc. Am.*, **86**, 621-630.
- Winter, A. J. de (1995). Genetic control and evolution of acoustic signals in planthoppers (Homoptera: Delphacidae). *Res. Popul. Ecol.*, **37**, 99-104.
- Winter, A. J. de & Rollenhagen, T. (1993). Differences in preference for species-specific female calls between acoustically experienced and acoustically naive male *Ribautodelphax* planthoppers (Homoptera, Delphacidae). *J. Insect Behav.*, **6**, 411-419.
- Wolda, H. (1993). Diel and seasonal patterns of mating calls in some neotropical cicadas: acoustic interference. *Proc. Koninklijke Nederl. Akad. Wet., Biol. Chem. Geol. Phys. Med. Sci.*, **96**, 369-381.
- Wolf, H. & von Helversen, O. (1986). Switching off of an auditory interneuron during stridulation in the acridid grasshopper *Chorthippus biguttulus* L. *J. Comp. Physiol. A*, **158**, 861-871.
- Wyk, J. W. van & Ferguson, W. H. (1995). Communicatory constraints on field crickets *Gryllus bimaculatus* calling at low ambient temperatures. *J. Insect Physiol.*, **41**, 837-841.
- Wytenbach, R. A., May, M. L. & Hoy, R. R. (1996). Categorical perception of sound frequency by crickets. *Science*, **273**, 1542-1544.
- Wytenbach, R. A. & Hoy, R. R. (1993). Demonstration of the precedence effect in an insect. *J. Acoust. Soc. Am.*, **94**, 777-784.
- Wytenbach, R. A. & Hoy, R. R. (1999). Categorical perception of behaviorally relevant stimuli by crickets. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 559-576.
- Yack, J. E. & Fullard, J. H. (2000). Ultrasonic hearing in nocturnal butterflies. *Nature*, **403**, 265-266.
- Yack, J. E., Otero, L. D., Dawson, J. W., Surlykke, A. & Fullard, J. H. (2000). Sound production and hearing in the blue cracker butterfly, *Hamadryas feronia* (Lepidoptera, Nymphalidae) from Venezuela. *J. Exp. Biol.*, **203**, 3689-3702.
- Yager, D. D. & Scaffidi, D. J. (1993). Cockroach homolog of the mantis tympanal nerve. *Soc. Neurosci. Abstr.*, **19**, 340.
- Yager, D. D. (1996). Nymphal development of the auditory system in the praying mantis *Hierodula membranacea* Burmeister (Dictyoptera, Mantidae). *J. Comp. Neurol.*, **364**, 199-210.
- Yager, D. D., Cook, A. P., Pearson, D. L. & Spangler, H. G. (2000). A comparative study of ultrasound-triggered behaviour in tiger beetles (Cicindelidae). *J. Zool.*, **251**, 355-368.
- Yager, D. D. (1999). Structure, development, and evolution of insect auditory systems. *Microscopy Research and Technique*, **47**, 380-400.
- Yager, D. D. (1990). Sexual dimorphism of auditory function and structure in praying mantises (Mantodea; Dictyoptera). *J. Zool.*, **221**, 517-537.

- Yager, D. D. & Spangler, H. G. (1995). Characterization of auditory afferents in the tiger beetle *Cicindela marutha* Dow. *J. Comp. Physiol., A.*, **176**, 587-599.
- Yager, D. D. & Hoy, R. R. (1987). The midline metathoracic ear of the praying mantis, *Mantis religiosa*. *Cell Tissue Res.*, **250**, 531-541.
- Yager, D. D. (1995). Of praying mantises, tiger beetles and the evolution of ultrasound-triggered defensive behaviors. *Am. Zool.*, **35**, 41A.
- Yager, D. D. (1996). Serially homologous ears perform frequency range fractionation in the praying mantis, *Creobroter* (Mantodea, Hymenopodidae). *J. Comp. Physiol. A.*, **178**, 463-475.
- Yager, D. D. & Hoy, R. R. (1986). The cyclopien ear: a new sense for the praying mantis. *Science*, **231**, 727-729.
- Yager, D. D., & Tola, K. C. (1994). Transection of the mantis tympanal nerve homolog in the cockroach alters resting posture, escape turning, and responses to substrate vibration. *Am. Zool.*, **34**, 469.
- Yamada, H., Tomaru, M. & Oguma, Y. (2000). An influence of female fluttering for wing vibration of heterospecific male courtship in sexual isolation between *Drosophila ananassae* and *D. pallidosa*. *Genes & Genet. Syst.*, **75**, 369.
- Yasuda, K. & Tokuzato, M. (1999). Sound production during mating and disturbance in the West Indian sweet potato weevil, *Euscepes postfasciatus* (Fairmaire)(Coleoptera: Curculionidae). *Appl. Entomol. Zool.*, **34**, 443-448.
- Yokokura, T., Ueda, R. & Yamamoto, D. (1995). Phenotypic and molecular characterization of croaker, a new mating behavior mutant of *Drosophila melanogaster*. *Jap. J. Genet.*, **70**, 103-117.
- Young, D. & Bennet-Clark, H. C. (1995). The role of the tymbal in cicada sound production. *J. Exp. Biol.*, **198**, 1001-1019.
- Ziegler, D. D. & Stewart, K. W. (1986). Female response thresholds of two stonefly (Plecoptera) species to computer simulated and modified male drumming calls. *Anim. Behav.*, **34**, 929-931.
- Zuk, M., Simmons, L. W. & Cupp, L. (1993). Calling characteristics of parasitized and unparasitized populations of the field cricket *Teleogryllus oceanicus*. *Behav. Ecol. Sociobiol.*, **33**, 339-343.
- Zuk, M., Rotenberry, J. T. & Simmons, L. W. (1998). Calling songs of field crickets (*Teleogryllus oceanicus*) with and without phonotactic parasitoid infection. *Evolution*, **52**, 166-171.
- Zuk, M., Simmons, L. W. & Rotenberry, J. T. (1995). Acoustically-orienting parasitoids in calling and silent males of the field cricket *Teleogryllus oceanicus*. *Ecol. Entomol.*, **20**, 380-383.
- Zuk, M. & Simmons, L. W. (1997). Reproductive strategies: crickets (Orthoptera: Gryllidae). In *Mating Systems in Insects and Arachnids* (J. C. Choe & B. J. Crespi, eds.). Cambridge University Press; Cambridge, pp. 89-109.
- Zuk, M., Rotenberry, J. T. & Simmons, L. W. (2001). Geographical variation in calling song of the field cricket *Teleogryllus oceanicus*: The importance of spatial scale. *J. Evol. Biol.*, **14**, 731-741.

NON-INSECT INVERTEBRATES

- Au, W. W. L. & Banks, K. (1997). The acoustics of snapping shrimps. *J. Acoust. Soc. Am.*, **101**, 3032.
- Au, W. W. L. & Banks, K. (1998). The acoustics of the snapping shrimp *Synalpheus parneomeris* in Kaneohe Bay. *J. Acoust. Soc. Am.*, **103**, 41-48.
- Baurecht, D. & Barth, F. G. (1993). Vibratory communication in spiders. II. Representation of parameters contained in synthetic male courtship signals by female vibration receptor. *J. Comp. Physiol. A.*, **173**, 309-319.
- Bleckmann, H., Borchartd, M., Horn, P. & Goerner, P. (1994). Stimulus discrimination and wave source localization in fishing spiders (*Dolomedes triton* and *D. okefinokensis*). *J. Comp. Physiol. A.*, **174**, 305-316.
- Budelmann, B.-U. (1992). Hearing of nonarthropod invertebrates. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag; New York, pp. 141-155.
- Clayton, D. (2001). Acoustic calling in four species of ghost crabs: *Ocypode jousseaumei*, *O. platytarsus*, *O. rotundata* and *O. saratan* (Brachyura: Ocypodidae). *Bioacoustics*, **12**, 37-55.
- Davies, V. T. (1993). The spinning field and stridulating apparatus of penultimate male *Macrogradungula moonyia* (Araneae: Austrochiloidea: Gradungulidae). *Mem. Queensl. Mus.*, **33**, 175-178.
- Dierkes, S. & Barth, F. G. (1995). Mechanism of signal production in the vibratory communication of the wandering spider *Cupiennius getazi* (Arachnida, Araneae). *J. Comp. Physiol. A.*, **176**, 31-44.
- Fernandez-Montraveta, C. & Schmitt, A. (1994). Substrate-borne vibrations produced by male *Lycosa tarentula fasciiventris* (Araneae, Lycosidae) during courtship and agonistic interactions. *Ethology*, **97**, 81-93.
- Friedel, T. & Barth, F. G. (1995). The response of interneurons in the spider CNS (*Cupiennius salei* keyserling) to vibratory courtship signals. *J. Comp. Physiol. A.*, **177**, 159-171.

- Hughes, M. (2000). Deception with honest signals: signal residuals and signal function in snapping shrimp. *Behav. Ecol.*, **11**, 614-623.
- Kotiaho, J., Alatalo, R. V., Mappes, J. & Parri, S. (1997). Fighting success in relation to body mass and drumming activity in the male wolf spider *Hygrolycosa rubrofasciata*. *Can. J. Zool.*, **75**, 1532-1535.
- Kotiaho, J., Alatalo, R. V., Mappes, J. & Parri, S. (1996). Sexual selection in a wolf spider: male drumming activity, body size, and viability. *Evolution*, **50**, 1977-1981.
- Kronstedt, T. (1996). Vibratory communication in the wolf spider *Hygrolycosa rubrofasciata* (Araneae, Lycosidae). *Rev. Suisse Zool., hors série*, 341-354.
- Landolfi, M. A. & Barth, F. G. (1996). Vibrations in the orb web of the spider *Nephila clavipes*: cues for discrimination and orientation. *J. Comp. Physiol. A.*, **179**, 493-508.
- Mappes, J., Alatalo, R. V., Kotiaho, J. & Parri, S. (1996). Viability costs of condition-dependent sexual male display in a drumming wolf spider. *Proc. R. Soc. Lond. B.*, **263**, 785-789.
- Marshall, S. D., Thoms, E. M. & Uetz, G. W. (1995). Setal entanglement: An undescribed method of stridulation by a neotropical tarantula (Araneae: Theraphosidae). *J. Zool.*, **235**, 587-595.
- Newland, P. L. & Chapman, C. J. (1993). Locomotory behaviour and swimming performance of the Norway lobster *Nephrops norvegicus* in the presence of an acoustic tag. *Mar. Biol. (Berl.)*, **115**, 33-37.
- Parri, S., Alatalo, R. V., Kotiaho, J. & Mappes, J. (1997). Female choice for male drumming in the wolf spider *Hygrolycosa rubrofasciata*. *Anim. Behav.*, **53**, 305-312.
- Popper, A. N., Salmon, M. & Horch, K. W. (2001). Acoustic detection and communication by decapod crustaceans. *J. Comp. Physiol. A.*, **187**, 83-89.
- Readhead, M. L. (1997). Snapping shrimp noise near Gladstone, Queensland. *J. Acoust. Soc. Am.*, **101**, 1718-1722.
- Rivero, A., Alatalo, R. V., Kotiaho, J. S., Mappes, J. & Parri, S. (2000). Acoustic signalling in a wolf spider: can signal characteristics predict male quality? *Anim. Behav.*, **60**, 187-194.
- Schmitt, A., Friedel, T. & Barth, F. G. (1993). Importance of pause between spider courtship vibrations and general problems using synthetic stimuli in behavioural studies. *J. Comp. Physiol. A.*, **172**, 707-714.
- Schmitt, A., Schuster, M. & Barth, F. G. (1994). Vibratory communication in a wandering spider, *Cupiennius getazi*: female and male preferences for features of the conspecific male's releaser. *Anim. Behav.*, **48**, 1155-1171.
- Versluis, M., von der Heydt, A., Lohse, D. & Schmitz, B. (2000). On the sound of snapping shrimp: The collapse of a cavitation bubble. *J. Acoust. Soc. Am.*, **108**, 2541.
- Versluis, M., Schmitz, B., von der Heydt, A. & Lohse, D. (2000). How snapping shrimp snap: Through cavitating bubbles. *Science*, **289**, 2114-2117.

FISHES

- Akamatsu, T., Matsusita, Y., Hatakeyama, Y. & Inoue, Y. (1997). Startle response level of the Japanese anchovy *Engraulis japonicus* to underwater pure tone signals. *Bioacoustics*, **8**, 267.
- Amorim, M. C. de & Hawkins, A. D. (1995). Acoustic communication in triglid fish. *Bioacoustics*, **6**, 220.
- Amorim, M. C. P. de & Hawkins, A. D. (1994). Sounds produced by the grey gurnard *Eutrigla gurnardus* L. (Pisces, Triglidae) and related fish. *Bioacoustics*, **6**, 69-70.
- Amorim, M. C. P., McCracken, M. L. & Fine, M. L. (2002). Bioenergetics of calling in oyster toadfish *Opsanus tau*. *Bioacoustics*, **12**, 223-225.
- Amorim, M. C. P. & Hawkins, A. D. (2000). Growling for food: acoustic emissions during competitive feeding of the streaked gurnard. *J. Fish. Biol.*, **57**, 895-907.
- Amorim, M. C. P. de (1996). Sound production in the blue-green damselfish, *Chromis viridis* (Cuvier, 1830)(Pomacentridae). *Bioacoustics*, **6**, 265-272.
- Astrup, J. & Moehl, B. (1993). Detection of intense ultrasound by the cod *Gadus morhua*. *J. Exp. Biol.*, **182**, 71-81.
- Astrup, J. & Moehl, B. (1998). Discrimination between high and low repetition rates of ultrasonic pulses by the cod. *J. Fish Biol.*, **52**, 205-208.
- Barimo, J. F. & Fine, M. L. (1998). Relationship of swim-bladder shape to the directionality pattern of underwater sound in the oyster toadfish. *Can. J. Zool.*, **76**, 134-143.
- Bass, A. H. (1995). Alternative life history strategies and dimorphic males in an acoustic communication system. In *Proceedings of the Fifth International Symposium on the Reproductive Physiology of Fish*, pp. 258-260.
- Bass, A. H., Marchaterre, M. A. & Baker, H. (2001). Catecholaminergic innervation of central auditory system in a vocal teleost. *Soc. Neurosci. Abstr.*, **27**, 240.

- Bass, A. H. (2001). Fish songs: Temporal scaling of divergent vocal phenotypes for alternative male reproductive morphs. *Horm. Behav.*, **39**, 313.
- Bass, A. H. (1998). Behavioral and evolutionary neurobiology: A pluralistic approach. *Am. Zool.*, **38**, 97-107.
- Bass, A. H. & Andersen, K. (1991). Inter- and intra-sexual dimorphism in the vocal control system of a teleost fish: motor axon number and size. *Brain Behav. Evol.*, **37**, 204-214.
- Bass, A. H., Marchaterre, M. A. & Baker, R. (1993). Transneuronal biocytin delineates species differences in a brainstem vocal-acoustic circuit in sound producing fish. *Soc. Neurosci. Abstr.*, **19**, 1202.
- Bass, A. H., Bodnar, D. A. & Marchaterre, M. A. (2000). Midbrain acoustic circuitry in a vocalizing fish. *J. Comp. Neurol.*, **419**, 505-531.
- Bass, A. H., Bodnar, D. & Marchaterre, M. A. (1999). Complementary explanations for existing phenotypes in an acoustic communication system. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 493-514.
- Bass, A. H., Horvath, B. J. & Brothers, E. B. (1996). Nonsequential developmental trajectories lead to dimorphic vocal circuitry for males with alternative reproductive tactics. *J. Neurobiol.*, **30**, 493-504.
- Bass, A. H. (2002). Neural and endocrine regulation of vocal-acoustic networks. *Bioacoustics*, **12**, 247-249.
- Bass, A. H., Marchaterre, M. A. & Baker, R. (1994). Vocal-acoustic pathways in a teleost fish. *J. Neurosci.*, **14**, 4025-4039.
- Bass, A. H., Bodnar, D. A. & Marchaterre, M. A. (2001). Acoustic nuclei in the medulla and midbrain of the vocalizing Gulf toadfish (*Opsanus beta*). *Brain Behav. Evol.*, **57**, 63-79.
- Bisazza, A., Rogers, L. J. & Vallortigara, G. (1998). The origins of cerebral asymmetry: A review of evidence of behavioural and brain lateralization in fishes, reptiles and amphibians. *Neurosci. Biobehav. Rev.*, **22**, 411-426.
- Bleckmann, H., Niemann, U. & Fritsch, B. (1991). Peripheral and central aspects of the acoustic and lateral line system of a bottom dwelling catfish, *Ancistrus* sp. *J. Comp. Neurol.*, **314**, 452-466.
- Bodnar, D. A. & Bass, A. H. (2001). The coding of concurrent vocal signals by the auditory midbrain: The effects of stimulus level and depth of modulation. *J. Acoust. Soc. Am.*, **109**, 809-825.
- Bodnar, D. A. & Bass, A. H. (2001). Coding of concurrent vocal signals by the auditory midbrain: effects of duration. *J. Comp. Physiol. A.*, **187**, 381-391.
- Bodnar, D. A., Holub, A. D., Land, B. R., Skovira, J. & Bass, A. H. (2001). Temporal population code of concurrent vocal signals in the auditory midbrain. *J. Comp. Physiol. A.*, **187**, 865-873.
- Bonacito, C., Costantini, M., Picciulin, M., Ferrero, E. A. & Hawkins, A. D. (2002). Passive hydrophone census of *Sciaena umbra* (Sciaenidae) in the Gulf of Trieste (Northern Adriatic Sea, Italy). *Bioacoustics*, **12**, 292-294.
- Brantley, R. K., Tseng, J. & Bass, A. H. (1993). The ontogeny of inter- and intrasexual vocal muscle dimorphisms in a sound-producing fish. *Brain Behav. Evol.*, **42**, 336-349.
- Brantley, R. C., Marchaterre, M. A. & Bass, A. H. (1993). Androgen effects on vocal muscle structure in a teleost fish with inter- and intra-sexual dimorphism. *J. Morphol.*, **216**, 305-318.
- Brantley, R. K. & Bass, A. H. (1994). Alternative male spawning tactics and acoustic signals in the plainfin midshipman fish *Porichthys notatus* Girard (Teleostei: Batrachoididae). *Ethology*, **96**, 213-232.
- Braun, C. B. & Grande, T. (2002). Evolution of the octavolateralis system: A phylogenetic assessment. *Bioacoustics*, **12**, 118-120.
- Carlson, B. A. & Bass, A. H. (2000). Sonic/vocal motor pathways in squirrelfish (Teleostei, Holocentridae). *Brain Behav. Evol.*, **56**, 14-28.
- Carr, C. E. (1993). Processing of temporal information in the brain. *Ann. Rev. Neurosci.*, **16**, 223-243.
- Casagrand, J. L., Cummins, G. I. & Eaton, R. C. (2002). Modelling studies and physiology of discriminatory coincidence detection in the Mauthner neuron. *Bioacoustics*, **12**, 212-214.
- Casaretto, L. & Hawkins, A. D. (2002). Spawning behaviour and the acoustic repertoire of haddock. *Bioacoustics*, **12**, 250-252.
- Chang, J. Y. S., Popper, A. N. & Sidel, W. M. (1992). Heterogeneity of sensory hair cells in a fish ear. *J. Comp. Neurol.*, **324**, 621-640.
- Coffin, A. B., Higgs, D. M., Presson, J. C. & Popper, A. N. (2002). Distribution of unconventional myosins in the zebrafish ear. *Bioacoustics*, **12**, 140-142.
- Colson, D. J., Patek, S. N., Brainerd, E. L. & Lewis, S. M. (1998). Sound production during feeding in *Hippocampus* seahorses (Syngnathidae). *Environ. Biol. Fishes*, **51**, 221-229.
- Connaughton, M. A. & Taylor, M. H. (1996). Drumming, courtship, and spawning behavior in captive weakfish, *Cynoscion regalis*. *Copeia*, **1996**, 195-199.
- Connaughton, M. A. & Taylor, M. H. (1995). Seasonal and daily cycles in sound production associated with spawning in weakfish, *Cynoscion regalis*. *Environ. Biol. Fish.*, **42**, 233-240.
- Connaughton, M. A., Fine, M. L. & Taylor, M. H. (2002). Use of sound for localisation of spawning weakfish in Delaware Bay (USA) and effects of fish size, temperature and season on sound parameters.

- Bioacoustics*, **12**, 294-296.
- Connaughton, M. A., Taylor, M. H. & Fine, M. L. (2000). Effects of fish size and temperature on weakfish disturbance calls: implications for the mechanism of sound generation. *J. Exp. Biol.*, **203**, 1503-1512.
- Coombs, S. & Fay, R. R. (1993). Source level discrimination by the lateral line system of the mottled sculpin *Cottus bairdi*. *J. Acoust. Soc. Am.*, **93**, 2116-2123.
- Coombs, S. (2002). Imaging of the hydrodynamic environment by the peripheral lateral line system. *Bioacoustics*, **12**, 148-150.
- Coombs, S. (1999). Signal detection theory, lateral-line excitation patterns and prey capture behaviour of mottled sculpin. *Anim. Behav.*, **58**, 421-430.
- Crawford, J. D. (1993). Central auditory neurophysiology of a sound producing fish: the mesencephalon of *Pollimyrus isidori* (Mormyridae). *J. Comp. Physiol. A.*, **172**, 139-152.
- Crawford, J. D. & Huang, X. (1999). Communication signals and sound production mechanisms of mormyrid electric fish. *J. Exp. Biol.*, **202**, 1417-1426.
- Crawford, J. D. (1997). Feature-detecting auditory neurons in the brain of a sound-producing fish. *J. Comp. Physiol. A.*, **180**, 439-450.
- Crawford, J. D. (2002). Acoustic communication and auditory neural computation in sound-producing fish. *Bioacoustics*, **12**, 170-172.
- Crawford, J. D., Jacob, P. & Benech, V. (1997). Sound production and reproductive ecology of strongly acoustic fish in Africa: *Pollimyrus isidori*, Mormyridae. *Behaviour*, **134**, 677-725.
- Crawford, J. D., Cook, A. P. & Heberlein, A. S. (1997). Bioacoustic behavior of African fishes (Mormyridae): Potential cues for species and individual recognition in *Pollimyrus*. *J. Acoust. Soc. Am.*, **102**, 1200-1212.
- Deffenbaugh, M. (2002). Mitigating seismic impact on marine life: Current practice and future technology. *Bioacoustics*, **12**, 316-318.
- Denton, E. J. & Gray, J. A. B. (1993). Stimulation of the acoustico-lateralis system of clupeid fish by external sources and their own movements. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **341**, 113-127.
- Derenburger, C., Finneran, J. J. & Hastings, M. C. (1997). Comparison of the low-frequency response of the peripheral auditory organs in the goldfish and oscar. *J. Acoust. Soc. Am.*, **101**, 3163.
- Dos Santos, M. E., Modesto, T., Matos, R., Grober, M. S., Oliveira, R. F. & Canario, A. (2000). Sound production by the Lusitanian toadfish, *Halobatrachus didactylus*. *Bioacoustics*, **10**, 309-321.
- Dunning, D. J., Ross, Q. E., Geoghegan, P., Reichle, J. J., Menezes, J. K. & Watson, J. K. (1992). Alewives avoid high-frequency sound. *N. Am. J. Fish Manage.*, **12**, 407-416.
- Eaton, R. C., Casagrand, J. L. & Cummins, G. I. (2002). Neural implementation of the phase model for localising impulse sounds by the Mauthner system. *Bioacoustics*, **12**, 209-212.
- Eaton, R. C., Canfield, J. C. & Guzik, A. L. (1995). Left-right discrimination of sound onset by the Mauthner system. *Brain Behav. Evol.*, **46**, 165-179.
- Edds-Walton, P. L., Fay, R. R. & Highstein, S. M. (1999). Dendritic arbors and central projections of physiologically characterized auditory fibers from the sacculle of the toadfish, *Opsanus tau*. *J. Comp. Neurol.*, **411**, 212-238.
- Edds-Walton, P. L. & Fay, R. R. (2002). Directional auditory processing in the oyster toadfish *Opsanus tau*. *Bioacoustics*, **12**, 202-204.
- Elepfandt, A. & Oed, K. (2002). Lateral line reading of hydromechanical frequency dispersal of water surface waves: Homology to cochlear mechanisms? *Bioacoustics*, **12**, 151-152.
- Engelmann, J., Kroether, S., Mogdans, J. & Bleckmann, H. (2002). Responses of primary and secondary lateral line units to dipole stimuli applied under still and running water conditions. *Bioacoustics*, **12**, 158-160.
- Engen, F. & Folstad, I. (1999). Cod courtship song: a song at the expense of dance. *Can. J. Zool.*, **77**, 542-550.
- Enger, P. S., Karlsen, H. E., Knudsen, F. R. & Sand, O. (1993). Detection and reaction of fish to infrasound. *ICES (Int. Counc. Explor. Sea) Mar. Sci. Symp.*, **196**, 108-112.
- Enger, P. S. (2002). Ultrasound perception - an old question. *Bioacoustics*, **12**, 104-106.
- Engaas, A., Loekkeberg, S., Ona, E. & Soldal, A. V. (1996). Effects of seismic shooting on local abundance and catch rates of cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*). *Can. J. Fish. Aquat. Sci.*, **53**, 2238-2249.
- Engaas, A. & Loekkeberg, S. (2002). Effects of seismic shooting and vessel-generated noise on fish behaviour and catch rates. *Bioacoustics*, **12**, 313-316.
- Fay, R. R. (1994). Perception of temporal acoustic patterns by the goldfish (*Carassius auratus*). *Hear. Res.*, **76**, 158-172.
- Fay, R. R. & Popper, A. N., eds. (1999). *Comparative Hearing: Fish and Amphibians*. Springer-Verlag; New York.
- Fay, R. R. & Megela-Simmons, A. M. (1999). The sense of hearing in fishes and amphibians. In *Comparative*

- Hearing: Fish and Amphibians* (R. R. Fay and A. N. Popper, eds.). Springer-Verlag; New York, pp. 269-318.
- Fay, R. R. & Edds-Walton, P. L. (1997). Directional response properties of saccular afferents of the toadfish, *Opsanus tau*. *Hear. Res.*, **11**, 1-21.
- Fay, R. R. (2002). The sense of hearing of fishes. *Bioacoustics*, **12**, 167-169.
- Fay, R. R. (1995). Perception of spectrally and temporally complex sounds by the goldfish (*Carassius auratus*). *Hear. Res.*, **89**, 146-154.
- Fay, R. R. (1999). Sharpening of directional auditory responses in the descending octaval nucleus of the toadfish (*Opsanus tau*). *Biol. Bull.*, **197**, 240-241.
- Fay, R. R. (1998). Auditory stream segregation in goldfish (*Carassius auratus*). *Hear. Res.*, **120**, 69-76.
- Fay, R. R. & Coombs, S. L. (1992). Psychometric functions for level discrimination and the effects of signal duration in the goldfish (*Carassius auratus*): psychophysics and neurophysiology. *J. Acoust. Soc. Am.*, **92**, 189-201.
- Fay, R. R., Coombs, S. & Elepfandt, A. (2002). Response of goldfish otolithic afferents to a moving dipole sound source. *Bioacoustics*, **12**, 172-174.
- Fay, R. R. (2000). Spectral contrasts underlying auditory stream segregation in goldfish (*Carassius auratus*). *J. Assoc. Res. Otolaryngol.*, **1**, 120-128.
- Fine, M. L. & Mosca, P. J. (1989). Anatomical study of the innervation pattern of the sonic muscle of the oyster toadfish. *Brain Behav. Evol.*, **34**, 265-272.
- Fine, M. L., Friel, J. P., McElroy, D., King, C. B., Loesser, K. E. & Newton, S. (1997). Pectoral spine locking and sound production in the channel catfish *Ictalurus punctatus*. *Copeia*, **1997**, 777-790.
- Fine, M. L., McElroy, D., Rafi, J., King, C. B., Loesser, K. & Newton, S. (1995). Sound producing mechanism, handedness, and developmental changes in channel catfish sound production. *Soc. Neurosci. Abstr.*, **21**, 1451.
- Fine, M. L., McElroy, D., Rafi, J., King, C. B., Loesser, K. & Newton, S. (1996). Lateralization of pectoral stridulation sound production in the channel catfish. *Physiol. Behav.*, **60**, 753-757.
- Fine, M. L. & Mosca, P. J. (1995). A golgi and horseradish peroxidase study of the sonic motor nucleus of the oyster toadfish. *Brain Behav. Evol.*, **45**, 123-137.
- Fine, M. L. & Perini, M. A. (1994). Sound production evoked by electrical stimulation of the forebrain of the oyster toadfish. *J. Comp. Physiol.*, **174**, 173-185.
- Fine, M. L., Bernard, B. & Harris, T. M. (1993). Functional morphology of toadfish sonic muscle fibers: relationship to possible fiber division. *Can. J. Zool.*, **71**, 2262-2274.
- Fine, M., Lugli, M., Mainardi, D., Pavan, G. & Torricelli, P., eds. (1997). Underwater Bioacoustics: Behavioural, Environmental and Evolutionary Perspectives. *Marine and Freshwater Behaviour and Physiology*, **29**, 1-276.
- Fine, M. L., Malloy, K. L., King, C. B., Mitchell, S. L. & Cameron, T. M. (2001). Movement and sound generation by the toadfish swimbladder. *J. Comp. Physiol. A.*, **187**, 371-379.
- Fine, M. L., Pennypacker, K. R., Drummond, K. A. & Blem, C. R. (1986). Concentration and location of metabolic substrates in fast toadfish sonic muscle. *Copeia*, **4**, 910-915.
- Fine, M. L., Burns, N. M. & Harris, T. M. (1990). Ontogeny and sexual dimorphism of sonic muscles in the oyster toadfish. *Can. J. Zool.*, **86**, 1374-1381.
- Fine, M. L., Malloy, K. L., King, C. B., Mitchell, S. L. & Cameron, T. M. (2002). Sound generation by the toadfish swimbladder. *Bioacoustics*, **12**, 221-222.
- Finneran, J. J. & Hastings, M. C. (2000). A mathematical analysis of the peripheral auditory system mechanics in the goldfish (*Carassius auratus*). *J. Acoust. Soc. Am.*, **108**, 1308-1321.
- Fletcher, L. B. & Crawford, J. D. (2001). Acoustic detection by sound-producing fishes (Mormyridae): the role of gas-filled tympanic bladders. *J. Exp. Biol.*, **204**, 175-183.
- Forrest, T. G., Miller, G. L. & Zagar, J. R. (1993). Sound propagation in shallow water: implications for acoustic communication by aquatic animals. *Bioacoustics*, **4**, 259-270.
- Fuiman, L. A., Smith, M. E. & Malley, V. N. (1999). Ontogeny of routine swimming speed and startle responses in red drum, with a comparison of responses to acoustic and visual stimuli. *J. Fish Biol.*, **55**, 215-226.
- Furukawa, T. (2002). A recollection of early electrophysiological studies of goldfish hearing. *Bioacoustics*, **12**, 109-111.
- Goodson, J. L. & Bass, A. H. (2000). Forebrain peptides modulate sexually polymorphic vocal circuitry. *Nature*, **403**, 769-772.
- Goodson, J. L. & Bass, A. H. (2000). Vasotocin innervation and modulation of vocal-acoustic circuitry in the teleost *Porichthys notatus*. *J. Comp. Neurol.*, **422**, 363-379.
- Goodson, J. L. & Bass, A. H. (2002). Vocal-acoustic circuitry and descending vocal pathways in teleost fish: Convergence with terrestrial vertebrates reveals conserved traits. *J. Comp. Neurol.*, **448**, 298-322.
- Goodson, J. L. & Bass, A. H. (1999). Vasotocin modulation of fictive vocalization in the teleost *Porichthys*

- notatus*: Anatomical and physiological evidence. *Soc. Neurosci. Abstr.*, **25**, 605.
- Goodson, J. L. & Bass, A. H. (2000). Rhythmic midbrain-evoked vocalizations is inhibited by vasoactive intestinal polypeptide in the teleost *Porichthys notatus*. *Brain Res.*, **865**, 107-111.
- Grande, T. & Braun, C. B. (2002). Evolution of the Weberian apparatus. *Bioacoustics*, **12**, 120-122.
- Grant, J. W. A., Bryant, M. J. & Soos, C. E. (1995). Operational sex ratio, mediated by synchrony of female arrival, alters the variance of male mating success in Japanese medaka. *Anim. Behav.*, **49**, 367-375.
- Guzik, A. L. & Eaton, R. C. (1994). Directional hearing by the Mauthner system. *Adv. Neural Information Processing Systems*, **6**, 574-581.
- Haddon, C. & Lewis, J. (1996). Early ear development in the embryo of the zebrafish, *Danio rerio*. *J. Comp. Neurol.*, **365**, 113-128.
- Hastings, M. C. (2002). Biomechanics of hearing in fish: From the sonic to the ultrasonic. *Bioacoustics*, **12**, 128-131.
- Hawkins, A. D. (1986). Underwater sound and fish behaviour. In *The Behaviour of Teleost Fishes* (T. J. Pitcher, ed.). Croom Helm; London, pp. 114-151.
- Hawkins, A. D., Casaretto, L., Picciulin, M. & Olsen, K. (2002). Locating spawning haddock by means of sound. *Bioacoustics*, **12**, 284-286.
- Hawkins, A. D. & Amorim, M. C. P. (2000). Spawning sounds of the male haddock, *Melanogrammus aeglefinus*. *Environ. Biol. Fishes*, **59**, 29-41.
- Hawkins, A. D. (1993). Underwater sound and fish behaviour. In *Fish and Fisheries Series. 7. Behaviour of Teleost Fishes, 2.* (T. J. Pitcher, ed). Chapman and Hall Ltd.; London, pp. 129-169.
- Henglmüller, S. M. & Ladich, F. (1997). Ontogeny of agonistic behaviour and vocalization in the croaking gourami. *Adv. Ethol.*, **32**, 100.
- Henglmüller, S. M. & Ladich, F. (1997). Ontogeny of agonistic behaviour and vocalization in the croaking gourami *Trichopsis vittata* (Teleostei). *Bioacoustics*, **8**, 266-267.
- Henglmüller, S. M. & Ladich, F. (1999). Development of agonistic behaviour and vocalization in croaking gouramis. *J. Fish Biol.*, **54**, 380-395.
- Higgs, D. M. (2002). Development of the fish auditory system: How do changes in auditory structure affect function? *Bioacoustics*, **12**, 180-183.
- Holt, S. A. (2002). Intra- and inter-day variability in sound production by red drum (Sciaenidae) at a spawning site. *Bioacoustics*, **12**, 227-229.
- Johnson, D. L. (1998). The acoustic signal and associated behaviour of the longear sunfish *Lepomis megalotis*. *Bioacoustics*, **9**, 150.
- Kenyon, T. N., Ladich, F. & Yan, H. Y. (1998). A comparative study of hearing ability in fishes: the auditory brainstem response approach. *J. Comp. Physiol. A.*, **182**, 307-318.
- Kenyon, T. N., Ladich, F. & Yan, H. Y. (1998). A comparative study of hearing ability in fishes: the auditory brainstem response approach. *J. Comp. Physiol. A.*, **182**, 307-318.
- Kenyon, T. N. (1994). The significance of sound interception to males of the bicolor damselfish, *Pomacentrus partitus*, during courtship. *Env. Biol. Fish.*, **40**, 391-405.
- Klimley, A. P. & Beavers, S. C. (1998). Playback of acoustic thermometry of ocean climate (ATOC)-like signal to bony fishes to evaluate phonotaxis. *J. Acoust. Soc. Am.*, **104**, 2506-2510.
- Knapp, R., Marchaterre, M. A. & Bass, A. H. (1999). Early development of the motor and premotor circuitry of a sexually dimorphic vocal pathway in a teleost fish. *J. Neurobiol.*, **38**, 475-490.
- Knudsen, F. R., Enger, P. S. & Sand, O. (1994). Avoidance responses to low frequency sound in downstream migrating Atlantic salmon smolt, *Salmo salar*. *J. Fish Biol.*, **45**, 227-233.
- Knudsen, F. R., Schreck, C. B., Knapp, S. M., Enger, P. S. & Sand, O. (1997). Infrasound produces flight and avoidance responses in Pacific juvenile salmonids. *J. Fish Biol.*, **51**, 824-829.
- Kozloski, J. & Crawford, J. D. (2000). Transformations of an auditory temporal code in the medulla of a sound-producing fish. *J. Neurosci.*, **20**, 2400-2408.
- Kozloski, J. & Crawford, J. D. (1998). Functional neuroanatomy of auditory pathways in the sound-producing fish *Pollimyrus*. *J. Comp. Neurol.*, **401**, 227-252.
- Kratochvil, H. & Ladich, F. (2000). Auditory role of lateral trunk channels in cobitid fishes. *J. Comp. Physiol. A.*, **186**, 279-285.
- Kaats, I. M. (1999). *The behavioural and morphological diversity of acoustic communication systems in a clade of tropical catfishes (Pisces: Siluriformes)*. Unpubl. Ph.D. dissertation. SUNY College of Environmental Science and Forestry; Syracuse, N.Y.
- Kaatz, I. M. (1995). The evolution of sound signal design in arioid catfishes. *Am. Zool.*, **35**, 16A.
- Kaatz, I. M. (2002). Multiple sound-producing mechanisms in teleost fishes and hypotheses regarding their behavioural significance. *Bioacoustics*, **12**, 230-233.
- Ladich, F., Marchaterre, M., Goldstein, L. & Bass, A. H. (1995). Vocal-acoustic pathways in synodontid and ariid catfish. *Soc. Neurosci. Abstr.*, **21**, 1451.

- Ladich, F. & Fine, M. L. (1994). Localization of swimbladder and pectoral motoneurons involved in sound production in pimelodid catfish. *Brain Behav. Evol.*, **44**, 86-100.
- Ladich, F. (1997). Comparative analysis of swimbladder (drumming) and pectoral (stridulation) sounds in three families of catfishes. *Bioacoustics*, **8**, 185-208.
- Ladich, F. (1997). Agonistic behaviour and significance of sounds in vocalizing fish. *Mar. Fresh. Physiol. Behav.*, **29**, 87-108.
- Ladich, F. (2000). Acoustic communication and the evolution of hearing in fishes. *Phil. Trans. R. Soc. Lond. B.*, **355**, 1285-1288.
- Ladich, F. (2001). Sound-generating and -detecting motor system in catfish: design of swimbladder muscles in doradids and pimelodids. *Anat. Rec.*, **263**, 297-306.
- Ladich, F. (2002). Did auditory sensitivity and sound production evolve independently in fishes? *Bioacoustics*, **12**, 176-180.
- Ladich, F. & Popper, A. N. (2001). Comparison of the inner ear ultrastructure between teleost fishes using different channels for communication. *Hear. Res.*, **154**, 62-72.
- Ladich, F. & Yan, H. Y. (1998). Correlation between auditory sensitivity and vocalization in anabantoid fishes. *J. Comp. Physiol. A.*, **182**, 737-746.
- Ladich, F. & Yan, H. Y. (1998). Correlation between vocalization and auditory sensitivity in labyrinth fishes. *Bioacoustics*, **9**, 151.
- Ladich, F. & Bass, H. (1998). Sonic/vocal motor pathways in catfishes: Comparisons with other Teleosts. *Brain Behav. Evol.*, **51**, 315-330.
- Ladich, F. (1999). Did auditory sensitivity and vocalization evolve independently in otophysan fishes? *Brain Behav. Evol.*, **53**, 288-304.
- Ladich, F. & Fine, M. L. (1992). Localization of pectoral fin motoneurons (sonic and hovering) in the croaking gourami *Trichopsis vittatus*. *Brain Behav. Ecol.*, **39**, 1-7.
- Ladich, F. (1990). Vocalization during agonistic behaviour in *Cottus gobio* L. (Cottidae): an acoustic threat display. *Ethology*, **84**, 193-201.
- Ladich, F. & Bass, A. H. (1996). Vocal pathways in catfish: comparison with other vocal teleosts. *Soc. Neurosci. Abstr.*, **22**, 447.
- Ladich, F. (1998). Sound characteristics and outcome of contests in male croaking gouramis (Teleostei). *Ethology*, **104**, 517-529.
- Ladich, F. & Bass, A. H. (1996). Sonic/vocal-acousticolateralis pathways in teleost fishes: a transneuronal biocytin study in mochokid catfish. *J. Comp. Physiol.*, **374**, 493-505.
- Lagardere, J. P., Begout, M. L., Lafaye, J. Y. & Villotte, J. P. (1994). Influence of wind-produced noise on orientation in the sole (*Solea solea*). *Can. J. Fish. Aquat. Sci.*, **51**, 1258-1264.
- Lagardere, J. P. & Villotte, J. P. (1990). Particular performance of a flat fish (*Solea solea* L.) in low frequency hearing. *Colloque de Physique*, **C-2**, 631-634 (French).
- Laming, P. R. & Carroll, P. (1994). Telencephalic and midbrain control of acoustic responsiveness in the goldfish (*Carassius auratus*). *Comp. Biochem. Physiol. A.*, **107A**, 469-472.
- Lindholm, M. M. & Bass, A. H. (1993). Early events in myofibrillogenesis and innervation of skeletal sound generating muscle in a teleost fish. *J. Morphol.*, **216**, 225-239.
- Lobel, P. S. (1996). Spawning sound of the trunkfish, *Ostracion meleagris* (Ostraciidae). *Biol. Bull.*, **191**, 308-309.
- Lobel, P. S. & Kerr, L. M. (1999). Courtship sounds of the Pacific damselfish, *Abudefduf sordidus* (Pomacentridae). *Biol. Bull.*, **197**, 242-244.
- Lobel, P. S. (1991). Sounds produced by spawning fishes. *Environ. Biol. Fish.*, **33**, 351-358.
- Lobel, P. S. (2001). Acoustic behaviour of cichlid fishes. *J. Aquacult. Aquatic Sci.*, **9**, 167-186.
- Lobel, P. S. (2001). Fish bioacoustics and behaviour: Passive acoustic detection and the application of a closed-circuit rebreather for field study. *Mar. Tech. Soc. J.*, **35**.
- Lobel, P. S. (1998). Possible species specific courtship sounds by two sympatric cichlid fishes in Lake Malawi, Africa. *Environ. Biol. Fishes*, **52**, 443-452.
- Lobel, P. S. & Mann, D. A. (1995). Spawning sounds of the damselfish, *Dascyllus albisella* (Pomacentridae), and relationship to male size. *Bioacoustics*, **6**, 187-198.
- Lobel, P. S. (2002). Diversity of fish spawning sounds and the application of passive acoustic monitoring. *Bioacoustics*, **12**, 286-289.
- Lokkeborg, S. & Soldal, A. V. (1993). The influence of seismic exploration with airguns on cod *Gadus morhua* behaviour and catch rates. *ICES (Int. Counc. Explor. Sea) Mar. Sci. Symp.*, **196**, 62-67.
- Lu, Z., Xu, Z. & Stadler, J. H. (2002). Roles of the saccule in directional hearing. *Bioacoustics*, **12**, 205-207.
- Lu, Z. & Fay, R. R. (1994). Acoustic response properties of single units in the torus semicircularis of the goldfish (*Carassius auratus*). *J. Comp. Physiol.*, **123**, 33-48.
- Lu, Z. & Fay, R. R. (1993). Acoustic response properties of single units in the torus semicircularis of the

- goldfish *Carassius auratus*. *J. Comp. Physiol. A.*, **173**, 33-48.
- Lu, Z., Song, J. & Popper, A. N. (1998). Encoding of acoustic directional information by saccular afferents of the sleeper goby, *Dormitator latifrons*. *J. Comp. Physiol. A.*, **182**, 805-815.
- Lu, Z. & Popper, A. N. (2001). Neural response directionality correlates of hair cell orientation in a teleost fish. *J. Comp. Physiol. A.*, **187**, 453-465.
- Luczkovich, J. J., Sprague, M. W., Johnson, S. E. & Pullinger, R. C. (1999). Delimiting spawning areas of weakfish *Cynoscion regalis* (Family Sciaenidae) in Pamlico Sound, North Carolina, using passive hydroacoustic surveys. *Bioacoustics*, **10**, 143-160.
- Luczkovich, J. J., Daniel III, H. J., Hutchinson, M., Jenkins, T., Johnson, S. E., Pullinger, R. C. & Sprague, M. W. (2000). Sounds of sex and death in the sea: Bottlenose dolphin whistles suppress mating choruses of silver perch. *Bioacoustics*, **10**, 323-334.
- Luczkovich, J. J. & Sprague, M. W. (2002). Using passive acoustics to monitor estuarine fish populations. *Bioacoustics*, **12**, 289-291.
- Lugli, M. & Torricelli, P. (1999). Prespawning sound production in Mediterranean sand-gobies. *J. Fish Biol.*, **54**, 691-694.
- Lugli, M. (2002). Environmental constraints on the acoustic communication system of stream gobies. *Bioacoustics*, **12**, 252-255.
- Lugli, M., Pavan, G. & Torricelli, P. (1996). The importance of breeding vocalizations for mate attraction in a freshwater goby with a composite sound repertoire. *Ethol. Ecol. Evol.*, **8**, 343-351.
- Lugli, M., Pavan, G., Torricelli, P. & Bobbio, L. (1995). Spawning vocalizations in male freshwater gobiids (Pisces, Gobiidae). *Env. Biol. Fishes*, **43**, 219-231.
- Lugli, M. (1997). Repeatability and effects of temperature and individual size on components of the breeding sounds emitted by male *Padogobius martensii* (Pisces, Gobiidae). *Bioacoustics*, **8**, 267-268.
- Lugli, M. (1997). Response of male goby, *Padogobius martensii*, to aggressive sound playback following pre-experimental visual stimulation. *Behaviour*, **134**, 1175-1188.
- Lugli, M., Torricelli, P., Pavan, G. & Miller, P. J. (1996). Breeding sounds of male *Padogobius nigricans* with suggestions for further evolutionary study of vocal behaviour in gobioid fishes. *J. Fish Biol.*, **49**, 648-657.
- Lychakov, D. V. & Rebane, Y. T. (2002). Otoliths and modelling ear function. *Bioacoustics*, **12**, 125-128.
- Ma, W.-L. D. & Fay, R. R. (2002). Neural representations of acoustic particle motion direction in the auditory midbrain of the goldfish *Carassius auratus*. *Bioacoustics*, **12**, 207-209.
- Maisey, J. G. (2001). Remarks on the inner ear of elasmobranchs and its interpretation from skeletal labyrinth morphology. *J. Morphol.*, **250**, 236-264.
- Mann, D. A. & Lobel, P. S. (1995). Passive acoustic detection of sounds produced by the damselfish, *Dascyllus albisella* (Pomacentridae). *Bioacoustics*, **6**, 199-213.
- Mann, D. A. & Lobel, P. S. (1998). Acoustic behavior of the damselfish *Dascyllus albisella*: Behavioral and geographic variation. *Environ. Biol. Fishes*, **51**, 421-428.
- Mann, D. A., Higgs, D. M., Tavalga, W. N., Souza, M. J. & Popper, A. N. (2001). Ultrasound detection by clupeiform fishes. *J. Acoust. Soc. Am.*, **109**, 3048-3054.
- Mann, D. A., Lu, Z. & Popper, A. N. (1997). A clupeid fish can detect ultrasound. *Nature*, **389**, 341.
- Mann, D. A., Zhongmin, L., Hastings, M. C. & Popper, A. N. (1998). Detection of ultrasonic tones and simulated dolphin echolocation clicks by a teleost fish, the American shad (*Alosa sapidissima*). *J. Acoust. Soc. Am.*, **104**, 562-568.
- Mann, D. A., Bowers-Altman, J. & Rountree, R. A. (1997). Sounds produced by the striped cusk-eel *Ophidion marginatum* (Ophidiidae) during courtship and spawning. *Copeia*, **1997**, 610-612.
- Mann, D. A., Higgs, D. M., Tavalga, W. N. & Popper, A. N. (2002). Ultrasound detection by clupeiform fishes. *Bioacoustics*, **12**, 188-191.
- Mann, D. A. & Lobel, P. S. (1997). Propagation of damselfish (Pomacentridae) courtship sounds. *J. Acoust. Soc. Am.*, **101**, 3783-3791.
- Marchaterre, M. A., Horvath, B. J., Bodnar, D. A. & Bass, A. H. (1995). Androgen-sensitive, brainstem vocal pacemaker. *Soc. Neurosci. Abstr.*, **21**, 39.
- Marchaterre, M., Lindholm, M. & Bass, A. (1992). Ontogeny of motoneurons, acetylcholine and muscle fibers in the vocal motor circuit of a teleost fish. *Soc. Neurosci. Abstr.*, **18**, 1303.
- Marvit, P. & Crawford, J. D. (2000). Auditory discrimination in a sound-producing electric fish (*Pollimyrus*): tone frequency and click-rate difference detection. *J. Acoust. Soc. Am.*, **108**, 1819-1825.
- Marvit, P. & Crawford, J. D. (2000). Auditory thresholds in a sound-producing electric fish (*Pollimyrus*): behavioral measurements of sensitivity to tones and click trains. *J. Acoust. Soc. Am.*, **107**, 2209-2214.
- McCormick, C. A. (1992). Evolution of central auditory pathways in anamniotes. In *The Evolutionary Biology of Hearing* (D. Webster, R. Fay & A. Popper, eds.). Springer; New York.
- McCormick, C. A. (2002). Variations on a vertebrate theme: Central anatomy of the auditory system in fish.

- Bioacoustics*, **12**, 134-137.
- McKibben, J. R. & Bass, A. H. (1998). Behavioral assessment of acoustic parameters relevant to signal recognition and preference in a vocal fish. *J. Acoust. Soc. Am.*, **104**, 3520-3533.
- McKibben, J. R. & Bass, A. H. (2001). Peripheral encoding of behaviourally relevant acoustic signals in a vocal fish: Harmonic and beat stimuli. *J. Comp. Physiol. A.*, **187**, 271-285.
- McKibben, J. R. & Bass, A. H. (1999). Peripheral encoding of behaviorally relevant acoustic signals in a vocal fish: single tones. *J. Comp. Physiol. A.*, **184**, 563-576.
- Mensingher, A. F. & Deffenbaugh, M. (2002). Acoustical neural telemetry from free-swimming fish. *Bioacoustics*, **12**, 333-334.
- Midling, K., Soldal, A. V., Fosseidengen, J. E. & Oevredal, J. T. (2002). Calls of the Atlantic cod: Does captivity restrict their vocal repertoire? *Bioacoustics*, **12**, 233-235.
- Mitson, R. B. (1993). Underwater noise radiated by research vessels. *ICES (Int. Counc. Explor. Sea) Mar. Sci. Symp.*, **196**, 147-152.
- Myrberg, Jr., A. A. (1990). The effects of man-made noise on the behavior of marine animals. *Environment International*, **16**, 575-586.
- Myrberg, A. A. Jr. (1997). Sound production by a coral reef fish (*Pomacentrus partitus*): Evidence for a vocal, territorial keep-out signal. *Bull. Mar. Sci.*, **60**, 1017-1025.
- Myrberg, A. A. Jr., Ha, S. J. & Shablott, M. J. (1993). The sounds of bicolor damselfish (*Pomacentrus partitus*): predictors of body size and a spectral basis for individual recognition and assessment. *J. Acoust. Soc. Am.*, **94**, 3067-3070.
- Myrberg, Jr., A. A. & Stadler, J. H. (2002). The significance of the sounds by male gobies (Gobiidae) to conspecific females: Similar findings to a study made long ago. *Bioacoustics*, **12**, 255-257.
- Myrberg, Jr., A. A. (2002). Fish bioacoustics and behaviour. *Bioacoustics*, **12**, 107-109.
- Myrberg, A. A., Jr. (1996). Fish bioacoustics: Serendipity in research. *Bioacoustics*, **7**, 143-150.
- Nestler, J. M., Ploskey, G. R., Pickens, J., Menezes, J. & Schilt, C. (1992). Responses of blueback herring to high-frequency sound and implications for reducing entrainment at hydropower dams. *N. Am. J. Fish Manage.*, **12**, 667-683.
- Netten, S. M. van & Wiersinga-Post, J. E. C. (2002). Matched peripheral filtering in the lateral line organ and relation to temperature. *Bioacoustics*, **12**, 153-156.
- Nordeide, J. T. & Kjellsby, E. (1999). Sound from spawning cod at their spawning grounds. *ICES J. Mar. Sci.*, **56**, 326-332.
- Nystuen, J. A. & Medwin, H. (1995). Underwater sound produced by rainfall: Secondary splashes of aerosols. *J. Acoust. Soc. Am.*, **97**, 1606-1613.
- Oda, Y., Kawasaki, K., Morita, M., Korn, H. & Matsui, H. (1998). Inhibitory long-term potentiation underlies auditory conditioning of goldfish escape behaviour. *Nature*, **394**, 182-185.
- Picciulin, M., Costantini, M., Hawkins, A. D. & Ferrero, E. A. (2002). Sound emissions of the Mediterranean damselfish *Chromis chromis* (Pomacentridae). *Bioacoustics*, **12**, 236-238.
- Plachta, D. T. T. & Popper, A. N. (2002). Neuronal and behavioural responses of American shad *Alosa sapidissima* to ultrasound stimuli. *Bioacoustics*, **12**, 191-193.
- Platt, C. (1993). Zebrafish inner ear sensory surfaces are similar to those in goldfish. *Hear. Res.*, **65**, 133-140.
- Popper, A. N. & Fay, R. R. (1993). Sound detection and processing by fish: critical review and major research questions. *Brain Behav. Evol.*, **41**, 14-38.
- Popper, A. N. & Edds-Walton, P. L. (1995). Structural diversity in the inner ear of teleost fishes: Implications for connections to the Mauthner cell. *Brain Behav. Evol.*, **46**, 131-140.
- Popper, A. N. & Hoxter, B. (1990). Growth of a fish ear: II. Location of newly proliferated sensory hair cells in the saccular epithelium of *Astronotus ocellatus*. *Hear. Res.*, **45**, 33-40.
- Popper, A. N. (2002). Structure-function relationships in the ears of fishes. *Bioacoustics*, **12**, 115-118.
- Popper, A. N. & Carlson, T. J. (1998). Application of the use of sound to control fish behaviour. *Trans. Am. Fish. Soc.*, **127**, 673-707.
- Popper, A. N., Balletto, J., Strait, K., Winchell, F., Wells, A. W. & Vaskis, M. (2002). Preliminary evidence for the use of sound to decrease losses of aquatic organisms at a power plant cooling water intake. *Bioacoustics*, **12**, 306-307.
- Popper, A. N., Webb, J. F. & Fay, R. R. (2002). Fish bioacoustics: Introduction. *Bioacoustics*, **12**, 99-101.
- Popper, A. N. & Fay, R. R. (1999). The auditory periphery in fishes. In *Comparative Hearing: Fish and Amphibians* (R. R. Fay and A. N. Popper, eds.). Springer-Verlag; New York, pp. 43-100.
- Presson, J. C., Smith, T. & Mentz, L. (1995). Proliferating hair cell precursors in the ear of a postembryonic fish are replaced after elimination by cytosine arabinoside. *J. Neurobiol.*, **26**, 579-584.
- Pruzsinszky, I. & Ladich, F. (1997). Sound production and reproductive behaviour of *Corydoras paleatus*. *Adv. Ethol.*, **32**, 129.
- Pruzsinszky, I. & Ladich, F. (1998). Sound production and reproductive behaviour of the armoured catfish

- Corydoras paleatus* (Callichthyidae). *Environ. Biol. Fishes*, **53**, 183-191.
- Pruzskinzky, I. & Ladich, F. (1997). Sound production and reproductive behaviour in the armoured catfish *Corydoras paleatus* (Callichthyidae). *Bioacoustics*, **8**, 266.
- Ramcharitar, J. (2002). Unique ear structure of silver perch *Bairdiella chrysoura*. *Bioacoustics*, **12**, 122-124.
- Ripley, J. L., Lobel, P. S. & Yan, H. Y. (2002). Correlation of sound production with hearing sensitivity in the Lake Malawi cichlid *Tramitichromis intermedius*. *Bioacoustics*, **12**, 238-240.
- Rogers, P. H., Popper, A. N., Hastings, M. C. & Saidel, W. M. (1988). Processing of acoustic signals in the auditory system of bony fish. *J. Acoust. Soc. Am.*, **83**, 338-349.
- Ross, Q. E., Dunning, D. J., Thorne, R., Menezes, J. K., Tiller, G. W. & Watson, J. K. (1996). Response of alewives to high-frequency sound at a power plant intake on Lake Ontario. *N. Am. J. Fish. Man.*, **16**, 548-559.
- Rountree, R. A., Perkins, P. J., Kenney, R. D. & Hinga, K. R. (2002). Sounds of western North Atlantic fishes - data rescue. *Bioacoustics*, **12**, 242-244.
- Rountree, R. A. & Bowers-Altman, J. (2002). Soniferous behaviour of the striped cusk-eel *Ophidion marginatum*. *Bioacoustics*, **12**, 240-242.
- Sand, O. & Karlsen, H. E. (2000). Detection of infrasound and linear acceleration in fish. *Phil. Trans. R. Soc. Lond. B.*, **355**, 1295-1298.
- Sand, O. (2002). Sound source localisation: An historical assessment. *Bioacoustics*, **12**, 199-201.
- Santiago, J. A. & Castro, J. J. (1997). Acoustic behaviour of *Abudefduf luridus*. *J. Fish Biol.*, **51**, 952-959.
- Satou, M., Shiraishi, A., Matsushima, T. & Okumoto, N. (1991). Vibrational communication during spawning behaviour in the hime salmon, landlocked red salmon *Oncorhynchus nerka*. *J. Comp. Physiol. A.*, **168**, 417-428.
- Saucier, M. H., Baltz, D. M. & Roumillat, W. A. (1992). Hydrophone identification of spawning sites of spotted seatrout *Cynoscion nebulosus* (Osteichthyes, Sciaenidae) near Charleston, South Carolina. *Northeast Gulf Sci.*, **12**, 141-145.
- Schellart, N. A. M. & Popper, A. N. (1992). Functional aspects of the evolution of the auditory system of actinopterygian fish. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer; New York, pp. 295-322.
- Schilt, C. R. & Escher, C. W. (2002). Potential means for ultrasound source localisation in herring. *Bioacoustics*, **12**, 193-195.
- Schilt, C. R. (2002). Natural history in an unnatural environment: Can we help fish to help themselves? *Bioacoustics*, **12**, 310-313.
- Schlinger, B. A., Greco, C. & Bass, A. H. (1999). Aromatase activity in the hindbrain vocal control region of a teleost fish: Divergence among males with alternative reproductive tactics. *Proc. Roy. Soc. Lond. B.*, **266**, 131-136.
- Schmalz, W., Siegesmund, M., Thuermer, K., Kranawettrreiser, J. & Hack, H.-P. (2002). A new method to investigate the downstream migration of fishes within a hydropower plant area in a Middle European river - a possibility to evaluate the effectiveness of behaviour barriers. *Bioacoustics*, **12**, 308-310.
- Scholik, A. R. & Yan, H. Y. (2002). Effects of noise on auditory sensitivity of fishes. *Bioacoustics*, **12**, 186-188.
- Scholik, A. R., Hastings, M. C. & Johnson, D. (1998). A behavioral study of the response of the gizzard shad *Dorosoma cepedianum* to high-frequency sounds. *Bioacoustics*, **9**, 163.
- Scholik, A. R. & Yan, H. Y. (2001). The effects of underwater noise on auditory sensitivity of a cyrinid fish. *Hear. Res.*, **152**, 17-24.
- Schuster, S. (1986). Studies on the bioacoustics of *Colisa lalia* (Perciformes, Belontiidae). *Zool. Beitr.*, **29**, 295-306 (German).
- Sisneros, J. A., Marchaterre, M. A. & Bass, A. H. (2002). Otolithic endorgan projections of the inner ear in a vocal fish. *Bioacoustics*, **12**, 137-139.
- Sparkes, T. C., Prater, C., Akamatsu, T. & Yan, H. Y. (2002). Acoustic signals and aggressive conflicts in the skunk loach *Botia morleti*: Integrating sensory and behavioural approaches. *Bioacoustics*, **12**, 257-259.
- Sprague, M. W. (2000). The single sonic muscle twitch model for the sound-production mechanism in the weakfish, *Cynoscion regalis*. *J. Acoust. Soc. Am.*, **108**, 2430-2437.
- Sprague, M. W. (2002). The single sonic muscle twitch model for sciaenid sound production. *Bioacoustics*, **12**, 225-227.
- Sprague, M. W. & Luczkovich, J. J. (2002). Do striped cusk eels, *Ophidion marginatum* (Ophidiidae) produce the 'chatter' sound attributed to weakfish, *Cynoscion regalis* (Sciaenidae)? *Copeia*, **2001**, 854-859.
- Sprague, M. W., Luczkovich, J. J., Pullinger, R. C., Johnson, S. E., Jenkins, T. & Daniel, H. J. III (2000). Using spectral analysis to identify drumming sounds of some North Carolina fishes in the family Sciaenidae. *J. Elisha Mitchell Soc.*, **116**, 124-145.
- Svellingen, I., Totland, B. & Oevredal, J. T. (2002). A remote-controlled instrument platform for fish behaviour

- studies and sound monitoring. *Bioacoustics*, **12**, 335-336.
- Tavolga, W. N. (1996). How I got started in bioacoustics. *Bioacoustics*, **6**, 281-286.
- Tavolga, W. N. (2002). Fish bioacoustics: A personal history. *Bioacoustics*, **12**, 101-104.
- Taylor, M. A. (1995). The multiple lateral lines of giant rhizodont fishes: passive 3-D location of prey in muddy swamps? *Bioacoustics*, **6**, 216-217.
- Tolimieri, N., Haine, O., Montgomery, J. C. & Jeffs, A. (2002). Ambient sound as a navigational cue for larval reef fish. *Bioacoustics*, **12**, 214-217.
- Torricelli, P., Miller, P. J. & Lugli, M. (1997). Sound emission by Italian gobiids: an evolutionary outlook. *Adv. Ethol.*, **32**, 282.
- Vaquette, C. (1996). Comparative analysis of aggressive behaviour in males of *Colisa chuna* and *C. lalia* (Anabantoidei, Perciformes) with special reference to sound production and body colouration. M.S. thesis. University of Vienna.
- Walsh, P. J., Bedolla, C. & Mommsen, T. P. (1989). Scaling and sex-related differences in toadfish (*Opsanus beta*) sonic muscle activities. *Bull. Mar. Sci.*, **45**, 68-75.
- Walsh, P. J., Mommsen, T. P. & Bass, A. H. (1995). Biochemical and molecular aspects of singing in batrachoidid fishes. In *Biochemistry and Molecular Biology of Fishes*, Vol. 4 (P. W. Hochachka & T. P. Mommsen, eds.). Elsevier Science, B. V.; Amsterdam, pp. 279-289.
- Webb, J. F. (2002). Functional evolution of the lateral line system: Implications for fish bioacoustics. *Bioacoustics*, **12**, 145-147.
- Weeg, M. S. & Bass, A. H. (2002). Structural and functional evidence for acoustic-lateral line interactions in a vocal fish. *Bioacoustics*, **12**, 161-163.
- Weeg, M. S. & Bass, A. H. (2000). Frequency response characteristics of the posterior lateral line nerve in a vocal fish. *Soc. Neurosci. Abstr.*, **26**.
- Weeg, M. S. & Bass, A. H. (2000). Central lateral line pathways in a vocalizing fish. *J. Comp. Neurol.*, **418**, 41-64.
- Whang, A. & Janssen, J. (1994). Sound production through the substrate during reproduction in the mottled sculpin, *Cottus bairdi* (Cottidae). *Env. Biol. Fishes*, **40**, 141-148.
- Wiersinga-Post, J. E. C. & van Netten, S. M. (2000). Temperature dependency of cupular mechanics and hair cell frequency in the fish canal lateral line organ. *J. Comp. Physiol. A.*, **186**, 949-956.
- Wiersinga-Post, J. E. C. & van Netten, S. M. (2002). Calcium influences the mechanical properties of hair cell bundles. *Bioacoustics*, **12**, 156-158.
- Wong, G. S. K. & Zhu, S. (1995). Speed of sound in seawater as a function of salinity, temperature, and pressure. *J. Acoust. Soc. Am.*, **97**, 1732-1736.
- Wood, M., Casaretto, L., Horgan, G. & Hawkins, A. D. (2002). Discriminating between fish sounds - a wavelet approach. *Bioacoustics*, **12**, 337-339.
- Wubbels, R. J. & Schellart, N. A. M. (1998). Neuronal encoding of sound direction in the auditory midbrain of the rainbow trout. *J. Neurophysiol.*, **77**, 3060-3074.
- Wubbels, R. J. & Schellart, N. A. M. (1998). An analysis of the relationship between the response characteristics and topography of directional and non-directional auditory neurons in the torus semicircularis of the rainbow trout. *J. Exp. Biol.*, **201**, 1947-1958.
- Wysocki, L. E. & Ladich, F. (2001). The ontogenetic development of auditory sensitivity, vocalization and communication in the labyrinth fish *Trichopsis vittata*. *J. Comp. Physiol. A.*, **187**, 177-187.
- Wysocki, L. E. & Ladich, F. (2001). Ontogenetic development of auditory sensitivity and vocalization in croaking gouramis. *Soc. Neurosci. Abstr.*, **26**.
- Wysocki, L. E. & Ladich, F. (2002). Ontogeny of hearing and sound production in fishes. *Bioacoustics*, **12**, 183-185.
- Yan, H. Y., Fine, M. L., Horn, N. S. & Colon, W. E. (2000). Variability in the role of the gasbladder in fish audition. *J. Comp. Physiol. A.*, **186**, 435-445.
- Yan, H. Y., Kenyon, T. N. & Ladich, F. (1997). Use of auditory brainstem response (ABR) for fish auditory sensitivity study. *Bioacoustics*, **8**, 251.
- Yan, H. Y. (1998). Stories from receivers' end - How do suprabranchial chambers modulate hearing abilities of sound producing anabantoid fishes? *Bioacoustics*, **9**, 159.
- Yan, H. Y. (1998). Auditory role of the suprabranchial chamber in gourami fish. *J. Comp. Physiol. A.*, **183**, 325-333.
- Yan, H. Y. & Popper, A. N. (1993). Acoustic intensity discrimination by the cichlid fish *Astronotus ocellatus* (Cuvier). *J. Comp. Physiol. A.*, **173**, 347-351.
- Yan, H. Y., Saidel, W. M., Chang, J., Presson, J. C. & Popper, A. N. (1991). Sensory hair cells of the fish ear: evidence of multiple types based on ototoxicity sensitivity. *Proc. Roy. Soc. Ser. B.*, **245**, 133-138.
- Yan, H. Y. (2002). The use of acoustically evoked potentials for the study of hearing in fishes. *Bioacoustics*, **12**, 325-328.

- Yan, H. Y. & Curtsinger, W. S. (2000). The otic gasbladder as an ancillary auditory structure in a mormyrid fish. *J. Comp. Physiol. A.*, **186**, 595-602.
- Yoca, M., Rogers, P. H. & Baxter, K. E. (2002). Is the fish ear an auditory retina? Steady streaming in the otolith-macula gap. *Bioacoustics*, **12**, 131-134.
- Young, I. S. & Rome, L. C. (2001). Mutually exclusive muscle designs: the power output of the locomotory and sonic muscles of the oyster toadfish (*Opsanus tau*). *Proc. Roy. Soc. Lond. B.*, **268**, 1965-1970.
- Zupanc, G. K. H. & Maler, E. (1993). Evoked chirping in the weakly electric fish *Apteronotus leptorhynchus*: A quantitative biophysical analysis. *Can. J. Zool.*, **71**, 2301-2310.

AMPHIBIANS

- Aertsen, A. M. H. J., Vlaming, M. S. M. G., Eggermont, J. J. & Johannesma, P. I. M. (1986). Directional hearing in the grassfrog (*Rana temporaria* L.). II. Acoustics and modeling of the auditory periphery. *Hear. Res.*, **21**, 17-40.
- Akef, M. S. A. & Schneider, H. (1993). Reproductive behaviour and mating call pattern in Degen's toad *Bufo vittatus* in Egypt (Bufonidae, Amphibia). *J. Afr. Zool.*, **107**, 97-104.
- Alder, T. B. & Rose, G. J. (1998). Long-term temporal integration in the anuran auditory system. *Nat. Neurosci.*, **1**, 519-523.
- Alder, T. B. & Rose, G. J. (2000). Integration and recovery processes contribute to the temporal selectivity of neurons in the midbrain of the northern leopard frog, *Rana pipiens*. *J. Comp. Physiol. A.*, **186**, 923-937.
- Allan, S. E. & Simmons, A. M. (1994). Temporal features mediating call recognition in the green treefrog, *Hyla cinerea*: Amplitude modulation. *Anim. Behav.*, **47**, 1073-1086.
- Anderson, M. J. & Micheli-Tzanakou, E. (1997). Resonant cavity dependence of auditory-nerve fibers of the frog *Rana pipiens*. *J. Acoust. Soc. Am.*, **1012**, 3124.
- Backwell, P. R. Y. & Jennions, M. D. (1993). Mate choice in the neotropical frog *Hyla ebraccata*: sexual selection, mate recognition and signal selection. *Anim. Behav.*, **45**, 1248-1250.
- Backwell, P. R. Y. & Passmore, N. I. (1990). Aggressive interactions and intermale spacing in choruses of the leaf-folding frog, *Arixalus delicatus* choruses. *S. Afr. J. Zool.*, **25**, 133-137.
- Baird, R. A., Torres, M. A. & Schuff, N. R. (1993). Hair cell regeneration in the bullfrog vestibular otolith organs following aminoglycoside toxicity. *Hear. Res.*, **65**, 164-174.
- Baird, R. A., Bales, S., Fiorillo, C. & Schuff, N. R. (1995). In vivo and in vitro evidence for non-mitotic hair cell regeneration in the bullfrog vestibular otolith organ. *Assoc. Res. Otolaryngol. Abst.*, **45**, 178.
- Bauer, R. H. (1993). Lateralization of neural control for vocalization by the frog (*Rana pipiens*). *Psychobiology*, **21**, 243-248.
- Bee, M. A. & Gerhardt, H. C. (2000). Getting to know you: Habituation as a mechanism for territorial neighbor recognition. *Am. Zool.*, **40**, 940.
- Bee, M. A. & Schachtman, T. R. (2000). Is habituation a mechanism for neighbor recognition in green frogs? *Behav. Ecol. Sociobiol.*, **48**, 165-168.
- Bee, M. A., Perrill, S. A. & Owen, P. C. (1999). Size assessment in simulated territorial encounters between male green frogs (*Rana clamitans*). *Behav. Ecol. Sociobiol.*, **45**, 177-184.
- Bee, M. A. & Gerhardt, H. C. (2001). Neighbour-stranger discrimination by territorial male bullfrogs (*Rana catesbeiana*): II. Perceptual basis. *Anim. Behav.*, **62**, 1141-1150.
- Bee, M. A. & Gerhardt, H. C. (2001). Habituation as a mechanism of reduced aggression between neighboring territorial male bullfrogs (*Rana catesbeiana*). *J. Comp. Psychol.*, **115**, 68-82.
- Bee, M. A. & Gerhardt, H. C. (2001). Neighbour-stranger discrimination by territorial male bullfrogs (*Rana catesbeiana*): I. Acoustic basis. *Anim. Behav.*, **62**, 1129-1140.
- Bee, M. A. & Perrill, S. A. (1996). Responses to conspecific advertisement calls in the green frog (*Rana clamitans*) and their role in male-male communication. *Behaviour*, **133**, 283-301.
- Benedix Jr., J. H. & Narins, P. M. (1999). Competitive calling behavior by male treefrogs, *Eleutherodactylus coqui* (Anura: Leptodactylidae). *Copeia*, **1999**, 1118-1122.
- Bertram, S., Berrill, M. & Nol, E. (1996). Male mating success and variation chorus attendance within and among breeding seasons in the gray treefrog (*Hyla versicolor*). *Copeia*, **1996**, 729-734.
- Bevier, C. R. (1995). *Physiological constraints on calling activity in neotropical frogs*. Ph.D. dissertation; The University of Connecticut, Storrs.
- Bevier, C. R. (1997). Utilization of energy substrates during calling activity in tropical frogs. *Behav. Ecol. Sociobiol.*, **41**, 343-352.
- Bisazza, A., Rogers, L. J. & Vallortigara, G. (1998). The origins of cerebral asymmetry: A review of evidence of

- behavioural and brain lateralization in fishes, reptiles and amphibians. *Neurosci. Biobehav. Rev.*, **22**, 411-426.
- Bishop, P. J., Jennions, M. D. & Passmore, N. I. (1995). Chorus size and call intensity: Female choice in the painted reed frog, *Hyperolius marmoratus*. *Behaviour*, **132**, 721-731.
- Bishop, P. J. (1994). *Aspects of social organization in anuran choruses*. PhD dissertation. University of the Witwatersrand; Johannesburg.
- Blaustein, A. R. & Waldman, B. (1992). Kin recognition in anuran amphibians. *Anim. Behav.*, **44**, 207-221.
- Boatright-Horowitz, S. S. & Simmons, A. M. (1997). Transient "deafness" accompanies auditory development during metamorphosis from tadpole to frog. *Proc. Natl. Acad. Sci. USA*, **94**, 14877-14882.
- Boatright-Horowitz, S. S., Garabedian, C. E., Odabashian, K. & Simmons, A. M. (1999). Coding of amplitude modulation in the auditory midbrain of the bullfrog (*Rana catesbeiana*) across metamorphosis. *J. Comp. Physiol. A.*, **184**, 219-231.
- Boatright-Horowitz, S. S., Cheney, C. A. & Simmons, A. M. (1999). Atmospheric and underwater propagation of bullfrog vocalizations. *Bioacoustics*, **9**, 257-280.
- Boatright-Horowitz, S. L., Horowitz, S. S. & Simmons, A. M. (2000). Patterns of vocal interactions in a bullfrog (*Rana catesbeiana*) chorus: preferential responding to far neighbors. *Ethology*, **106**, 701-712.
- Bodner, D. A. (1996). The separate and combined effects of harmonic structure, phase, and FM on female preferences in the barking treefrog (*Hyla gratiosa*). *J. Comp. Physiol. A.*, **178**, 173-182.
- Bogert, C. M. & Wells, K. D. (1999). Sounds of North American frogs. The biological significance of voice in frogs. *Copeia*, **1999**, 230-231.
- Boistel, R. & Sueur, J. (1997). The female of *Platymantis vitiensis* (Amphibia, Anura) calls in the absence of the male. *Compt. Rendus Acad. Sci. Ser. III, Sci. Vie*, **320**, 933-941.
- Bosch, J., De la Riva, I. & Marquez, R. (2000). Advertisement calls of seven species of hyperoliid frogs from Equatorial Guinea. *Amphibia-Reptilia*, **21**, 246-255.
- Bosch, J., Rand, A. S. & Ryan, M. J. (2000). Acoustic competition in *Physalaemus pustulosus*, a differential response to calls of relative frequency. *Ethology*, **106**, 865-871.
- Bosch, J. & Marquez, R. (1996). Acoustic competition in male midwife toads *Alytes obstetricans* and *Alytes cisternasii*: Response to neighbor size and calling rate. Implications for female choice. *Ethology*, **102**, 841-855.
- Bosch, J. & Marquez, R. (2001). Female courtship call of the Iberian midwife toad (*Alytes cisternasii*). *J. Herpetol.*, **35**, 647-652.
- Bosch, J. (2001). Female reciprocal calling in the Iberian midwife toad (*Alytes cisternasii*) varies with male call rate and dominant frequency: implications for sexual selection. *Naturwissenschaften*, **88**, 434-437.
- Bosch, J., Rand, A. S. & Ryan, M. J. (2000). Signal variation and call preferences for whine frequency in the tungara frog, *Physalaemus pustulosus*. *Behav. Ecol. Sociobiol.*, **49**, 62-66.
- Bourne, G. R., Collins, A. C., Holder, A. M. & McCarthy, C. L. (2001). Vocal communication and reproductive behavior of the frog *Colostethus beebei* in Guyana. *J. Herpetol.*, **35**, 272-281.
- Boyd, S. K. (1997). Brain vasotocin pathways and the control of sexual behaviors in the bullfrog. *Brain Res. Bull.*, **44**, 345-350.
- Boyd, S. K. (1994). Arginine vasotocin facilitation of advertisement calling and call phonotaxis in bullfrogs. *Horm. Behav.*, **28**, 232-240.
- Boyd, S. K., Wissing, K. D., Heinsz, J. E. & Prins, G. S. (1999). Androgen receptors and sexual dimorphisms in the larynx in the bullfrog. *Gen. Comp. Endocrinol.*, **113**, 59-68.
- Boyd, S. K. (1992). Sexual differences in hormonal control of release calls in bullfrogs. *Horm. Behav.*, **26**, 522-535.
- Brenowitz, E. A. (1989). Neighbor call amplitude influences aggressive behavior and intermale spacing in choruses of the pacific treefrog (*Hyla regilla*). *Ethology*, **83**, 69-79.
- Brenowitz, E. A. & Rose, G. J. (1999). Female choice and plasticity of male calling behaviour in the Pacific treefrog. *Anim. Behav.*, **57**, 1337-1342.
- Brenowitz, E. A. & Rose, G. J. (1994). Behavioural plasticity mediates aggression in choruses of the Pacific treefrog. *Anim. Behav.*, **47**, 633-641.
- Brooke, P. N., Alford, R. A. & Schwarzkopf, L. (2000). Environmental and social factors influence chorusing behaviour in a tropical frog: examining various temporal and spatial scales. *Behav. Ecol. Sociobiol.*, **49**, 79-87.
- Brown, R. M. & Iskandar, D. T. (2000). Nest site selection, larval hatching, and advertisement calls, of *Rana arathooni* from southwestern Sulawesi (Celebes) island, Indonesia. *J. Herpetol.*, **34**, 404-413.
- Brush, J. S. & Narins, P. M. (1989). Chorus dynamics of a neotropical amphibian assemblage: comparison of computer simulation and natural behaviour. *Anim. Behav.*, **37**, 33-44.
- Burmeister, S., Konieczka, J. & Wilczynski, W. (1999). Agonistic encounters in a cricket frog (*Acris crepitans*) chorus: Behavioral outcomes vary with local competition and within the breeding season. *Ethology*,

- Burmeister, S. & Wilczynski, W. (1996). Response of male cricket frogs to stimulus calls with different temporal features. *Am. Zool.*, **36**, 94A.
- Burmeister, S. S. & Wilczynski, W. (2001). Social context influences androgenic effects on calling in the green treefrog (*Hyla cinerea*). *Horm. Behav.*, **40**, 550-558.
- Burmeister, S. & Wilczynski, W. (2000). Social signals influence hormones independently of calling behavior in the treefrog (*Hyla cinerea*). *Horm. Behav.*, **38**, 201-209.
- Burmeister, S., Wilczynski, W. & Ryan, M. J. (1999). Temporal call changes and prior experience affect graded signalling in the cricket frog. *Anim. Behav.*, **57**, 611-618.
- Busby, W. H. & Brecheisen, W. R. (1997). Chorusing phenology and habitat associations of the crawfish frog, *Rana areolata* (Anura: Ranidae) in Kansas. *Southwest. Nat.*, **42**, 210-217.
- Bush, S. L., Dyson, M. L. & Halliday, T. R. (1996). Selective phonotaxis by males in the Majorcan midwife toad. *Proc. R. Soc. Lond. B.*, **263**, 913-917.
- Bush, S. L., Gerhardt, H. C. & Schul, J. (2002). Pattern recognition and call preferences in treefrogs (Anura: Hylidae): a quantitative analysis using a no-choice paradigm. *Anim. Behav.*, **63**, 7-14.
- Bush, S. L. (1997). Vocal behavior of males and females in the Majorcan midwife toad. *J. Herpetol.*, **31**, 251-257.
- Capranica, R. R. (1992). The untuning of the tuning curve: is it time? *Sem. Neurosci.*, **4**, 401-408.
- Carey, M. B. & Zelick, R. (1993). The effect of sound level, temperature and dehydration on the brainstem auditory evoked potential in anuran amphibians. *Hear. Res.*, **70**, 216-228.
- Carranza, A., Castellano, P., Lopez, I. & Honrubia, V. (1994). Gentamicin ototoxicity and hair cell regeneration in the crista ampullaris of *Rana catesbiana*. *17th Assoc. Res. Otolaryngol. Abst.*, **37**, 137.
- Castellano, S., Rosso, A., Doglio, S. & Giacoma, C. (1999). Body size and calling variation in the green toad (*Bufo viridis*). *J. Zool.*, **248**, 83-90.
- Castellano, S., Giacoma, C. & Dujsebayaeva, T. (2000). Morphometric and advertisement call geographic variation in polyploid green toads. *Biol. J. Linn. Soc.*, **70**, 341-360.
- Castellano, S. & Giacoma, C. (1997). The role of female choice in the evolution of the European green toad *Bufo viridis* advertisement call. *Bioacoustics*, **8**, 252.
- Castellano, S. & Giacoma, C. (1998). Stabilizing and directional female choice for male calls in the European green toad. *Anim. Behav.*, **56**, 275-287.
- Castellano, S., Giacoma, C., Dujsebayaeva, T., Odierna, G. & Balletto, E. (1998). Morphometrical and acoustical comparison between diploid and tetraploid green toads. *Biol. J. Linn. Soc.*, **63**, 257-281.
- Catz, D. S., Fischer, L. M., Moschella, M. C., Tobias, M. L. & Kelley, D. B. (1992). Sexually dimorphic expression of a laryngeal specific androgen regulated myosin heavy chain gene during *Xenopus laevis* development. *Dev. Biol.*, **154**, 366-376.
- Cherry, M. I. (1993). Sexual selection in the raucous toad, *Bufo rangeri*. *Anim. Behav.*, **45**, 359-373.
- Cherry, M. E. & Grant, W. S. (1994). Phylogenetic relationships and call structure in four African bufonid species. *S. Afr. J. Zool.*, **29**, 1-10.
- Christensen-Dalsgaard, J., Joergensen, M. B. & Kannevorff, M. (1998). Basic response characteristics of auditory nerve fibers in the grassfrog (*Rana temporaria*). *Hear. Res.*, **119**, 155-163.
- Christensen-Dalsgaard, J. & Narins, P. M. (1993). Sound and vibration sensitivity of the VIIIth nerve fibers in the frogs *Leptodactylus albilabris* and *Rana pipiens pipiens*. *J. Comp. Physiol. A.*, **172**, 653-662.
- Chu, J., Marler, C. A. & Wilczynski, W. (1998). The effects of arginine vasotocin on the calling behavior of male cricket frogs in changing social contexts. *Horm. Behav.*, **34**, 248-261.
- Chu, J., Marler, C. A. & Wilczynski, W. (1992). Arginine vasotocin AVT effects on vocal behavior in cricket frogs *Acris crepitans*. *Soc. Neurosci. Abstr.*, **18**, 894.
- Cocroft, R. B. & Ryan, M. J. (1995). Patterns of advertisement call evolution in toads and chorus frogs. *Anim. Behav.*, **49**, 283-303.
- Dayton, G. H. (2000). *Gastrophryne olivacea* (Narrow-mouthed toad). Vocalization. *Herpetol. Rev.*, **31**, 40.
- Diaz, L. M. & Estrada, A. R. (2000). The male and female vocalizations of the Cuban frog *Eleutherodactylus guanahacabibes* (Anura: Leptodactylidae). *Carib. J. Sci.*, **36**, 328-331.
- Diekamp, B. M. & Gerhardt, H. C. (1993). Midbrain auditory sensitivity in the spring peeper (*Pseudacris crucifer*): correlations with behavioral studies. *J. Comp. Physiol. A.*, **171**, 245-250.
- Diekamp, B. & Gerhardt, H. C. (1995). Selective phonotaxis to advertisement calls in the gray treefrog *Hyla versicolor*: Behavioral experiments and neurophysiological correlates. *J. Comp. Physiol. A.*, **177**, 173-190.
- Dijk, P. van, Wit, H. P. & Segenhout, J. M. (1989). Spontaneous otoacoustic emissions in the European edible frog (*Rana esculenta*): spectral details and temperature dependence. *Hear. Res.*, **42**, 273-282.
- Dobrunz, L. E., Pelletier, D. G. & McMahon, T. A. (1990). Muscle stiffness measured under conditions simulating natural sound production. *Biophys. J.*, **58**, 557-565.

- Docherty, S., Bishop, P. J. & Passmore, N. I. (1995). Calling behavior and male condition in the frog *Hyperolius marmoratus*. *J. Herpetol.*, **29**, 616-618.
- Doty, G. V. & Welch, A. M. (2001). Advertisement call duration indicates good genes for offspring feeding rate in gray tree frogs (*Hyla versicolor*). *Behav. Ecol. Sociobiol.*, **49**, 150-156.
- Driscoll, D. A. (1998). Counts of calling males as estimates of population size in the endangered frogs *Geocrinia alba* and *G. vitellina*. *J. Herpetol.*, **32**, 475-480.
- Dyson, M. L. & Passmore, N. I. (1992). Effect of intermale spacing on female frequency preferences in the painted reed frog. *Copeia*, **1992**, 1111-1114.
- Dyson, M. L., Bush, S. L. & Halliday, T. R. (1998). Phonotaxis by female Majorcan midwife toads, *Alytes muletensis*. *Behaviour*, **135**, 213-230.
- Dyson, M. L., Henzi, S. P. & Passmore, N. I. (1994). The effect of changes in the relative timing of signals during female phonotaxis in the reed frog, *Hyperolius marmoratus*. *Anim. Behav.*, **48**, 679-685.
- Edwards, C. J. & Kelley, D. B. (2001). Auditory and lateral line inputs to the midbrain of an aquatic anuran: neuroanatomic studies in *Xenopus laevis*. *J. Comp. Neurol.*, **438**, 148-162.
- Elepfandt, A. (1996). Acoustic communication in shallow water: a field study on the clawed frog *Xenopus l. laevis*. *Bioacoustics*, **6**, 298-299.
- Elepfandt, A., Eistetter, I., Fleig, A., Guenther, E., Hainich, M., Hepperle, S. & Traub, B. (2000). Hearing threshold and frequency discrimination in the purely aquatic frog *Xenopus laevis laevis* (Pipidae): Measurement by means of conditioning. *J. Exp. Biol.*, **203**, 3621-3629.
- Elepfandt, A. (2002). Examination of underwater hearing and frequency discrimination in the clawed frog *Xenopus laevis laevis*. *Bioacoustics*, **12**, 174-176.
- Emerson, S. B. & Berrigan, D. (1993). Systematics of Southeast Asian ranids: multiple origins of voicelessness in the subgenus *Limnonectes* Fitzinger. *Herpetologica*, **49**, 22-31.
- Emerson, S. B. & Boyd, S. K. (1999). Mating vocalizations of female frogs: Control and evolutionary mechanisms. *Brain Behav. Evol.*, **53**, 187-197.
- Emerson, S. B. & Hess, D. L. (2001). Glucocorticoids, androgens, testis mass, and the energetics of vocalization in breeding male frogs. *Horm. Behav.*, **39**, 59-69.
- Endepols, H. & Walkowiak, W. (2001). Integration of ascending and descending inputs in the auditory midbrain of anurans. *J. Comp. Physiol. A.*, **186**, 1119-1133.
- Fay, R. R. & Popper, A. N., eds. (1999). *Comparative Hearing: Fish and Amphibians*. Springer-Verlag; New York.
- Fay, R. R. & Megela-Simmons, A. M. (1999). The sense of hearing in fishes and amphibians. In *Comparative Hearing: Fish and Amphibians* (R. R. Fay and A. N. Popper, eds.). Springer-Verlag; New York, pp. 269-318.
- Fischer, L., Catz, D. & Kelley, D. (1993). An androgen receptor mRNA isoform associated with hormone induced cell proliferation. *Proc. Natl. Acad. Sci. USA*, **90**, 8254-8258.
- Forester, D. C. & Thompson, K. J. (1998). Gauntlet behaviour as a male sexual tactic in the American toad (*Amphibia: Bufonidae*). *Behaviour*, **135**, 99-119.
- Forester, D. C., Lykens, D. V. & Harrison, W. K. (1988). The significance of persistent vocalisation by the spring peeper, *Pseudacris crucifer* (Anura: Hylidae). *Behaviour*, **108**, 197-208.
- Fox, J. H. (1993). *Augmentation and maximization of per-capita call active space through chorusing in anuran amphibians*. Ph.D. dissertation; University of Texas, Austin, Texas.
- Fox, J. H. (1995). Morphological correlates of auditory sensitivity in anuran amphibians. *Brain Behav. Evol.*, **45**, 327-338.
- Fox, J. H. (1992). Comparisons of call amplitude and auditory sensitivity in anuran amphibians. *Soc. Neurosci. Abstr.*, **18**, 882.
- Franzen, M. & Glaw, F. (1999). Distress call of *Mertensiella luschni finikensis* from Turkey (Amphibia: Salamandridae). *Zool. Middle East*, **19**, 27-32.
- Freedman, E. G., Ferragamo, M. & Simmons, A. M. (1988). Masking patterns in the bullfrog (*Rana catesbeiana*). II. Physiological effects. *J. Acoust. Soc. Am.*, **84**, 2081-2091.
- Frese, P. W. & Sullivan, A. M. (2000). *Rana areolata circulosa* (northern crayfish frog). Vocalization. *Herpetol. Rev.*, **31**, 101.
- Friedl, T. W. P. & Klump, G. M. (2002). The vocal behaviour of male European treefrogs (*Hyla arborea*): implications for inter- and intrasexual selection. *Behaviour*, **139**, 113-136.
- Fritsch, B. & Wake, M. H. (1988). The inner ear of gymnophione amphibians and its nerve supply: a comparative study of regressive events in a complex sensory system. *Zoomorphol.*, **108**, 210-217.
- Fritsch, B. & Wahnschaffe, U. (1987). Electron microscopical evidence for common inner ear and lateral-line efferents in urodeles. *Neurosci. Lett.*, **81**, 48-52.
- Fritsch, B. (1992). The water-to-land transition: Evolution of the tetrapod basilar papilla, middle ear, and auditory nuclei. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N.

- Popper, eds.). Springer Verlag; New York, pp. 351-376.
- Garcia-Rutledge, E. J. & Narins, P. M. (2001). Shared acoustic resources in an old world frog community. *Herpetologica*, **57**, 104-116.
- Gergus, E. W. A., Sullivan, B. K. & Malmos, K. B. (1997). Call variation in the *Bufo microscaphus* complex: Implications for species boundaries and the evolution of mate recognition. *Ethology*, **103**, 979-989.
- Gerhardt, H. C. (1994). Reproductive character displacement of female mate choice in the gray treefrog, *Hyla chrysoscelis*. *Anim. Behav.*, **47**, 959-969.
- Gerhardt, H. C. (1994). The evolution of vocalization in frogs and toads. *Annu. Rev. Ecol. Syst.*, **25**, 293-324.
- Gerhardt, H. C. (1993). Multiple causation of the evolution of acoustic signals used in courtship. *Etologia*, **3**, 151-169.
- Gerhardt, H. C. & Schul, J. (1999). A quantitative analysis of behavioral selectivity for pulse rise time in the gray treefrog, *Hyla versicolor*. *J. Comp. Physiol. A.*, **185**, 33-40.
- Gerhardt, H. C. (1995). Phonotaxis in female frogs and toads: execution and design of experiments. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhauser; Basel, pp. 209-220.
- Gerhardt, H. C., Dyson, M. L. & Tanner, S. D. (1996). Dynamic properties of the advertisement calls of gray tree frogs: patterns of variability and female choice. *Behav. Ecol.*, **7**, 7-18.
- Gerhardt, H. C. (1994). Selective responsiveness to long-range acoustic signals in insects and anurans. *Am. Zool.*, **34**, 706-714.
- Gerhardt, H. C. (1988). Acoustic properties used in call recognition by frogs and toads. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, T. Hetherington, M. Ryan, W. Wilczynski & W. Walkowiak, eds.). John Wiley; New York, pp. 455-483.
- Gerhardt, H. C., Dyson, M. L., Tanner, S. D. & Murphy, C. G. (1994). Female treefrogs do not avoid heterospecific calls as they approach conspecific calls: implications for mechanisms of mate choice. *Anim. Behav.*, **47**, 1323-1332.
- Gerhardt, H. C. & Doherty, J. A. (1988). Acoustic communication in the gray treefrog, *Hyla versicolor*: evolutionary and neurobiological implications. *J. Comp. Physiol.*, **162**, 261-278.
- Gerhardt, H. C. (1999). Reproductive character displacement and other sources of selection on acoustic communication systems. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 515-534.
- Gerhardt, H. C., Roberts, J. D., Bee, M. A. & Schwartz, J. J. (2000). Call matching in the quacking frog (*Crinia georgiana*). *Behav. Ecol. Sociobiol.*, **48**, 243-251.
- Gerhardt, H. C., Tanner, S. D., Corrigan, C. M. & Walton, H. C. (2000). Female preferences based on call duration in the gray treefrog (*Hyla versicolor*): influence of relative and absolute duration on preference strength. *Behav. Ecol.*, **11**, 663-669.
- Gerhardt, H. C. & Klump, G. M. (1987). Masking of acoustic signals by the chorus background noise in the green tree frog: a limitation on mate choice. *Anim. Behav.*, **36**, 1247-1249.
- Gerhardt, H. C. & Watson, G. F. (1995). Within-male variability in call properties and female preference in the grey treefrog. *Anim. Behav.*, **50**, 1187-1191.
- Giacoma, C., Zugolaro, C. & Beani, L. (1997). The advertisement calls of the green toad (*Bufo viridis*): variability and role in mate choice. *Herpetologica*, **53**, 454-464.
- Girgenrath, M. & Marsh, R. L. (1999). Power output of sound producing muscles in the tree frogs *Hyla versicolor* and *Hyla chrysoscelis*. *J. Exp. Biol.*, **202**, 3225-3238.
- Given, M. F. & McKay, D. M. (1990). Variation in citrate synthase activity in calling muscles of carpenter frogs, *Rana virgatipes*. *Copeia*, **1990**, 863-867.
- Given, M. F. (1993). Vocal interactions in *Bufo woodhousii fowleri*. *J. Herpetol.*, **27**, 447-452.
- Given, M. F. (1996). Intensity modulation of advertisement calls in *Bufo woodhousii fowleri*. *Copeia*, **1996**, 970-977.
- Given, M. F. (1993). Male response to female vocalizations in the carpenter frog, *Rana virgatipes*. *Anim. Behav.*, **46**, 1139-1149.
- Given, M. F. (1988). Growth rate and the cost of calling activity in male carpenter frogs, *Rana virgatipes*. *Behav. Ecol. Sociobiol.*, **22**, 153-160.
- Given, M. F. (1999). Frequency alteration of the advertisement call in the carpenter frog, *Rana virgatipes*. *Herpetologica*, **55**, 304-317.
- Grafe, T. U. (2001). Acoustic interactions among chorusing male anurans. *Adv. Ethol.*, **36**, 94.
- Grafe, T. U. & Thein, J. (2001). Energetics of calling and metabolic substrate use during prolonged exercise in the European treefrog *Hyla arborea*. *J. Comp. Physiol. B.*, 69-76.
- Grafe, U. (1997). Use of metabolic substrates in the gray treefrog *Hyla versicolor*: implications for calling behavior. *Copeia*, **1997**, 356-362.
- Grafe, T. U. (1996). The function of call alternation in the African reed frog (*Hyperolius marmoratus*): precise

- call timing prevents auditory masking. *Behav. Ecol. Sociobiol.*, **38**, 149-158.
- Grafe, T. U. (1995). Graded aggressive calls in the African painted reed frog *Hyperolius marmoratus* (Hyperoliidae). *Ethology*, **101**, 67-81.
- Grant, T., Bolivar-G., W. & Castro, F. (1998). The advertisement call of *Centrolene geckoideum*. *J. Herpetol.*, **32**, 452-455.
- Green, A. J. (1990). Determinants of chorus participation and the effects of size, weight and competition on advertisement calling in the tungara frog, *Physalaemus pustulosus* (Leptodactylidae). *Anim. Behav.*, **39**, 620-638.
- Greene, A. J. (1990). Determinants of chorus participation and the effects of size, weight, and competition on advertisement calling in the tungara frog, *Physalaemus pustulosus* (Leptodactylidae). *Anim. Behav.*, **39**, 620-638.
- Greenfield, M. D. & Rand, A. S. (2000). Frogs have rules: Selective attention algorithms regulate chorusing in *Physalaemus pustulosus* (Leptodactylidae). *Ethology*, **106**, 331-347.
- Greenfield, M. D. (1994). Synchronous and alternating choruses in insects and anurans: common mechanisms and diverse functions. *Am. Zool.*, **34**, 605-615.
- Guenther, R. & Ploetner, J. (1994). Morphometric, enzymological and bioacoustic studies in Italian water frogs (Amphibia, Ranidae). *Zoologica Poloniae*, **39**, 387-415.
- Guenther, R. & Ploetner, J. (1995). Morphometric, enzymological and bioacoustic studies in Italian water frogs (Amphibia, Ranidae). *Zoologica Poloniae*, **39**, 387-415.
- Haddad, C. F. B. & Giaretta, A. A. (1999). Visual and acoustic communication in the Brazilian torrent frog, *Hylodes asper* (Anura: Leptodactylidae). *Herpetologica*, **55**, 324-333.
- Hainfeld, C. A., Boatright-Horowitz, S. L., Boatright-Horowitz, S. S. & Simmons, A. M. (1996). Discrimination of phase spectra in complex sounds by the bullfrog, *Rana catesbeiana*. *J. Comp. Physiol. A.*, **179**, 75-87.
- Hall, J. C. (1994). Central processing of communication sounds in the anuran auditory system. *Am. Zool.*, **34**, 670-684.
- Hasegana, Y., Ueda, H. & Sumida, M. (1999). Clinal geographic variation in the advertisement call of the wrinkled frog, *Rana rugosa*. *Herpetologica*, **55**, 318-323.
- Hayes, T. B. & Menendez, K. P. (1999). The effect of sex steroids on primary and secondary sex differentiation in the sexually dichromatic reedfrog (*Hyperolius argus*: Hyperoliidae) from the Arabuko Sokoke Forest of Kenya. *Gen. Comp. Endocrinol.*, **115**, 188-199.
- Hellmann, B. & Fritzsche, B. (1996). Neuroanatomical and histochemical evidence for the presence of common lateral line and inner ear efferents and of efferents to the basilar papilla in a frog, *Xenopus laevis*. *Brain Behav. Evol.*, **47**, 185-194.
- Hetherington, T. E. (1989). Effect of the amphibian opercularis muscle on auditory responses. *Trends Vert. Morphol.*, **35**, 356-359.
- Hetherington, T. E. (1992). The effects of body size on the evolution of the amphibian middle ear. In *The Evolutionary Biology of Hearing* (A. Popper, D. Webster & R. Fay, eds.). Springer-Verlag; New York, pp. 421-437.
- Hetherington, T. E. (1994). The middle ear muscle of frogs does not modulate tympanic responses to sound. *J. Acoust. Soc. Am.*, **95**, 2122-2125.
- Hetherington, T. E. (1994). Sexual differences in the tympanic frequency responses of the American bullfrog (*Rana catesbeiana*). *J. Acoust. Soc. Am.*, **96**, 1186-1188.
- Hetherington, T. E. & Lindquist, E. D. (1999). Lung-based hearing in an "earless" anuran amphibian. *J. Comp. Physiol. A.*, **184**, 395-401.
- Hetherington, T. E. (1991). The effects of body size on the evolution of the amphibian middle ear. In *The Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag; New York, pp. 421-437.
- Heuwinkel, H. & Buenten, G. (1996). Hydroacoustical investigations on the frog *Pipa carvalhoi*. *Bioacoustics*, **6**, 317.
- Heyer, W. R. & Morales, V. R. (1995). The advertisement call of the leptodactylid frog *Leptodactylus griseigularis*. *Amphib-Reptilia*, **16**, 91-92.
- Heyer, W. R., Garcia-Lopez, J. M. & Cardoso, A. J. (1996). Advertisement call variation in the *Leptodactylus mystaceus* species complex (Amphibia: Leptodactylidae) with a description of a new sibling species. *Amphib-Reptilia*, **1996**, 7-31.
- Hoeglund, J. & Robertson, J. G. M. (1988). Chorusing behaviour, a density-dependent alternative mating strategy in male common toads (*Bufo bufo*). *Ethology*, **79**, 324-332.
- Hollis, D. M. (1996). Acoustic relationships of the California toad, *Bufo boreas halophilus* and the Yosemite toad, *Bufo canorus*: Vocalization and its role in natural hybridization. *Am. Zool.*, **36**, 93A.
- Howard, R. D. & Young, J. R. (1998). Individual variation in male vocal traits and female mating preferences in

- Bufo americanus*. *Anim. Behav.*, **55**, 1165-1179.
- Howard, R. D. & Palmer, J. G. (1995). Female choice in *Bufo americanus*: effects of dominant frequency and call order. *Copeia*, **1995**, 212-217.
- Hutchinson, J. M. C., McNamara, J. M. & Cuthill, I. C. (1993). Song, sexual selection, starvation and strategic handicaps. *Anim. Behav.*, **45**, 1153-1177.
- Ibanez, R. (1993). Female phonotaxis and call overlap in the Neotropical glass frog *Centrolenella granulosa*. *Copeia*, **1993**, 846-850.
- Jaslow, A. P., Hetherington, T. E. & Lombard, R. E. (1988). Structure and function of the amphibian middle ear. In *The Evolution of the Amphibian Auditory System* (B. Fritsch, M. Ryan, W. Wilczynski, T. E. Hetherington & W. Walkowiak, eds.). Wiley & Sons; New York, pp. 69-91.
- Jaslow, A. P. & Lombard, R. E. (1996). Hearing in the neotropical frog, *Atelopus chiriquiensis*. *Copeia*, **1996**, 428-432.
- Jehle, R. & Arak, A. (1998). Graded call variation in the Asian cricket frog *Rana nicobariensis*. *Bioacoustics*, **9**, 35-48.
- Jennions, M. D. & Backwell, P. R. Y. (1992). Chorus size influences on the anti-predator response of a Neotropical frog. *Anim. Behav.*, **44**, 990-992.
- Jennions, M. D., Bishop, P. J., Backwell, P. R. Y. & Passmore, N. I. (1995). Call rate variability and female choice in the African frog, *Hyperolius marmoratus*. *Behaviour*, **132**, 709-720.
- Jesu, R. & Schimmenti, G. (1997). First recording of the mating call of a burrowing frog from western Madagascar, *Scaphiophryne brevis* (Boulenger, 1896)(Anura: Microhylidae). *Bioacoustics*, **8**, 252-253.
- Joergensen, M. B. & Christensen-Dalsgaard, J. (1997). Directionality of auditory nerve fiber responses to pure tone stimuli in the grassfrog, *Rana temporaria*. II. Spike timing. *J. Comp. Physiol. A.*, **180**, 503-511.
- Joergensen, M. B., Schmitz, B. & Christensen-Dalsgaard, J. (1991). Biophysics of directional hearing in the frog *Eleutherodactylus coqui*. *J. Comp. Physiol. A.*, **168**, 223-232.
- Joergensen, M. B. & Kannevorff, M. (1997). Middle-ear transmission in the grass frog, *Rana temporaria*. *J. Comp. Physiol. A.*, **182**, 59-64.
- Joergensen, M. B. (1991). Comparative studies of the biophysics of directional hearing in anurans. *J. Comp. Physiol. A.*, **169**, 591-598.
- Joergensen, M. B. & Christensen-Dalsgaard, J. (1997). Directionality of auditory nerve fiber responses to pure tone stimuli in the grassfrog, *Rana temporaria*. I. Spike rate responses. *J. Comp. Physiol. A.*, **180**, 493-502.
- Judge, K. A. & Brooks, R. J. (2001). Chorus participation by male bullfrogs, *Rana catesbeiana*: a test of the energetic constraint hypothesis. *Anim. Behav.*, **62**, 849-861.
- Judge, K. A., Swanson, S. J. & Brooks, R. J. (2000). *Rana catesbeiana* (bullfrog). Female vocalization. *Herpetol. Rev.*, **31**, 236-237.
- Kadadevaru, G. G., Kanamadi, R. D. & Schneider, H. (2000). Advertisement call of two Indian ranids, *Indirana beddomii* and *Tomopterna rufescens*. *Amphibia-Reptilia*, **21**, 242-246.
- Kanamadi, R. D. & Hiremath, C. R. (1990). Vocalization and breeding period in the burrowing frog *Tomopterna breviceps*. *Environ. Ecol.*, **8**, 1055-1056.
- Kanamadi, R. D., Kadadevaru, G. G. & Schneider, H. (2001). Calling behaviour, bioacoustics and distribution of a rhacophorid frog, *Philautus variabilis* (Gunther, 1858). *Amphibia-Reptilia*, **22**, 365-372.
- Kanamadi, R. D., Hiremath, C. R. & Schneider, H. (1994). Advertisement calls of two anuran amphibians, *Rana tigrina* and *Tomopterna breviceps*. *J. Biosci.*, **19**, 75-80.
- Kanamadi, R. D. (1996). Acoustic communication in some Indian anurans: A review. *Zoos' Print*, **11**, 26-35.
- Kanamadi, R. D., Schneider, H., Hiremath, C. R. & Jirankali, C. S. (1993). Vocalization of the tree frog *Polypedates maculatus* (Rhacophoridae). *J. Biosci.* (Bangalore), **18**, 239-245.
- Kanamadi, R. D., Hiremath, C. R. & Schneider, H. (1993). The advertisement call of the South Indian frog *Ramanella variegata* (Microhylidae). *J. Herpetol.*, **27**, 218-219.
- Kasuya, E. & Shiobara, S. (1996). Variation in the advertisement call in the foam-nesting treefrog *Rhacophorus arboreus*. *Bioacoustics*, **7**, 1-11.
- Kasuya, E., Kobayashi, T., Ootaki, M., Oota, N. & Takada, A. (1997). Female preference for temporal features of vocalization in the Japanese treefrog, *Rhacophorus arboreus*. *J. Ethol.*, **15**, 103-108.
- Kaya, U. (2002). Responses to synthetic advertisement calls by lake frogs from western Anatolia. *Zool. Middl. East*, **25**, 27-35.
- Kaya, U. & Simmons, A. M. (1999). Advertisement calls of the tree frogs, *Hyla arborea* and *Hyla savignyi* (Anura: Hylidae) in Turkey. *Bioacoustics*, **10**, 175-190.
- Keddy-Hector, A., Wilczynski, W. & Ryan, M. J. (1993). Call patterns and basilar papilla tuning in cricket frogs. II. Intrapopulation variation and allometry. *Brain Behav. Evol.*, **39**, 238-246.
- Kelley, D. B. (1997). Generating sexually differentiated songs. *Curr. Opin. Neurobiol.*, **7**, 839-843.

- Kelley, D. B. & Dennison, J. (1990). The vocal motor neurons of *Xenopus laevis*: development of sex differences in axon number. *J. Neurobiol.*, **21**, 869-882.
- Kelley, D. B. & Tobias, M. L. (1999). Vocal communication in *Xenopus laevis*. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). The MIT Press, Cambridge, Massachusetts, pp. 9-35.
- Kelley, D. B. (1992). Opening and closing a hormone regulated period for the development of courtship song: a cellular and molecular analysis of vocal neuroeffectors. *Ann. New York Acad. Sci.*, **662**, 178-188.
- Kime, N. M., Rand, A. S., Kapfer, M. & Ryan, M. J. (1998). Consistency of female choice in the tungara frog: a permissive preference for complex characters. *Anim. Behav.*, **55**, 641-649.
- Klomberg, K. F. & Marler, C. A. (2000). The neuropeptide arginine vasotocin alters male call characteristics involved in social interactions in the grey treefrog, *Hyla versicolor*. *Anim. Behav.*, **59**, 807-812.
- Klump, G. M. (1996). Studying sound localization in frogs with behavioral methods. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay and W. C. Stebbins, eds.). Birkhaeuser Verlag; Basel, pp 221-233.
- Klump, G. M. & Gerhardt, H. C. (1992). Mechanisms and function of call-timing in male-male interactions in frogs. In *Playback and Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, 153-174.
- Klump, G. & Gerhardt, H. C. (1992). Mechanisms and function of call-timing in male-male interactions in frogs. In *Playback Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, pp. 153-174.
- Lance, S. L. & Wells, K. D. (1993). Are spring peeper satellite males physiologically inferior to calling males? *Copeia*, **1993**, 1162-1166.
- Lea, J., Dyson, M. & Halliday, T. (2001). Calling by male midwife toads stimulates females to maintain reproductive condition. *Anim. Behav.*, **61**, 373-377.
- Lea, J., Halliday, T. & Dyson, M. (2000). Reproductive stage and history affect the phonotactic preferences of female midwife toads, *Alytes muletensis*. *Anim. Behav.*, **60**, 423-427.
- Leary, C. J. & Razafindratsita, V. R. (1998). Attempted predation on a hylid frog, *Phrynohyas venulosa*, by an indigo snake, *Drymarchon corais*, and the response of conspecific frogs to distress calls. *Amphibia-Reptilia*, **19**, 442-446.
- Leary, C. J. (1999). Comparison between release vocalizations emitted during artificial and conspecific amplexus in *Bufo americanus*. *Copeia*, **1999**, 506-508.
- Leary, C. J. (2001). Evidence for convergent character displacement in release vocalizations of *Bufo fowleri* and *Bufo terrestris* (Anura; Bufonidae). *Anim. Behav.*, **61**, 431-438.
- Leary, C. J. (2001). Investigating opposing patterns of character displacement in release and advertisement vocalizations of *Bufo fowleri* and *Bufo americanus* (Anura; Bufonidae). *Can. J. Zool.*, **79**, 1577-1585.
- Levering, K. R., Nemeč, J. & Karasov, W. H. (2001). The impact of PCB 153 on male advertisement calling in *Rana pipiens*. *Ecol. Soc. Am. Ann. Meet. Abstr.*, **86**, 140-141.
- Lewis, E. R., Narins, P. M., Cortopassi, K. A., Yamada, W. M., Poinar, E. H., Moore, S. W. & Xu, X. (2001). Do male white-lipped frogs use seismic signals for intraspecific communication? *Am. Zool.*, **41**, 1185-1199.
- Lindquist, E. D., Hetherington, T. E. & Volman, S. F. (1998). Biomechanical and neurophysiological studies on audition in eared and earless harlequin frogs (*Atelopus*). *J. Comp. Physiol. A.*, **183**, 265-271.
- Lindquist, E. D. & Hetherington, T. E. (1996). Field studies on visual and acoustic signaling in the "earless" Panamanian golden frog, *Atelopus zeteki*. *J. Herpetol.*, **30**, 347-354.
- Littlejohn, M. J., Watson, G. F. & Wright, J. R. (1993). Structure of advertisement call of *Litoria ewingi* (Anura, Hylidae) introduced into New Zealand from Tasmania. *Copeia*, **1993**, 60-67.
- Littlejohn, M. J. (1988). Frog calls and speciation: the retrograde evolution of homogamic acoustic signaling systems in hybrid zones. In *The Evolution of the Amphibian Auditory System* (B. Frittsch, M. J. Ryan, W. Wilczynski, T. E. Hetherington & W. Walkowiak, eds.). John Wiley & Sons; New York, pp. 613-636.
- Littlejohn, M. J. (1998). Historical aspects of recording and analysis in anuran bioacoustics: 1954-1997. *Bioacoustics*, **9**, 69-80.
- Lode, T. & Pagano, A. (2000). Variations in call and morphology in male water frogs: taxonomic and evolutionary implications. *Compt. Rend. Acad. Sci. III, Sci. Vie*, **323**, 995-1001.
- Lode, T. (2001). Character convergence in advertisement call and mate choice in two genetically distinct water frog hybridogenetic lineages (*Rana kl esculenta*, *Rana kl grafi*). *J. Zool. Syst. Evol. Res.*, **39**, 91-96.
- Lucas, J. R., Howard, R. D. & Palmer, J. G. (1996). Callers and satellites: chorus behaviour in anurans as a stochastic dynamic game. *Anim. Behav.*, **51**, 501-518.
- Luddecke, H., Amezcuita, A., Bernal, X. & Guzman, F. (2000). Partitioning of vocal activity in a Neotropical highland frog community. *Stud. Neotrop. Fauna Envir.*, **35**, 185-194.

- Malkmus, R. & Riede, K. (1996). Bioacoustic data on *Megophrys baluensis* (Boulenger, 1899) and *Kalophrynus baluensis* Kiew, 1984, two rare frog species from Borneo (Anura: Pelobatidae, Microhylidae). *Herpetozoa*, **9**, 151-155 (German).
- Malkmus, R. (1995). Who calls here: Frog or cricket? *Sauria*, Berlin, **17**, 35-38 (German).
- Malkmus, R. & Riede, K. (1996). The tree frogs of the genus *Philautus* from Mount Kinabalu. Part I: Overview and the *aurifasciatus*-group with description of a new species (*Philautus saueri* sp. n.). *Sauria*, Berlin, **18(1)**, 27-37 (German).
- Malkmus, R. & Riede, K. (1996). The tree frogs of the genus *Philautus* from Mount Kinabalu. Part II: The *vermiculatus*-group with description of a new subspecies (*Philautus aurantium gunungensis* n. ssp.) and the *hosei*-group. *Sauria*, Berlin, **18(2)**, 21-28 (German).
- Malkmus, R. (1996). Observations on call activity of some frog species at Mount Kinabalu/northern Borneo. *Herpetofauna*, Weinstadt, **18**, 20-26 (German).
- Malmos, K. B., Sullivan, B. K. & Lamb, T. (2001). Calling behavior and directional hybridization between two toads (*Bufo microscaphus* x *B. woodhousii*) in Arizona. *Evolution*, **55**, 626-630.
- Malmos, K. B. (1992). *Morphology, mating calls, and allozymes of Bufo a. americanus and Bufo w. woodhousii from a hybrid zone in eastern Nebraska and western Iowa*. Master's thesis. University of Nebraska; Omaha.
- Marler, C. A., Chu, J. & Wilczynski, W. (1995). Arginine vasotocin injection increases probability of calling in cricket frogs, but causes call changes characteristic of less aggressive males. *Horm. Behav.*, **29**, 554-570.
- Marler, C. A. & Ryan, M. J. (1996). Energetic constraints and steroid hormone correlates of male calling behaviour in the tungara frog. *J. Zool.*, **240**, 397-409.
- Marquez, R., de la Riva, I. & Bosch, J. (1995). Advertisement calls of Bolivian Leptodactylidae (Amphibia, Anura). *J. Zool.*, **237**, 313-336.
- Marquez, R. & Bosch, J. (1995). Advertisement calls of the midwife toads *Alytes* (Amphibia, Anura, Discoglossidae) in continental Spain. *Z. Zool. Syst. Evol.-Forsch.*, **33**, 185-192.
- Marquez, R., Delariva, I. & Bosch, J. (1993). Advertisement calls of Bolivian species of *Hyla* (Amphibia, Anura, Hylidae). *Biotropica*, **25**, 426-443.
- Marquez, R. & Bosch, J. (1996). Advertisement call of the midwife toad from the Sierras Beticas *Alytes dickhillenii* Arntzen & Garcia-Paris, 1995 (Amphibia, Anura, Discoglossidae). *J. Herpetol.*, **6**, 9-14.
- Marquez, R. & Bosch, J. (1997). Male advertisement call and female preference in sympatric and allopatric midwife toads. *Anim. Behav.*, **54**, 1333-1345.
- Marquez, R., Pargana, J. M. & Crespo, E. G. (2001). Acoustic competition in male *Pelodytes ibericus* (Anura: Pelodytidae): Interactive playback tests. *Copeia*, **2001**, 1142-1150.
- Marquez, R. & Bosch, J. (1997). Female preference in complex acoustical environments in the midwife toads *Alytes obstetricans* and *Alytes cisternasii*. *Behav. Ecol.*, **8**, 588-594.
- Marquez, R. (1995). Female choice in the midwife toads (*Alytes obstetricans* and *A. cisternasii*). *Behaviour*, **132**, 152-161.
- Marsh, R. L. (1999). Contractile properties of muscles used in sound production and locomotion in two species of gray tree frog. *J. Exp. Biol.*, **202**, 3215-3223.
- Matsue, M. (1995). Calls produced by a "voiceless" frog, *Rana blythi* Boulenger 1920, from Peninsular Malaysia (Amphibia Anura). *Tropical Zool.*, **2**, 325-331.
- Matsui, M., Yong, H.-S., Araya, K. & Hamid, A. A. (1996). Acoustic characteristics and systematic relationships of arboreal microhylid frogs of the genus *Metaphrynella* from Malaysia. *J. Herpetol.*, **30**, 424-427.
- Matsui, M. & Wu, G.-F. (1994). Acoustic characteristics of treefrogs from Sichuan, China, with comments on systematic relationship of *Polypedates* and *Rhacophorus* (Anura, Rhacophoridae). *Zool. Sci.*, **11**, 485-490.
- Matsui, M., Chan-Ard, T. & Nabhitabhata, J. (1996). Distinct specific status of *Kalophrynus pleurostigma interlineatus* (Anura, Microhylidae). *Copeia*, **1996**, 440-445.
- Matsui, M. (1997). Call characteristics of Malaysian *Leptolalax* with a description of two new species (Anura: Pelobatidae). *Copeia*, **1997**, 158-165.
- Matsui, M. (1995). Calls produced by a "voiceless" frog, *Rana blythi* Boulenger 1920, from Peninsular Malaysia (Amphibia Anura). *Tropical Zool.*, **8**, 325-331.
- Matsui, M., Wu, G. F. & Yong, H. S. (1993). Acoustic characteristics of three species of the genus *Amolops* (Amphibia, Anura, Ranidae). *Zool. Sci.*, **10**, 691-695.
- McClelland, E. & Wilczynski, W. (1992). Central and peripheral sex dimorphisms in male and female cricket frogs *Acris crepitans*. *Soc. Neurosci. Abstr.*, **18**, 882.
- McClelland, B. E., Wilczynski, W. & Ryan, M. J. (1997). Intraspecific variation in laryngeal and ear morphology in male cricket frogs (*Acris crepitans*). *Biol. J. Linn. Soc.*, **63**, 51-67.
- McClelland, B. E., Wilczynski, W. & Rand, A. S. (1997). Sexual dimorphism and species differences in the

- neurophysiology and morphology of the acoustic communication system of two neotropical hylids. *J. Comp. Physiol. A.*, **180**, 451-462.
- McCormick, C. A. (1992). Evolution of central auditory pathways in anamniotes. In *The Evolutionary Biology of Hearing* (D. Webster, R. Fay & A. Popper, eds.). Springer; New York.
- McKeon, C. S. & Baggallay, T. A. d. (2001). Anura: *Atelopus tricolor* (Three-colored subfoot toad). Nocturnal calling. *Herpetol. Rev.*, **32**, 247.
- McLister, J. D. (2001). Physical factors affecting the cost and efficiency of sound production in the treefrog *Hyla versicolor*. *J. Exp. Biol.*, **204**, 69-80.
- McLister, J. D. (1996). Call energetics and the evolution of mating calls within the grey treefrog complex. *Am. Zool.*, **36**, 94A.
- McLister, J. D. & Bogart, J. P. (1995). Laryngeal morphology and the evolution of mating calls in the gray treefrog complex. *Am. Zool.*, **35**, 16A.
- Michael, S. F. (1996). Courtship calls of three species of *Eleutherodactylus* from Puerto Rico (Anura: Leptodactylidae). *Herpetologica*, **52**, 116-120.
- Mohr, S. & Schneider, H. (1993). Analysis of the call pacemaker of the Chinese fire-bellied toad, *Bombina orientalis* (Boulenger, 1890)(Amphibia, Anura), and its operation during auditory stimulation. *Zool. Jahrb. Abt. Allg. Zool. Physiol. Tiere*, **97**, 215-231.
- Moraels, V. R. & Chandler, M. (1992). First record of *Pseudis paradoxa* (Anura, Pseudidae) in Peru with notes on its distress call and habitat. *Caribb. J. Sci.*, **28**, 224-226.
- Murphy, C. G. (1994). The determinants of chorus tenure in barking treefrogs (*Hyla gratiosa*). *Behav. Ecol. Sociobiol.*, **34**, 285-294.
- Murphy, C. G. (1999). Nightly timing of chorusing by male barking treefrogs (*Hyla gratiosa*): The influence of female arrival and energy. *Copeia*, **1999**, 333-347.
- Murphy, C. G. & Gerhardt, H. C. (1996). Evaluating the design of mate-choice experiments: the effect of amplexus on mate choice by female barking treefrogs, *Hyla gratiosa*. *Anim. Behav.*, **51**, 881-890.
- Murphy, C. G. (1994). Chorus tenure of male barking treefrogs, *Hyla gratiosa*. *Anim. Behav.*, **48**, 763-777.
- Narins, P. M. (1992). Evolution of anuran chorus behavior: Neural and behavioral constraints. *Am. Natur.*, **139**, 90-104.
- Narins, P. M. (1995). Frog communication. *Sci. Am.*, **Aug.**, 62-67.
- Narins, P. M., Benedix, J. H. & Moss, F. (1997). Does stochastic resonance play a role in hearing? In *Diversity in Auditory Mechanisms* (E. R. Lewis, G. R. Long, R. F. Lyons, P. M. Narins and C. R. Steele, eds.). World Scientific; Singapore, pp. 83-90.
- Narins, P. M., Ehret, G. & Tautz, J. (1988). Accessory pathway for sound transfer in a neotropical frog. *Proc. Natl. Acad. Sci. USA*, **85**, 1508-1512.
- Narins, P. M. (1992). Biological constraints on anuran acoustic communication: auditory capabilities of naturally behaving animals. In *The Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay and A. N. Popper, eds.). Springer; Berlin, pp. 439-454.
- Narins, P. M., Lewis, E. R. & McClelland, B. E. (2000). Hyperextended call note repertoire of the endemic Madagascar treefrog *Boophis madagascariensis* (Rhacophoridae). *J. Zool.*, **250**, 283-298.
- Narins, P. M. & Zelick, R. (1988). The effects of noise on auditory processing and behavior in amphibians. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, W. Wilczynski, M. J. Ryan, T. Hetherington & W. Walkowiak, eds.). Wiley; New York, pp. 511-536.
- Narins, P. M., Lewis, E. R., Purgue, A. P., Bishop, P. J., Minter, L. R. & Lawson, D. P. (2001). Functional consequences of a novel middle ear adaptation in the central African frog *Petropedetes parkeri* (Ranidae). *J. Exp. Biol.*, **204**, 1223-1232.
- Navas, C. A. & Bevier, C. R. (2001). Thermal dependency of calling performance in the eurythermic frog *Colostethus subpunctatus*. *Herpetologica*, **57**, 384-395.
- Navas, C. A. (1996). The effect of temperature on the vocal activity of tropical anurans: A comparison of high and low-elevation species. *J. Herpetol.*, **30**, 488-497.
- Navas, C. A. (1996). Thermal dependency of field locomotor and vocal performance of high-elevation anurans in the tropical Andes. *J. Herpetol.*, **30**, 478-487.
- Osborne, W. S. & McElhinney, N. A. (1996). Status, habitat and preliminary observations on calling of the green and golden frog *Litoria aurea* on Bowen Island, Jervis Bay National Park. *Aust. Zool.*, **30**, 218-223.
- Ovaska, K. E. & Caldbeck, J. (1997). Vocal behaviour of the frog *Eleutherodactylus antillensis* on the British Virgin Islands. *Anim. Behav.*, **54**, 181-188.
- Ovaska, K. E. & Caldbeck, J. (1999). Courtship call of the frog *Eleutherodactylus schwartzi* from the British Virgin Islands. *J. Herpetol.*, **33**, 501-503.
- Ovaska, K. & Caldbeck, J. (1997). Courtship behavior and vocalizations of the frogs *Eleutherodactylus antillensis* and *cochranae* on the British Virgin Islands. *J. Herpetol.*, **33**, 149-155.
- Owen, P. C. & Perrill, S. A. (2000). Habituation and neighbor-stranger discrimination in green frogs: a reply to

- Bee and Schachtman. *Behav. Ecol. Sociobiol.*, **48**, 169-171.
- Paez, V. P., Bock, B. C. & Rand, A. S. (1993). Inhibition of evoked calling of *Dendrobates pumilio* due to acoustic interference from cicada calling. *Biotropica*, **25**, 242-245.
- Palis, J. G. (2000). *Rana sphenoccephala* (southern leopard frog). Subterranean vocalization. *Herpetol. Rev.*, **31**, 42.
- Penna, M. (1997). Selectivity of evoked vocal responses in the time domain by frogs *Batrachyla* (Leptodactylidae). *J. Herpetol.*, **31**, 202-217.
- Penna, M. & Solis, R. (1996). Influence of burrow acoustics on sound reception by frogs *Eupsophus* (Leptodactylidae). *Anim. Behav.*, **51**, 255-263.
- Penna, M. & Solis, R. (1998). Frog call intensities and sound propagation in the South American temperate forest region. *Behav. Ecol. Sociobiol.*, **42**, 371-381.
- Penna, M., Feng, A. S. & Narins, P. M. (1997). Temporal selectivity of evoked vocal responses of *Batrachyla antartandica* (Amphibia, Leptodactylidae). *Anim. Behav.*, **54**, 833-848.
- Penna, M., Lin, W.-Y. & Feng, A. S. (1997). Temporal selectivity for complex signals by single neurons in the torus semicircularis of *Pleurodema thaul* (Amphibia-Leptodactylidae). *J. Comp. Physiol. A.*, **180**, 313-328.
- Penna, M. & Solis, R. (1999). Extent and variation of sound enhancement inside burrows of the frog *Eupsophus emiliopugini* (Leptodactylidae). *Behav. Ecol. Sociobiol.*, **47**, 94-103.
- Penna, M. (1997). Sound reception by burrowing frogs *Eupsophus* (Leptodactylidae). *Adv. Ethol.*, **32**, 119.
- Perez, J., Cohen, M. A. & Kelley, D. B. (1996). Androgen receptor mRNA expression in *Xenopus laevis* CNS: Sexual dimorphism and regulation in laryngeal motor nucleus. *J. Neurobiol.*, **30**, 556-568.
- Perez, L. G. & Heyer, W. R. (1993). Description of the advertisement call and resolution of the systematic status of *Leptodactylus gracilis delattini* Muller 1968 (Amphibia, Leptodactylidae). *Proc. Biol. Soc. Wash.*, **106**, 51-56.
- Perrill, S. A. (1988). Does the female northern cricket frog (*Acris crepitans*) discriminate male advertisement calls based on frequency (pitch) differences? *Indiana Acad. Sci.*, **98**, 172.
- Perrill, S. A. & Lower, L. C. (1994). Advertisement call discrimination by female cricket frogs. *J. Herpetol.*, **28**, 399-400.
- Phelps, S. M. & Ryan, M. J. (2000). History influences signal recognition: neural network models of tungara frogs. *Proc. Roy. Soc. Lond. B.*, **267**, 1633-1639.
- Platz, J. E. (1993). *Rana subaquavocalis*: a remarkable new species of leopard frog (*Rana pipiens* complex) from southeastern Arizona that calls under water. *J. Herpetol.*, **27**, 154-162.
- Prestwich, K. N. (1994). The energetics of acoustic signalling in anurans and insects. *Am. Zool.*, **34**, 625-643.
- Purgue, A. P. & Narins, P. M. (2000). A model for energy flow in the inner ear of the bullfrog (*Rana catesbeiana*). *J. Comp. Physiol. A.*, **186**, 489-495.
- Purgue, A. (1997). Tympanic sound radiation in the bullfrog *Rana catesbeiana*. *J. Comp. Physiol. A.*, **181**, 438-445.
- Purgue, A. P. & Narins, P. M. (2000). Mechanics of the inner ear of the bullfrog (*Rana catesbeiana*): the contact membranes and the periotic canal. *J. Comp. Physiol. A.*, **186**, 481-488.
- Rand, A. S. & Dudley, R. (1993). Frogs in helium: the anuran vocal sac is not a cavity resonator. *Physiol. Zool.*, **66**, 793-806.
- Rand, A. S. (1988). An overview of anuran acoustic communication. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, M. Ryan, W. Wilczynski, T. Hetherington & W. Walkowiak, eds.). Wiley; New York, pp. 415-431.
- Rand, A. S. (1997). Frog choruses as leks. *Adv. Ethol.*, **32**, 42.
- Resetarits, W. J. & Wilbur, H. M. (1991). Calling site choice by *Hyla chrysoscelis*: effect of predators, competitors, and oviposition sites. *Ecology*, **72**, 778-786.
- Ressel, S. J. (2001). Ultrastructural design of anuran muscles used for call production in relation to the thermal environment of a species. *J. Exp. Biol.*, **204**, 1445-1457.
- Riede, K. (1997). Bioacoustic diversity and resource partitioning in tropical calling communities. In *Tropical Biodiversity and Systematics* (H. Ulrich, ed.). Zoologisches Forschungsinstitut und Museum Alexander Koenig; Bonn, pp. 275-280.
- Riva, I. de la, Marquez, R. & Bosch, J. (1995). Advertisement calls of eight Bolivian hylids (Amphibia, Anura). *J. Herpetol.*, **29**, 113-118.
- Riva, I. de la, Marquez, R. & Bosch, J. (1996). Advertisement calls of four microhylid frogs from Bolivia (Amphibia, Anura). *Am. Midl. Nat.*, **136**, 418-422.
- Riva, I. de la, Marquez, R. & Bosch, J. (1996). The advertisement calls of three South American poison frogs (Amphibia: Anura: Dendrobatidae), with comments on their taxonomy and distribution. *J. Nat. Hist.*, **30**, 1413-1420.
- Roberts, J. D. & Wardell-Johnson, G. (1995). Call differences between peripheral isolates of the *Geocrinia rosea*

- complex (Anura: Myobatrachidae) in Southwestern Australia. *Copeia*, **1995**, 899-906.
- Roberts, J. D. (1997). Call evolution in *Neobatrachus* (Anura: Myobatrachidae): Speculations on tetraploid origins. *Copeia*, **1997**, 791-801.
- Roberts, J. D. (1997). Geographic variation in calls of males and determination of species boundaries in tetraploid frogs of the Australian genus *Neobatrachus* (Myobatrachidae). *Aust. J. Zool.*, **45**, 95-112.
- Roberts, J. D. (1993). Hybridisation between the western and northern call races of the *Limnodynastes tasmaniensis* complex (Anura, Myobatrachidae) on the Murray River in south Australia. *Aust. J. Zool.*, **41**, 101-122.
- Robertson, J. C., Watson, J. T. & Kelley, D. B. (1994). Androgen directs sexual differentiation of laryngeal innervation in developing *Xenopus laevis*. *J. Neurobiol.*, **25**, 1625-1636.
- Roesli, M. & Reyer, H.-U. (2000). Male vocalization and female choice in the hybridogenetic *Rana lessonae/Rana esculenta* complex. *Anim. Behav.*, **60**, 745-755.
- Rose, G. J. & Brenowitz, E. A. (1997). Plasticity of aggressive thresholds in *Hyla regilla*: discrete accommodation to encounter calls. *Anim. Behav.*, **53**, 353-361.
- Roy, D. (1997). Communication signals and sexual selection in amphibians. *Current Science*, **72**, 923-927.
- Roy, D. (1997). Acoustic communication in amphibians of northeast India. *Adv. Ethol.*, **32**, 131.
- Roy, D. & Elepfandt, A. (1993). Bioacoustic analysis of frog calls from northeast India. *J. Biosci.*, **18**, 381-393.
- Roy, D., Borah, B. & Sarma, A. (1995). Analysis and significance of female reciprocal call in frogs. *Curr. Sci.*, **69**, 265-270.
- Roy, D. (1996). Importance of bioacoustic analysis in amphibian taxonomy and conservation. *Zoos' Print*, **11**, 22-25.
- Ruel, T. D., Kelley, D. B. & Tobias, M. L. (1997). Facilitation at the sexually differentiated laryngeal synapse of *Xenopus laevis*. *J. Comp. Physiol. A.*, **182**, 35-42.
- Runkle, L. S., Wells, K. D., Robb, C. C. & Lance, S. L. (1994). Individual, nightly, and seasonal variation in calling behavior of the gray treefrog, *Hyla versicolor*: implications for energy expenditure. *Behav. Ecol.*, **5**, 318-325.
- Runkle, L. S., Wells, K. D., Robb, C. C. & Lance, S. L. (1993). Individual, nightly, and seasonal variation in calling behavior of the gray tree frog, *Hyla versicolor*. *Behav. Ecol.*, **5**, 318-325.
- Ryan, M. J. & Rand, A. S. (1993). Species recognition and sexual selection as a unitary problem in animal communication. *Evolution*, **47**, 647-657.
- Ryan, M. J. & Rand, A. S. (1993). Sexual selection and signal evolution: the ghost of biases past. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 187-195.
- Ryan, M. J. & Rand, A. S. (1995). Female responses to ancestral advertisement calls in tungara frogs. *Science*, **269**, 390-392.
- Ryan, M. J., Warkentin, K. M., McClelland, B. E. & Wilczynski, W. (1995). Fluctuating asymmetries and advertisement call variation in the cricket frog, *Acris crepitans*. *Behav. Ecol.*, **6**, 124-131.
- Ryan, M. J. & Rand, A. S. (1999). Phylogenetic influence on mating call preferences in female tungara frogs, *Physalaemus pustulosus*. *Anim. Behav.*, **57**, 945-956.
- Ryan, M. J., ed. (2001). *Recent Advances in Anuran Communication*. Smithsonian Institution Press; Washington, D. C.
- Ryan, M. J. & Rand, A. S. (1998). Evoked vocal response in male tungara frogs: pre-existing biases in male responses? *Anim. Behav.*, **56**, 1509-1516.
- Ryan, M. J. & Wilczynski, W. (1988). Coevolution of sender and receiver: effect on local mate preference in cricket frogs. *Science*, **240**, 1786-1788.
- Ryan, M. J. & Sullivan, B. K. (1989). Transmission effects on temporal structure in the advertisement calls of two toads, *Bufo woodhousii* and *Bufo valliceps*. *Ethology*, **80**, 182-189.
- Ryan, M. J. (1988). Constraints and patterns in the evolution of anuran acoustic communication. In *The Evolution of the Amphibian Auditory System* (B. Frittsch, M. J. Ryan, W. Wilczynski, T. E. Hetherington & W. Walkowiak, eds.). John Wiley & Sons; New York, pp. 637-678.
- Ryan, M. J. & Rand, A. S. (1999). Phylogenetic inference and the evolution of communication in tungara frogs. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 535-557.
- Ryan, M. J., Cocroft, R. B. & Wilczynski, W. (1990). The role of environmental selection in intraspecific divergence of mate recognition signals in the cricket frog, *Acris crepitans*. *Evolution*, **44**, 1869-1872.
- Ryan, M. J. & Rand, A. S. (1993). Phylogenetic patterns of behavioral mate recognition systems in the *Physalaemus pustulosus* species group (Anura: Leptodactylidae): the role of ancestral and derived characters and sensory exploitation. In *Evolutionary Patterns and Processes* (D. Lees and D. Edwards, eds.). Academic Press; New York, pp. 251-267.
- Ryan, M. J., Rand, A. S. & Weigt, L. A. (1996). Allozyme and advertisement call variation in the tungara frog, *Physalaemus pustulosus*. *Evolution*, **50**, 2435-2453.

- Sanchez-Herrera, M. J., Marquez, R., Barbadillo, L. J. & Bosch, J. (1995). Mating calls of three species of anurans from Borneo. *Herpet. J.*, **5**, 293-297.
- Schlaepfer, M. A. & Figueroa-Sandi, R. (1998). Female reciprocal calling in a Costa Rican leaf-litter frog, *Eleutherodactylus podiciferus*. *Copeia*, **1998**, 1076-1080.
- Schmidt, R. S. (1992). Neural correlates of frog calling: production by two semi-independent generators. *Behav. Brain Res.*, **50**, 17-30.
- Schneider, H. (1997). Calls and reproductive behaviour of the water frogs of Damascus, Syria (Amphibia: Anura: *Rana bedriagae* Camerano, 1882). *Zool. Middle East*, **15**, 51-66.
- Schneider, H. & Sinsch, U. (1999). Taxonomic reassessment of Middle Eastern water frogs: Bioacoustic variation among populations considered as *Rana ridibunda*, *R. bedriagae* or *R. levantina*. *J. Zool. Syst. Evol. Res.*, **37**, 57-66.
- Schneider, H., Hussein, F. & Akef, M. S. A. (1986). Comparative bioacoustic studies in the yellow-bellied toad, *Bombina variegata* (L.), and relationships of European and Asian species and subspecies of the genus *Bombina* (Anura, Amphibia). *Bonn. Zool. Beitr.*, **37**, 49-67.
- Schneider, H., Sinsch, U. & Sofianidou, T. S. (1993). The water frogs of Greece: bioacoustic evidence for a new species. *Z. Zool. Syst. Evolutionsforsch.*, **31**, 47-63.
- Schneider, H. & Haxhiu, I. (1994). Mating-call analysis and taxonomy of the water frogs in Albania (Anura: Ranidae). *Zool. Jb. Syst.*, **121**, 248-262.
- Schneider, H. (1988). Bioacoustical studies on Mediterranean hylids. *Z. Vergl. Physiol.*, **61**, 369-385 (German).
- Schneider, H. & Sinsch, U. (1991). Mating call variation in lake frogs referred to as *Rana ridibunda*. *Z. Zool. Syst. Evolut.-Forsch.*, **30**, 297-315.
- Schneider, H. & Sofianidou, T. S. (1993). The water frogs of Greece - bioacoustic evidence for a new species. *Z. Zool. Syst. Evolut.-Forsch.*, **31**, 47-63.
- Schneider, H. (1997). Call behaviour and calls of the lake frog *Rana ridibunda* Pallas, 1771, in West-Kasachstan. *Herpetofauna*, **19**, 189-202 (German).
- Schneider, H. (1992). Bioacoustics of ranids. Call analyses and meanings for systematics. *Biologie in unserer Zeit*, **22**, 342-349 (German).
- Schneider, H. (1999). Calls of the Levantine frog, *Rana bedriagae*, at Birket Ata, Israel (Amphibia: Anura). *Zool. Middle East*, **19**, 101-116.
- Schwartz, J. J. & Gerhardt, H. C. (1998). The neuroethology of frequency preferences in the spring peeper. *Anim. Behav.*, **56**, 55-69.
- Schwartz, J. J., Buchanan, B. W. & Gerhardt, H. C. (2001). Female mate choice in the gray treefrog (*Hyla versicolor*) in three experimental environments. *Behav. Ecol. Sociobiol.*, **49**, 443-455.
- Schwartz, J. J. (1993). Male calling behavior, female discrimination, and acoustic interference in the Neotropical tree frog *Hyla microcephala* under realistic acoustic conditions. *Behav. Ecol. Sociobiol.*, **32**, 401-414.
- Schwartz, J. J. (1991). Why stop calling? Unison bout singing in a neotropical treefrog. *Anim. Behav.*, **42**, 565-577.
- Schwartz, J. J. (1986). Male calling Behaviour and female choice in the neotropical treefrog *Hyla microcephala*. *Ethology*, **73**, 116-127.
- Schwartz, J. J. (1994). Male advertisement and female choice in frogs: new findings and recent approaches to the study of communication in a dynamic acoustic environment. *Am. Zool.*, **34**, 616-625.
- Schwartz, J. J., Ressel, S. J. & Bevier, C. R. (1995). Carbohydrate and calling: Depletion of muscle glycogen and the chorusing dynamics of the neotropical treefrog *Hyla microcephala*. *Behav. Ecol. Sociobiol.*, **37**, 125-135.
- Schwartz, J. J. (2001). Call monitoring and interactive playback systems in the study of acoustic interactions among male anurans. In *Recent Advances in Anuran Communication* (M. J. Ryan, ed.). Smithsonian Institution Press; Washington, D. C., pp. 183-204.
- Schwartz, J. J., Bee, M. A. & Tanner, S. D. (2000). A behavioral and neurobiological study of the responses of gray treefrogs, *Hyla versicolor*, to the calls of a predator, *Rana catesbeiana*. *Herpetologica*, **56**, 27-37.
- Seidel, B., Yamashita, M., Choi, I. H. & Dittami, J. (2001). Water wave communication in the genus *Bombina* (Amphibia). *Adv. Space Res.*, **28**, 589-594.
- Semsar, K., Klomberg, K. F. & Marler, C. (1998). Arginine vasotocin increases calling-site acquisition by nonresident male grey treefrogs. *Anim. Behav.*, **56**, 983-987.
- Simmitti, S. J. (1999). Individual variation in morphological, physiological, and biochemical features associated with calling in spring peepers (*Pseudacris crucifer*). *Phys. Biochem. Zool.*, **72**, 666-676.
- Simmons, A. M., Buxbaum, R. C. & Mirin, M. P. (1993). Perception of complex sounds by the green treefrog, *Hyla cinerea*: Envelope and fine-structure cues. *J. Comp. Physiol. A.*, **173**, 321-327.
- Simmons, A. M., Sanderson, M. I. & Garabedian, C. E. (2000). Representation of waveform periodicity in the auditory midbrain of the bullfrog, *Rana catesbeiana*. *J. Assoc. Res. Otolaryngol.*, **1**, 2-24.
- Simmons, A. M. & Bean, M. E. (2000). Perception of mistuned harmonics in complex sounds by the bullfrog

- (*Rana catesbeiana*). *J. Comp. Psychol.*, **114**, 167-173.
- Sinsch, U. & Eblenkamp, B. (1994). Allozyme variation among *Rana balcanica*, *R. levantina*, and *R. ridibunda* (Amphibia, Anura): Genetic differentiation corroborates the bioacoustically detected species status. *Z. Zool. Syst. Evolutionsforsch.*, **32**, 35-43.
- Sinsch, U. & Schneider, H. (1996). Bioacoustic assessment of the taxonomic status of pool frog populations (*Rana lessonae*) with reference to a topotypical population. *Z. Zoo. Syst. Evol. Research*, **34**, 63-73.
- Smith, K. G. & Barichivich, W. J. (2001). Caudata: *Plethodon jordani* (Jordan's salamander). Vocalization. *Herpetol. Rev.*, **32**, 246-247.
- Smotherman, M. S. & Narins, P. M. (1999). The electrical properties of auditory hair cells in the frog amphibian papilla. *J. Neurosci.*, **19**, 5275-5292.
- Solis, R. (1997). Individual and endocrine factors affecting the vocal behaviour of frogs *Pleurodema thaul*. *Adv. Ethol.*, **32**, 66.
- Solis, R. & Penna, M. (1997). Testosterone levels and evoked vocal responses in a natural population of the frog *Batrachyla taeniata*. *Horm. Behav.*, **31**, 101-109.
- Stewart, M. M. & Bishop, P. J. (1994). Effects of increased sound level of advertisement calls on calling male frogs, *Eleutherodactylus coqui*. *J. Herpetol.*, **28**, 46-53.
- Stiebler, I. B. & Narins, P. M. (1990). Temperature-dependence of auditory nerve response properties in the frog. *Hear. Res.*, **46**, 63-82.
- Sullivan, B. K. (1992). Calling behavior of the southwestern toad (*Bufo microscaphus*). *Herpetologica*, **1992**, 383-389.
- Sullivan, B. K., Malmos, K. B., Gergus, E. W. A. & Bowker, R. W. (2000). Evolutionary implications of advertisement call variation in *Bufo debilis*, *B. punctatus*, and *B. retiformis*. *J. Herpetol.*, **34**, 368-374.
- Sullivan, B. K., Malmos, K. B. & Given, M. F. (1996). Systematics of the *Bufo woodhousii* complex (Anura: Bufonidae): Advertisement call variation. *Copeia*, **1996**, 274-280.
- Tada, I. E. di, Martino, A. & Sinsch, U. (2001). Release vocalizations in neotropical toads (*Bufo*): Ecological constraints and phylogenetic implications. *J. Zool. Syst. Evol. Res.*, **39**, 13-23.
- Tejedo, M. (1993). Do male natterjack toads join larger breeding choruses to increase mating success? *Copeia*, **1993**, 75-80.
- Tejedo, M. (1992). Large male mating advantage in natterjack toads, *Bufo calamita*: sexual selection or energetic constraints? *Anim. Behav.*, **44**, 557-569.
- Tito, M. B., Hoover, M. A., Mingo, A. M. & Boyd, S. K. (1999). Vasotocin maintains multiple call types in the gray treefrog, *Hyla versicolor*. *Horm. Behav.*, **36**, 166-175.
- Tobias, M., Viswanathan, S. & Kelley, D. (1998). Rapping, a female receptive call, initiates male-female duets in the South African clawed frog. *Proc. Natl. Acad. Sci. USA*, **95**, 1870-1875.
- Tobias, M. L., Marin, M. L. & Kelley, D. B. (1991). Development of functional sex differences in the larynx of *Xenopus laevis*. *Dev. Biol.*, **147**, 251-259.
- Tobias, M. L., Marin, M. L. & Kelley, D. B. (1993). The roles of sex, innervation, and androgen in laryngeal muscle of *Xenopus laevis*. *J. Neurosci.*, **13**, 324-333.
- Ueda, H. (1993). Mating calls of autotriploid and autotetraploid males in *Hyla japonica*. *Sci. Rep. Lab. Amphib. Biol. Hiroshima Univ.*, **12**, 177-189.
- Ueda, H. (1994). Mating calls of the pond frog species distributed in the far east and their artificial hybrids. *Sci. Rep. Lab. Amphib. Biol. Hiroshima Univ.*, **13**, 197-232.
- Vences, M. & Glaw, F. (1996). Further investigations on *Discoglossus* bioacoustics: Relationships between *D. galganoi galganoi*, *D. g. jeanneae* and *D. pictus scovazzi*. *Amphib-Reptilia*, **17**, 333-340.
- Wagner, W. E. (1989). Fighting, assessment, and frequency alteration in Blanchard's cricket frog. *Behav. Ecol. Sociobiol.*, **25**, 429-436.
- Wagner, W. J. Jr. (1991). *Social selection on male calling behavior in Blanchard's Cricket Frog*. Ph.D. thesis. University of Texas at Austin.
- Wagner, W. J. Jr. (1989). Social correlates of variation in male calling behaviour in Blanchard's cricket frog, *Acris crepitans blanchardi*. *Ethology*, **30**, 27-45.
- Wagner, W. E., Jr. & Sullivan, B. K. (1995). Sexual selection in the Gulf Coast toad, *Bufo valliceps*: female choice based on variable characters. *Anim. Behav.*, **49**, 305-319.
- Walkowiak, W. & Luksch, H. (1994). Sensory motor interfacing in acoustic behavior of anurans. *Am. Zool.*, **34**, 685-695.
- Walkowiak, W. (1988). Central temporal encoding. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, W. Wilczynski, M. J. Ryan & W. Walkowiak, eds.). John Wiley; New York, pp. 275-294.
- Wang, J. & Narins, P. M. (1996). Directional masking of phase locking in the amphibian auditory nerve. *J. Acoust. Soc. Am.*, **99**, 1611-1620.
- Wang, J., Ludwig, T. A. & Narins, P. M. (1996). Spatial and spectral dependence of the auditory periphery in the northern leopard frog. *J. Comp. Physiol. A.*, **178**, 159-172.

- Watson, J. T., Robertson, J., Sachdev, U. & Kelley, D. B. (1993). Laryngeal muscle and motor neuron plasticity in *Xenopus laevis*: testicular masculinization of a developing neuromuscular system. *J. Neurobiol.*, **24**, 1615-1625.
- Welch, A. M., Semlitsch, R. D. & Gerhardt, H. C. (1998). Call duration as an indicator of genetic quality in male gray tree frogs. *Science*, **280**, 1928-1930.
- Wells, K. D. & Taigen, T. L. (1986). The effect of social interactions on calling energetics in the gray tree frog. *Behav. Ecol. Sociobiol.*, **19**, 9-18.
- Wells, K. D. & Taigen, T. L. (1986). The effect of social interactions on calling energetics in the grey treefrog (*Hyla versicolor*). *Behav. Ecol. Sociobiol.*, **19**, 9-18.
- Wells, K. D. (1988). The effect of social interactions on anuran vocal behavior. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, M. J. Ryan, W. Wilczynski, T. E. Hetherington & W. Walkowiak, eds.). John Wiley; New York, pp. 433-454.
- Wilczynski, W., McClelland, B. E. & Rand, A. S. (1993). Acoustic, auditory and morphological divergence in three species of neotropical frog. *J. Comp. Physiol. A.*, **172**, 425-438.
- Wilczynski, W., Rand, A. S. & Ryan, M. J. (1995). The processing of spectral cues by the call analysis system of the tungara frog, *Physalaemus pustulosus*. *Anim. Behav.*, **49**, 911-929.
- Wilczynski, W., Resler, C. & Capranica, R. R. (1987). Tympanic and extratympanic sound transmission in the leopard frog. *J. Comp. Physiol. A.*, **161**, 659-669.
- Wilczynski, W., Rand, A. S. & Ryan, M. J. (1999). Female preferences for temporal order of call components in the tungara frog: A Bayesian analysis. *Anim. Behav.*, **58**, 841-851.
- Wilczynski, W., Rand, A. S. & Ryan, M. J. (2001). Evolution of calls and auditory tuning in the *Physalaemus pustulosus* species group. *Brain Behav. Evol.*, **58**, 137-151.
- Witte, K., Ryan, M. J. & Wilczynski, W. (2001). Changes in frequency structure of a mating call decrease its attractiveness to females in the cricket frog *Acris crepitans blanchardi*. *Ethology*, **107**, 685-699.
- Witte, K., Kime, N. M., Wilczynski, W. & Ryan, M. J. (1998). Mate location in a noisy environment in the cricket frog *Acris crepitans blanchardi*. *Bioacoustics*, **9**, 152.
- Wollerman, L. (1998). Stabilizing and directional preferences of female *Hyla ebraccata* for calls differing in static properties. *Anim. Behav.*, **55**, 1619-1630.
- Wollerman, L. & Wiley, R. H. (2002). Background noise from a natural chorus alters female discrimination of male calls in a Neotropical frog. *Anim. Behav.*, **63**, 15-22 (+ erratum p. 1027).
- Wollerman, L. (1997). Mate choice in a noisy environment. *Adv. Ethol.*, **32**, 29.
- Wollerman, L. (1999). Acoustic interference limits call detection in a Neotropical frog *Hyla ebraccata*. *Anim. Behav.*, **57**, 529-536.
- Wollerman, L. (1995). Acoustic communication and acoustic interference in a neotropical frog, *Hyla ebraccata*. Ph.D. thesis. University of North Carolina.
- Yamaguchi, A. & Kelley, D. B. (2000). Generating sexually differentiated vocal patterns: Laryngeal nerve and EMG recordings from vocalizing male and female African clawed frogs (*Xenopus laevis*). *J. Neurosci.*, **20**, 1559-1567.
- Yamaguchi, A., Kaczmarek, L. K. & Kelley, D. B. (2001). Intrinsic properties of laryngeal motoneurons that generate sexually distinct vocalizations in African clawed frogs, *Xenopus laevis*. *Soc. Neurosci. Abstr.*, **27**, 241.
- Yamaguchi, A., Kaczmarek, L. K. & Kelley, D. B. (2000). Intrinsic membrane properties of laryngeal motoneurons that control sexually differentiated vocal behavior in African clawed frogs, *Xenopus laevis*. *Biol. Bull.*, **199**, 175-176.
- Yamaguchi, A. & Kelley, D. B. (1999). The central nervous system generates sexually differentiated vocal patterns in African clawed frogs (*Xenopus laevis*). *Soc. Neurosci. Abstr.*, **25**, 1365.
- Yen, G. G. & Quiang, F. (2001). Automatic frog calls monitoring system: a machine learning approach. *Int. J. Comput. Intell. Appl.*, **2**, 165-186.
- Zakon, H. H. & Wilczynski, W. (1988). The physiology of the anuran eighth nerve. In *The Evolution of the Amphibian Auditory System* (B. Fritzsche, M. J. Ryan, W. Wilczynski, T. E. Hetherington & W. Walkowiak, eds.). John Wiley and Sons; New York, pp. 125-155.
- Zhang, H. & Feng, A. S. (1998). Sound direction modifies the inhibitory as well as the excitatory frequency tuning characteristics of single neurons in the frog torus semicircularis (inferior colliculus). *J. Comp. Physiol. A.*, **182**, 725-735.
- Zhang, H., Xu, J. & Feng, A. S. (1999). Effects of GABA-mediated inhibition of direction-dependent frequency tuning in the frog inferior colliculus. *J. Comp. Physiol. A.*, **184**, 85-98.
- Zornik, E. J. & Kelley, D. B. (2001). Identifying interneurons that project to the vocal motor nucleus in *Xenopus laevis*. *Soc. Neurosci. Abstr.*, **27**, 241.
-

REPTILES

- Bartol, S. M., Musick, J. A. & Lenhardt, M. L. (1999). Auditory evoked potentials of the loggerhead sea turtle (*Caretta caretta*). *Copeia*, **1999**, 836-840.
- Bauer, A. M., Doherty, J. & Russell, A. P. (1992). Vocalizations of the New Caledonian giant gecko *Rhacodactylus leachianus*. *Amphib-Reptilia*, **13**, 412-417.
- Bisazza, A., Rogers, L. J. & Vallortigara, G. (1998). The origins of cerebral asymmetry: A review of evidence of behavioural and brain lateralization in fishes, reptiles and amphibians. *Neurosci. Biobehav. Rev.*, **22**, 411-426.
- Britton, A. R. C. (2001). Review and classification of call types of juvenile crocodylians, and factors affecting distress calls. In *Crocodylian Biology and Evolution* (G. C. Grigg, F. Seebacher and C. E. Franklin, eds.). Surrey Beatty & Sons; Chipping Norton, NSW.
- Carothers, J. H., Groth, J. G. & Jaksic, F. M. (2001). Vocalization as a response to capture in the central Chilean lizard *Liolaemus chiliensis* (Tropiduridae). *Stud. Neotrop. Fauna Environ.*, **36**, 93-94.
- Conley, K. E. & Lindstedt, S. L. (1996). Minimal cost per twitch in rattlesnake tail muscle. *Nature*, **383**, 71-72.
- Cook, P. M., Rowe, M. P. & van Devender, R. W. (1994). Allometric scaling and interspecific differences in the rattling sounds of rattlesnakes. *Herpetologica*, **50**, 358-368.
- Fernandez, M. S. & Basso, N. G. (1992). Analysis of the vocalizations of *Chelonoidis chilensis* (Gray) (Chelonii: Testudinidae). *Acta Zool. Lilloana*, **41**, 341-344 (Spanish).
- Frankenberg, E. & Werner, Y. L. (1992). Vocal communication in the Reptilia: facts and questions. *Acta Zool. Lilloana*, **41**, 45-62.
- Hetherington, T. E. (1992). Behavioural use of seismic cues by the sandswimming lizard *Scincus scincus*. *Ethol. Ecol. Evol.*, **4**, 5-14.
- Junette, K. (1993). Possible implications of cranial synovial joints in sound reception by archosaurs. *J. Vertebr. Paleontol.*, **13**, 3. Suppl., 43A.
- Kissner, K. J., Forber, M. R. & Secoy, D. M. (1997). Rattling behavior of pairie rattlesnakes (*Crotalus viridis viridis*, Viperidae) in relation to sex, reproductive status, body size, and body temperature. *Ethology*, **103**, 1042-1050.
- Manley, G. A. (1990). *Peripheral hearing mechanisms in reptiles and birds*. Springer Verlag; Heidelberg.
- Martin, J. & Lopez, P. (2001). Are fleeing 'noisy' lizards signalling to predators? *Acta Ethol.*, **3**, 95-101.
- Rittenhouse, D. R., Russell, A. P. & Bauer, A. M. (1998). The larynx and trachea of the barking gecko, *Ptenopus garrulus maculatus* (Reptilia: Gekkonidae) and their relation to vocalization. *S. Afr. J. Zool.*, **33**, 23-30.
- Rowe, M. P., Coss, R. G. & Owings, D. H. (1986). Rattlesnake rattles and burrowing owl hisses: a case of acoustic Batesian mimicry. *Ethology*, **72**, 53-71.
- Rowe, M. P. & Owings, D. H. (1996). Probing, assessment and management during interactions between ground squirrels (Rodentia: Sciuridae) and rattlesnakes (Squamata: Viperidae). 2. Cues afforded by rattlesnake rattling. *Ethology*, **102**, 856-874.
- Russell, A. P., Rittenhouse, D. R. & Bauer, A. M. (2000). Laryngotracheal morphology of Afro-Madagascan geckos: A comparative study. *J. Morphol.*, **245**, 241-268.
- Swaigood, R. R., Rowe, M. P. & Owings, D. H. (1999). Assessment of rattlesnake dangerousness by California ground squirrels: exploitation of cues from rattling sounds. *Anim. Behav.*, **57**, 1301-1310.
- Tang, Y.-Z., Zhuang, L.-Z. & Wang, Z.-W. (2001). Advertisement calls and their relation to reproductive cycles in *Gekko gekko* (Reptilia, Lacertilia). *Copeia*, **2001**, 248-253.
- Tang, Y. Z., Piao, Y. S., Zhuang, L. Z. & Wang, Z. W. (2001). Expression of androgen receptor mRNA in the brain of *Gekko gekko*: implications for understanding the role of androgens in controlling auditory and vocal processes. *J. Comp. Neurol.*, **438**, 136-147.
- Weishampel, D. B. (1997). Dinosaurian cacophony. *Bioscience*, **47**, 150-159.
- Young, B. A. & Brown, I. P. (1993). On the acoustic profile of the rattlesnake rattle. *Amphib-Reptilia*, **14**, 373-380.
- Young, B. A. & Brown, I. P. (1995). The physical basis of the rattling sound in the rattlesnake *Crotalus viridis oreganus*. *J. Herpetol.*, **29**, 80-85.
- Young, B. A. & Brown, I. P. (1992). The physical basis of the rattling sound of rattlesnakes. *Am. Zool.*, **32**, 155A.
- Young, B. A. & Lalor, J. (1998). Sound production in the eastern hognose snake, *Heterodon platyrhinos* (Serpentes: Colubridae): Does it snore? *Amphibia-Reptilia*, **19**, 407-418.
- Young, B. A., Nejman, N., Meltzer, K. & Marvin, J. (1999). The mechanics of sound production in the puff adder *Bitis arietans* (Serpentes: Viperidae) and the information content of the snake hiss. *J. Exp. Biol.*, **202**, 2281-2290.
-

PASSERINE BIRDS

- Absil, P. C., Balthazart, J., Ball, G. F., Pinxten, R. & Eens, M. (2001). Seasonal plasticity of the catecholaminergic innervation of song nuclei in blue tits. *Soc. Neurosci. Abstr.*, **27**, 1708.
- Adhikerana, A. S. & Slater, P. J. B. (1993). Singing interactions in coal tits, *Parus ater*: an experimental approach. *Anim. Behav.*, **46**, 1205-1211.
- Adhikerana, A. S. (1992). *The singing Behaviour of coal tits (Parus ater)*. PhD Thesis. University of St Andrews, UK.
- Adkins-Regan, E. (1999). Testosterone increases singing and aggression but not male-typical sexual partner preference in early estrogen treated female zebra finches. *Horm. Behav.*, **35**, 63-70.
- Adkins-Regan, E., Mansukhani, V., Seiwert, C. & Thompson, R. (1994). Sexual differentiation of brain and behavior in the zebra finch: Critical periods for effects of early estrogen treatment. *J. Neurobiol.*, **25**, 865-877.
- Adret-Hausberger, M., Guettinger, H. R. & Merkel, F. W. (1990). Individual life history and song repertoire changes in a colony of starlings (*Sturnus vulgaris*). *Ethology*, **84**, 265-280.
- Adret-Hausberger, M. (1986). Temporal dynamics of dialects in the whistled songs of starlings. *Ethology*, **71**, 140-152.
- Adret, P. (1993). Operant conditioning, song learning, and imprinting to taped song in the zebra finch. *Anim. Behav.*, **46**, 149-159.
- Adret, P. & Margoliash, D. (2000). Early development of auditory selectivity in the song system nucleus robustus archistriatalis. *Soc. Neurosci. Abstr.*, **26**.
- Adret-Hausberger, M. (1988). Species specificity and dialects in starlings' whistles. *Acta XIX Congressus Internationalis Ornithologici. National Museum of National Sciences. Ottawa*, 1585-1597.
- Adret-Hausberger, M. (1988). Song differentiation and population structure: the example of the whistled song in an introduced population of European starlings *Sturnus vulgaris* in Australia. *Ethology*, **79**, 104-115.
- Adret, P. (1993). Vocal learning induced with operant techniques: an overview. *Neth. J. Zool.*, **43**, 125-142.
- Agate, R. J., Mann, S., Schanen, C., Palotie, A. & Arnold, A. P. (2001). A zebra finch gynandromorph with masculine song system and lateralized expression of sex chromosome genes. *Soc. Neurosci. Abstr.*, **27**, 368.
- Airey, D. C., Castillo-Juarez, H., Casella, G., Pollak, E. J. & DeVoogd, T. J. (2000). Variation in the volume of zebra finch song control nuclei is heritable: Developmental and evolutionary implications. *Proc. Roy. Soc. Lond. B.*, **267**, 2099-2104.
- Airey, D. C. & DeVoogd, T. J. (2000). Greater song complexity is associated with augmented song system anatomy in zebra finches. *NeuroReport*, **11**, 2339-2344.
- Airey, D. C. (2000). Erratum: Greater song complexity is associated with augmented song system anatomy in zebra finches. *NeuroReport*, **11**, x.
- Airey, D. C., Buchanan, K. L., Szekely, R., Catchpole, C. K. & DeVoogd, T. J. (2000). Song, sexual selection, and a song control nucleus (HVC) in the brains of European sedge warblers. *J. Neurobiol.*, **44**, 1-6.
- Airey, D. C., Kroodsma, D. E. & DeVoogd, T. J. (2000). Differences in the complexity of song tutoring cause differences in the amount learned and in dendritic spine density in a songbird telencephalic song control nucleus. *Neurobiol. Learn. Memory*, **73**, 274-281.
- Airey, D. C., Castillo, H. J., Pollak, E. J., Casella, G. & DeVoogd, T. J. (1999). Phenotypic and quantitative genetic description of NISSL-defined volumes of song control nuclei in zebra finches. *Soc. Neurosci. Abstr.*, **25**, 1368.
- Akutagawa, E. & Konishi, M. (2001). A monoclonal antibody specific to a song system nuclear antigen in estrildine finches. *Neuron*, **31**, 545-556.
- Akutagawa, E. & Konishi, M. (1998). Transient expression and transport of brain-derived neurotrophic factor in the male zebra finch's song system during vocal development. *Proc. Natl. Acad. Sci. USA*, **95**, 11429-11434.
- Akutagawa, E. & Konishi, M. (1994). Two separate areas of the brain differentially guide the development of a song control nucleus in the zebra finch. *Proc. Natl. Acad. Sci. USA*, **91**, 12413-12417.
- Alatalo, R. & Helle, P. (1990). Alarm calling by individual willow tits, *Parus montanus*. *Anim. Behav.*, **40**, 437-442.
- Albrecht, D. J. & Oring, L. W. (1995). Song in chipping sparrows, *Spizella passerina*: structure and function. *Anim. Behav.*, **50**, 1233-1241.
- Albrecht, D. J. (1991). *Function of song in chipping sparrows (Spizella passerina)*. M.S. Thesis, University of North Dakota.
- Aleksandrov, L. I. (1997). Delay in the development of auditory sensitivity in nestlings and reorganization of feeding behavior. *Neurosci. Behav. Physiol.*, **27**, 27-29.
- Alexandrov, L. I. & Korneeva, E. V. (1994). Species-specific acoustic signals affect the auditory development in

- altricial nestlings. *J. Ornithol.*, **135** (Sonderheft), 155.
- Allan, S. E. & Suthers, R. A. (1994). Lateralization and motor stereotypy of song production in the brown-headed cowbird. *J. Neurobiol.*, **25**, 1154-1166.
- Allenbacher, R., Boehner, J. & Hammerschmidt, K. (1995). Individually distinctive "krah" calls of the hooded crow (*Corvus corone cornix*). *J. Ornithol.*, **136**, 441-446 (German).
- Alvarez-Buylla, A. & Nottebohm, F. (1988). Migration of young neurons in adult avian brain. *Nature*, **335**, 353-354.
- Alvarez-Buylla, A. (1994). Neurogenesis and the unique anatomy of the song control nuclei. *J. Ornithol.*, **135**, 426.
- Alvarez-Buylla, A. & Mateo, A. (1992). Progressive development of the projection from HVC to area X in canaries. *Soc. Neurosci. Abstr.*, **18**, 529.
- Alvarez-Buylla, A. & Kirn, J. R. (1997). Birth, migration, incorporation, and death of vocal control neurons in adult songbirds. *J. Neurobiol.*, **33**, 585-601.
- Alvarez, F. (1996). Variation in song rate during the breeding cycle of the rufous bush chat, *Cercotrichas galactotes*. *Ardeola*, **43**, 49-56.
- Ammer, F. K. & Capp, M. S. (1999). Song versatility and social context in the bobolink. *Condor*, **101**, 686-688.
- Anderson, S. E., Dave, A. S. & Margoliash, D. (1996). Template-based automatic recognition of birdsong syllables from continuous recordings. *J. Acoust. Soc. Am.*, **100**, 1-11.
- Apel, K. M. & Weise, C. M. (1986). The hiss-display of nestling black-capped chickadees in captivity. *Wilson Bull.*, **98**, 320-321.
- Appeltants, D., Ball, G. F. & Balthazart, J. (2002). The origin of catecholaminergic inputs to the song control nucleus RA in canaries. *NeuroReport*, **13**, 649-653.
- Appeltants, D., Absil, P., Balthazart, J. & Ball, G. F. (2000). Identification of the origin of catecholaminergic inputs to HVC in canaries by retrograde tract tracing combined with tyrosine hydroxylase immunocytochemistry. *J. Chem. Neuroanat.*, **18**, 117-133.
- Appeltants, D., Ball, G. F. & Balthazart, J. (2000). Sex differences in the catecholaminergic innervation of song control nuclei in the canary. *Soc. Neurosci. Abstr.*, **26**.
- Appeltants, D., Ball, G. F. & Balthazart, J. (2001). The distribution of tyrosine hydroxylase in the canary brain: demonstration of a specific and sexually dimorphic catecholaminergic innervation of the telencephalic song control nuclei. *Cell Tissue Res.*, **304**, 237-259.
- Armstrong, T. A. (1995). Patterns of vocalization use by female red-winged blackbirds (Aves: Emberizidae, Icterinae): variation and context. *Ethology*, **100**, 331-351.
- Arnold, A. P. & Schlinger, B. A. (1993). Sexual differentiation of brain and behavior: The zebra finch is not just a flying rat. *Brain Behav. Evol.*, **42**, 231-241.
- Arnold, A. P. (1991). Developmental plasticity in neuronal circuits controlling birdsong: sexual differentiation and the neural basis of learning. *J. Neurobiol.*, **23**, 1506-1528.
- Arnold, A. P. (1992). Developmental plasticity in neural circuits controlling birdsong: sexual differentiation and the neural basis of learning. *J. Neurobiol.*, **23**, 1506-1528.
- Arnold, A. P. (1997). Experimental analysis of sexual differentiation of the zebra finch brain: An investigation of sex and regional differences. *Brain Res. Bull.*, **44**, 503-507.
- Arnold, A. P. (1997). Sexual differentiation of the zebra finch song system: positive evidence, negative evidence, nullhypotheses, and a paradigm shift. *J. Neurobiol.*, **33**, 572-584.
- Ashby, V. (1992). The alarm call of the starling. *Birding World*, **6(5)**, 234.
- Ashiya, T. & Nakagawa, M. (1993). A proposal of a recognition system for the species of birds receiving birdcalls: an application of recognition systems for environmental sound. *Ieice Trans. Fundam. Electron. Comm. Comput. Sci.*, **E76A**, 1858-1860.
- Atienza, J. C. & Illera, J. C. (1997). Tree species selection to perform singing and foraging behaviour by great and blue tits: A trade-off between food gathering and territorial behaviour? *Bird Study*, **44**, 117-119.
- Atkinson, E. C. (1997). Singing for your supper: Acoustical luring of avian prey by northern shrikes. *Condor*, **99**, 203-206.
- Atwood, J. L., Fitz, V. L. & Bamesberger, J. F. (1991). Temporal patterns of singing activity at leks of the white-bellied emerald. *Wilson Bull.*, **103**, 373-386.
- Aubin, T. & Mathevon, N. (1995). Adaptation to severe conditions of propagation: long-distance distress calls; and courtship calls of a colonial seabird. *Bioacoustics*, **6**, 153-161.
- Aubin, T. (1994). Adaptation in transfer of information in the environment. Role of temporal parameters in the distress call of the starling (*Sturnus vulgaris*). *Revue d'Ecologie (Terre & Vie)*, **49**, 57-67.
- Auger, C. J., Bentley, G. E., Auger, A. P., Ramamurthy, M. & Ball, G. F. (2000). Expression of CREB-binding protein immunoreactivity in song control nuclei of European starlings. *Soc. Neurosci. Abstr.*, **26**.
- Aweida, M. K. (1995). Repertoires, territory size and mate attraction in western meadowlarks. *Condor*, **97**, 1080-1083.

- Badyaev, A. V., Hill, G. E. & Weckwort, B. V. (2002). Species divergence in sexually selected traits: increase in song elaboration is related to decrease in plumage ornamentation in finches. *Evolution*, **56**, 412-419.
- Badyaev, A. V. & Leaf, E. S. (1997). Habitat associations of song characteristics in *Phylloscopus* and *Hippolais* warblers. *Auk*, **114**, 40-46.
- Bailey, D. J., Rosebush, J. C. & Wade, J. (2002). The hippocampus and caudomedial neostriatum show selective responsiveness to conspecific song in the female zebra finch. *J. Neurobiol.*, **52**, 43-51.
- Bailey, D. J., Rosebush, J. C. & Wade, J. (2001). The hippocampus and caudal medial neostriatum show selective responsiveness to conspecific song in the adult female zebra finch. *Soc. Neurosci. Abstr.*, **27**, 843.
- Baker, M. C., Howard, T. M. & Sweet, P. W. (2000). Microgeographic variation and sharing of the gargle vocalization and its component syllables in black-capped chickadee (Aves, Paridae, *Poecile atricapillus*) populations. *Ethology*, **106**, 819-838.
- Baker, M. C. (1996). Female buntings from hybridizing populations prefer conspecific males. *Wilson Bull.*, **108**, 771-775.
- Baker, M. C. & Boylan, J. T. (1999). Singing behavior, mating associations and reproductive success in a population of hybridizing lazuli and indigo buntings. *Condor*, **101**, 493-504.
- Baker, M. C., Baker, E. M. & Baker, M. S. A. (2001). Island and island-like effects on vocal repertoire of singing honeyeaters. *Anim. Behav.*, **62**, 767-774.
- Baker, M. C. (2001). Bird song research: The past 100 years. *Bird Behavior*, **14**, 3-50.
- Baker, M. C. (1986). Sexual selection and size of repertoire in songbirds. *Proc. Int. Ornithol. Congr. XIX*, 1358-1365.
- Baker, M. C. (1996). Depauperate meme pool of vocal signals in an island population of singing honeyeaters. *Anim. Behav.*, **51**, 853-858.
- Baker, M. C., Tracy, T. T. & Miyasato, L. E. (1996). Gargle vocalizations of black-capped chickadees: test of repertoire and video stimuli. *Anim. Behav.*, **52**, 1171-1175.
- Baker, M. C. (1993). Evidence of intraspecific vocal imitation in singing honeyeaters (Meliphagidae) and golden whistlers (Pachycephalidae). *Condor*, **95**, 1044-1048.
- Baker, M. C. & Boylan, J. T. (1995). A catalog of song syllables of indigo and lazuli buntings. *Condor*, **97**, 1028-1040.
- Baker, M. C. (1994). Loss of function in territorial song: Comparison of island and mainland populations of the singing honeyeater (*Meliphaga virescens*). *Auk*, **111**, 178-184.
- Baker, M. C. (1994). Does exposure to heterospecific males affect sexual preferences of female buntings (*Passerina*)? *Anim. Behav.*, **48**, 1349-1355.
- Baker, M. C. (1994). Does exposure to heterospecific males affect sexual preferences of female buntings (*Passerina*)? *Anim. Behav.*, **48**, 1349-1355.
- Balaban, E. (1986). *Cultural and genetic variation in swamp sparrows (Melospiza georgiana)*. Ph.D. dissertation. The Rockefeller University, New York.
- Ball, G. F. (1994). Neurochemical specializations associated with vocal learning and production in songbirds and budgerigars. *Brain Behav. Evol.*, **44**, 234-246.
- Ball, G. F. & Hulse, S. H. (1998). Birdsong. *American Psychologist*, **53**, 37-58.
- Ball, G. F. & Balthazar, J. (2001). Ethological concepts revisited: immediate early gene induction in response to sexual stimuli in birds. *Brain Behav. Evol.*, **57**, 252-270.
- Ball, G. F. (2000). Learning to like your voice: developing selectivity to birdsong. *Neuron*, **25**, 4-5
- Ball, G. F. (1999). The neuroendocrine basis of seasonal changes in vocal behavior among songbirds. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). A Bradford Book. The MIT Press; Cambridge, Massachusetts, pp. 213-253.
- Ball, G. F. & Bentley, G. E. (1999). Lesions directed at HVc block the gonado-stimulatory effects of conspecific vocalizations in female canaries. *Soc. Neurosci. Abstr.*, **25**, 864.
- Ball, G. F. (1994). Comparative studies of the avian vocal control circuit reveal neural specializations associated with vocal learning and production. *J. Ornithol.*, **135**, 420.
- Ball, G. F. & Macdougall-Shackleton, S. A. (2001). Sex differences in songbirds 25 years later: What have we learned and where do we go? *Microsc. Res. Tech.*, **54**, 327-334.
- Ball, G. F. & Ritters, L. V. (2000). Seasonal variation in alpha-two adrenergic receptor densities in the song control system of European starlings. *Soc. Neurosci. Abstr.*, **26**.
- Ball, G. F., Ritters, L. V. & Balthazar, J. (2002). Neuroendocrinology of song behavior and avian brain plasticity: Multiple sites of action of sex steroid hormones. *Front. Neuroendocrinol.*, **23**, 137-178.
- Ball, G. F., Casto, J. M. & Bernard, D. J. (1994). Sex differences in the volume of avian song control nuclei: comparative studies and the issue of brain nucleus delineation. *Psychoneuroendocrinology*, **19**, 485-504.
- Balsby, T. J. S. (2000). Song activity and variability in relation to male quality and female choice in whitethroats

- Sylvia communis*. *J. Avian Biol.*, **31**, 56-62.
- Balsby, T. J. S. & Dabelsteen, T. (1999). Do males perceive differences in song repertoire size in whitethroats *Sylvia communis*? Proc. XVII Int. Bioac. Council, at www.cb.u-ppsud.fr/cb/.
- Balsby, T. J. S. & Dabelsteen, T. (2001). The meaning of song repertoire size and song length to male whitethroats *Sylvia communis*. *Behav. Process.*, **56**, 75-84.
- Balsby, T. J. S. & Dabelsteen, T. (2002). Female behaviour affects male courtship in whitethroats, *Sylvia communis*: an interactive experiment using visual and acoustic cues. *Anim. Behav.*, **63**, 251-257.
- Balsby, T. J. S. (1997). Function of song, and song in relation to male quality and female choice in whitethroats (*Sylvia communis*). Cand. scient. thesis. Natural History Museum and University of Aarhus, Denmark.
- Balsby, T. (2000). The function of song in whitethroats *Sylvia communis*. *Bioacoustics*, **11**, 17-30.
- Balsby, T. J. S. (1996). Repertoire and colouration (carotenoid pigmentation) in the linnet *Carduelis cannabina*. *Bioacoustics*, **6**, 313.
- Balsby, T. J. S. (1997). Does song variability reflect male quality in whitethroats? *Adv. Ethol.*, **32**, 121.
- Balthazart, J., Absil, P., Fiasse, V. & Ball, G. F. (1994). Effects of the aromatase inhibitor R76713 on sexual differentiation on brain and behavior in zebra finches. *Behaviour*, **131**, 225-260.
- Balzer, A. L. & Williams, T. D. (1998). Do female zebra finches vary primary reproductive effort in relation to mate attractiveness? *Behaviour*, **135**, 297-309.
- Baptista, L. F., Bell, D. A. & Trail, P. W. (1993). Song learning and production in the white-crowned sparrow: parallels with sexual imprinting. *Neth. J. Zool.*, **43**, 17-33.
- Baptista, L. F. & Gaunt, S. L. L. (1994). Advances in studies of avian sound communication. *Condor*, **96**, 817-830.
- Baptista, L. F. (1998). Advances in avian bioacoustics studies. *Bioacoustics*, **9**, 149.
- Baptista, L. F. & Krebs, R. (2000). Vocalizations and relationships of brown creepers *Certhia americana*: a taxonomic mystery. *Ibis*, **142**, 457-465.
- Baptista, L. F., Jesse, A., Bell, D. A. & Cebrian, C. (1997). Acquisition and recall of Gambel's sparrow dialects by Nuttall's white-crowned sparrows in the wild. *Wilson Bull.*, **109**, 516-521.
- Baptista, L. F. (1990). Song learning in white-crowned sparrows (*Zonotrichia leucophrys*): sensitive phases and stimulus filtering revisited. In *Current Topics in Avian Biology. Proc. Int. 100. DO-G Meeting, Bonn* (R. van Elzen, K. L. Schuchmann & K. Schmidt-Koenig, eds.). Verlag DO-G, Garmisch-Partenkirchen, pp. 143-152.
- Baptista, L. F. & Gaunt, S. L. L. (1997). The role of social interaction on vocal development in birds. In *Social Influences on Vocal Development* (C. Snowdon & M. Hausberger, eds.). Cambridge University Press; London, pp. 23-40.
- Baptista, L. F. (1996). Nature and its nurturing in avian vocal development. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 39-60.
- Baptista, L. F., Trail, P. W., DeWolfe, B. B. & Morton, M. L. (1993). Singing and its functions in female white-crowned sparrows. *Anim. Behav.*, **46**, 511-524.
- Baptista, L. F. (1988). Song learning in white-crowned sparrows (*Zonotrichia leucophrys*): sensitive phases and stimulus filtering revisited. *Proc. Int. 100. DO-G Meeting, Current Topics in Avian Biology, Bonn*.
- Baptista, L. F. (1990). Dialectal variation in the raincall of the chaffinch (*Fringilla coelebs*). *Vogelwarte*, **35**, 249-256.
- Barclay, S. R. & Harding, C. F. (1990). Differential modulation of monoamine levels and turnover rates by estrogen and/or androgen in hypothalamic vocal control nuclei of male zebra finches. *Brain Res.*, **523**, 251-262.
- Bard, S. C., Hau, M., Wikelski, M. & Wingfield, J. C. (2002). Vocal distinctiveness and response to conspecific playback in the spotted antbird, a neotropical suboscine. *Condor*, **104**, 387-394.
- Barg, J. J. & Mumme, R. L. (1994). Parental recognition of juvenile begging calls in the Florida scrub jay. *Auk*, **111**, 459-464.
- Baril, C. T. & Barlow, J. C. (2000). Pacific coast and southwest interior populations of the Hutton's vireo differ in basic song parameters. *Condor*, **102**, 911-914.
- Bartlett, P. (1998). Social aspects of call learning in the zebra finch (*Taeniopygia guttata*) and budgerigar (*Melopsittacus undulatus*). Ph.D. Thesis. University of St Andrews.
- Basham, M. E., Noordeen, E. J. & Nordeen, K. W. (1996). Blockade of NMDA receptors in the anterior forebrain impairs sensory acquisition in the zebra finch (*Poephila guttata*): *Neurobiol. Learn. Memory*, **66**, 295-304.
- Bastian, A. & Bastian, H.-V. (1990). The calling behaviour of ringed birds after releasing. *J. Ornithol.*, **131**, 361-369 (German).
- Bauer, H.-G. (1989). On the dialect discrimination in the short-toed treecreeper (*Certhia brachydactyla*). In *Current Topics in Avian Biology* (R. van den Elzen, K. L. Schuchmann & K. Schmidt-Koenig, eds).

- Proc. Int. 100 Deutschen Ornithologen-Gesellschaft Meeting, 1988, Bonn, Germany, pp. 133-142 (German).
- Bautista, L. M. & Lane, S. J. (2000). Coal tits increase evening body mass in response to tawny owl calls. *Acta Ethol.*, **2**, 105-110.
- Bay, M. D. (1999). The type B song of the northern parula: Structure and geographic variation along proposed sub-species boundaries. *Wilson Bull.*, **111**, 505-514.
- Bay, M. D. (1987). Singing behavior and geographic variation in the type B song of the northern parula (*Parula americana*). M.A. thesis. Sam Houston State University, Huntsville, Texas.
- Bay, M. D. (1999). Notes on the singing behavior and use of atypical songs in the northern parula warbler, *Parula americana* (Aves: Emberizidae). *Texas J. Sci.*, **51**, 20-24.
- Beck, M. J. & George, T. L. (2000). Song post and foraging site characteristics of breeding varied thrushes in northwestern California. *Condor*, **102**, 93-103.
- Beck, M. J. (1997). Song post and foraging location characteristics of breeding varied thrushes in coastal redwood forests of northwestern California. M. Sc. thesis. Humboldt State University. Arcata, California.
- Beebee, M. D. (2002). Song sharing by yellow warblers differs between two modes of singing: Implications for song function. *Condor*, **104**, 146-155.
- Beecher, M. D., Medvin, M. B., Stoddard, P. K. & Loesche, P. (1986). Acoustic adaptations for parent-offspring recognition in swallows. *Exp. Biol.*, **45**, 179-193.
- Beecher, M. D., Campbell, S. E. & Burt, J. M. (1994). Song perception in the song sparrow: Birds classify by song type, but not by singer. *Anim. Behav.*, **47**, 1343-1351.
- Beecher, M. D., Nordby, J. C., Campbell, S. E., Burt, J. M., Hill, C. E. & O'Loughlen, A. L. (1997). What is the function of song learning in songbirds? In *Perspectives in Ethology. Vol. 12: Communication* (D. H. Owings, M. D. Beecher and N. S. Thompson, eds.). Plenum Press; New York, pp. 77-97.
- Beecher, M. D. & Stoddard, P. K. (1990). The role of bird song and calls in individual recognition: contrasting field and laboratory perspectives. In *Comparative Perception, Vol. 2* (W. C. Stebbins & M. A. Berkley, eds). Wiley; New York, pp. 375-408.
- Beecher, M. D. & Campbell, S. E. (1994). The song learning strategy of the song sparrow. *J. Ornithol.*, **135**, 427.
- Beecher, M. D. (1990). Evolution of parent-offspring recognition in swallows. In *Contemporary Issues in Comparative Psychology* (D. A. Dewsbury, ed). Sinauer, Sunderland, MA, pp. 360-380.
- Beecher, M. D., Stoddard, P. K., Campbell, S. E. & Horning, C. L. (1996). Repertoire matching between neighbouring song sparrows. *Anim. Behav.*, **51**, 917-923.
- Beecher, M. D., Campbell, S. E., Burt, J. M., Hill, C. E. & Nordby, J. C. (2000). Song-type matching between neighbouring song sparrows. *Anim. Behav.*, **59**, 21-27.
- Beecher, M. D., Campbell, S. E. & Nordby, J. C. (2000). Territory tenure in song sparrows is related to song sharing with neighbours, but not to repertoire size. *Anim. Behav.*, **59**, 29-37.
- Beecher, M. D., Campbell, S. E. & Stoddard, P. K. (1994). Correlation of song learning and territory establishment strategies in a songbird. *Proc. Natl. Acad. Sci. USA*, **91**, 1450-1454.
- Beecher, M. D. (1996). Birdsong learning in the laboratory and field. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 61-78.
- Beguín, N., Leboucher, G. & Kreutzer, M. (1998). Sexual preferences for mate song in female canaries (*Serinus canaria*). *Behaviour*, **135**, 1185-1196.
- Béguin, N., Leboucher, G. & Kreutzer, M. (1997). Song preferences in female canaries are modified by reproductive experience. *Adv. Ethol.*, **32**, 202.
- Beier, J., Leisler, B. & Wink, M. (1997). A great reed x reed warbler (*Acrocephalus arundinaceus x A. scirpaceus*) hybrid and its parentage. *J. Orn.*, **138**, 51-60 (German).
- Bell, D. A., Trail, P. W. & Baptista, L. F. (1998). Song learning and vocal tradition in Nuttall's white-crowned sparrows. *Anim. Behav.*, **55**, 939-956.
- Beme, I. R. (1994). Formation of acoustic repertoire in the Turdidae. *J. Ornithol.*, **135** (Sonderheft), 157.
- Benney, K. S. & Braaten, R. F. (2000). Auditory scene analysis in estrildid finches (*Taeniopygia guttata* and *Lonchura striata domestica*): A species advantage for detection of conspecific song. *J. Comp. Psychol.*, **114**, 174-182.
- Bensch, S. & Hasselquist, D. (1992). Evidence for female choice in a polygynous warbler. *Anim. Behav.*, **44**, 301-311.
- Bensch, S., Nilsson, L. G. R., Nothagen, P., Olsson, P. & Aakesson, M. (2001). A chiffchaff *Phylloscopus c. collybita* with mixed chiffchaff and willow warbler *P. trochilus* song - genetic evidence. *Ornis Svecica*, **11**, 108-111.
- Bentley, G. E., Wingfield, J. C., Morton, M. L. & Ball, G. F. (2000). Stimulatory effects on the reproductive axis in female songbirds by conspecific and heterospecific male song. *Horm. Behav.*, **37**, 179-189.

- Bentley, G. E., Auger, C. J., Hanlon, K., Mirzadeh, Z. Z. & Ball, G. F. (2000). Seasonal variation in melatonin receptor density is correlated with variation in the phosphorylation of CREB in area x of European starlings. *Soc. Neurosci. Abstr.*, **26**.
- Benton, S., Nelson, D. A., Marler, P. & DeVoogd, T. J. (1998). Anterior forebrain pathway is needed for stable song expression in adult male white-crowned sparrows (*Zonotrichia leucophrys*). *Behav. Brain Res.*, **96**, 135-150.
- Bergen, F. & Abs, M. (1997). Etho-ecological study of the singing activity of the blue tit (*Parus caeruleus*), great tit (*Parus major*) and chaffinch (*Fringilla coelebs*). *J. Orn.*, **138**, 451-467 (German).
- Bergmann, H.-H. (1992). Song and calls of our birds. An introduction to bioacoustics, exemplified by the robin. *Wildtiere*, **1/1992**, 1-8 (German).
- Bergmann, H.-H., Flottmann, E., Heitkamp, W., Stehn-Nix, K.-P. & Ubozak, F. (1988). The Osnabrueck dialect map of rain calls in the chaffinch *Fringilla coelebs*. *Vogelk. Ber. Niedersachsen*, **20**, 89-96 (German).
- Bernard, D. J., Wilson, F. E. & Ball, G. F. (1997). Testis-dependent and -independent effects of photoperiod on volumes of song control nuclei in American tree sparrows (*Spizella arborea*). *Brain Res.*, **760**, 163-169.
- Bernard, D. J., Casto, J. M. & Ball, G. F. (1993). Sexual dimorphism in the volume of song control nuclei in European starlings: assessment by a Nissl stain and autoradiography for muscarinic cholinergic receptors. *J. Comp. Neurol.*, **334**, 559-570.
- Bernard, D. J. (1995). *The effects of testosterone, photoperiod, and season on plasticity in the song control system of European starlings (Sturnus vulgaris)*. Ph.D. thesis. The Johns Hopkins University; Baltimore.
- Bernard, D. J. & Ball, G. F. (1995). Two histological markers reveal a similar photoperiodic difference in the volume of the high vocal center of male European starlings. *J. Comp. Neurol.*, **360**, 726-734.
- Bernard, D. J., Eens, M. & Ball, G. F. (1996). Age- and behavior-related variation in volumes of song control nuclei in male European starlings. *J. Neurobiol.*, **30**, 329-339.
- Bernard, D. J., Bentley, G. E., Balthazart, J., Turek, F. W. & Ball, G. F. (1999). Androgen receptor, estrogen receptor alpha, and estrogen receptor beta show distinct patterns of expression in forebrain song control nuclei of European starlings. *Endocrinology*, **140**, 4633-4643.
- Bernard, D. J. & Ball, G. F. (1997). Photoperiodic condition modulates the effects of testosterone on song control nuclei volumes in male European starlings. *Gen. Comp. Endocrinol.*, **105**, 276-283.
- Bernard, D. J., Casto, J. M. & Ball, G. F. (1992). Sexual dimorphism in the volume of song control nuclei of European starlings: assessment by a Nissl stain and autoradiography for muscarinic cholinergic receptors. *Soc. Neurosci. Abstr.*, **18**, 528.
- Bhatt, D., Kumar, A., Singh, Y. & Payne, R. B. (2000). Territorial songs and calls of the oriental magpie robin *Copsychus saularis*. *Curr. Sci. New Delhi*, **78**, 722-728.
- Bigot, E., Hausberger, M. & Clergeau, P. (1994). Dialects and social organisation within roosts in starlings. *J. Ornithol.*, **135** (Sonderheft), 157.
- Birkhead, T. R., Buchanan, K. L., DeVoogd, T. J., Pellatt, E. J., Szekely, T. & Catchpole, C. K. (1997). Song, sperm quality and testes asymmetry in the sedge warbler. *Anim. Behav.*, **53**, 965-971.
- Bjoerklund, M., Westman, B. & Allander, K. (1989). Song in Swedish great tits: intra- or intersexual communication. *Behaviour*, **111**, 257-269.
- Blaich, C. F., Steury, K. R., Pettengill, P., Mahoney, K. T. & Guha, A. (1996). Temporal patterns of contact call interactions in pair-bonded domestic zebra finches (*Taeniopygia guttata*). *Bird Behavior*, **11**, 59-69.
- Blaich, C. F., Kovacevic, R., Tansinsin, S. L., Van Hoy, B. & Syud, F. A. (1995). The effects of domestication on the distance call of zebra finches. *Int. J. Comp. Psychol.*, **8**, 1-15.
- Blaich, C. F., Norman, M., Syud, F. A., Benitez, G., Frost, J., Ravenscroft, J., Smith, T., Tansinsin, S. & Ware, P. (1996). The use of distance calls to maintain pair contact in zebra finches (*Taeniopygia guttata*). *Bird Behavior*, **11**, 25-30.
- Blumenrath, S. H., Dabelsteen, T. & Pedersen, S. B. (2001). Song degradation of shared song types in the great tit: Potentials for individual discrimination. *Adv. Ethol.*, **36**, 123.
- Boco, T. & Margoliash, D. (2001). Nif is a major source of auditory and spontaneous drive to HVc. *Soc. Neurosci. Abstr.*, **27**, 841.
- Boehner, J., Jakobi, I., Podsiadlowski, L., Sieben, S., Adameczak, V. & Luetzkendorf, A. (1993). Diurnal changes in song activity in the nightingale (*Luscinia megarhynchos*) during the second half of the breeding period. *Berliner Orn. Ber.*, **3**, 20-30 (German).
- Boehner, J. & Hammerschmidt, K. (1996). Computer-aided acoustic analysis of complex bird calls. *Bioacoustics*, **6**, 313-314.
- Boehner, J. (1993). *The song of the starling (Sturnus vulgaris): Studies on form and acquisition*. *Sber. Ges. Naturf. Freunde Berlin*, **32**, 133-147 (German).
- Boehner, J. (1986). The timing of song acquisition in zebra finches (*Taeniopygia guttata*). *Verh. Dtsch. Zool.*

Ges., **79** (German)

- Boehner, J. & Veit, F. (1993). Song structure and patterns of wing movement in the European starling *Sturnus vulgaris*. *J. Ornithol.*, **134**, 309-315 (German).
- Boehner, J. & Todt, D. (1996). Influence of auditory stimulation on the development of syntactical and temporal features in European starling song. *Auk*, **113**, 450-456.
- Boettiger, C. A. & Doupe, A. J. (2001). Developmentally restricted synaptic plasticity in a songbird nucleus required for song learning. *Neuron*, **31**, 809-818.
- Boettiger, C. A. & Doupe, A. J. (2000). Developmentally restricted synaptic plasticity in a songbird nucleus required for song learning. *Soc. Neurosci. Abstr.*, **26**.
- Bolhuis, J. J. & Macphail, E. M. (2001). A critique of the neuroecology of learning and memory. *Trends Cogn. Sci.*, **5**, 426-433.
- Bolhuis, J. J., Hetebrij, E., Den Boer-Visser, A. M., De Groot, J. H. & Zijlstra, G. G. (2001). Localized immediate early gene expression related to the strength of song learning in socially reared zebra finches. *Eur. J. Neurosci.*, **13**, 2165-2170.
- Bolhuis, J. J., van Mil, D. P. & Houx, B. B. (1999). Song learning with audiovisual compound stimuli in zebra finches. *Anim. Behav.*, **58**, 1285-1292.
- Bolhuis, J. J., Zijlstra, G. G. O., Boer-Visser, A. M. den & Zee, E. A. van der (2000). Localized neuronal activation in the zebra finch brain is related to the strength of song learning. *Proc. Natl. Acad. Sci. USA*, **97**, 2282-2285.
- Bolsinger, J. S. (2000). Use of two song categories by golden-cheeked warblers. *Condor*, **102**, 539-552.
- Borowiec, M. & Lontkowski, J. (2000). Sexual selection and the evolution of song in birds of the genus *Acrocephalus*. *Biol. Bull. Poznan*, **37**, 69-77.
- Bostwick, K. S. & Zyskowski, K. (2001). Mechanical sounds and sexual dimorphism in the crested doradito. *Condor*, **103**, 861-865.
- Botas, A., Espino, G., Rosenfield, D. B. & Helekar, S. A. (2001). Reduction of female-directed song motifs induced by repeated singing in laboratory-bred zebra finches. *Neurosci. Lett.*, **297**, 203-206.
- Bottjer, S. W. (1993). The distribution of tyrosine hydroxylase immunoreactivity in the brains of male and female zebra finches. *J. Neurobiol.*, **24**, 51-69.
- Bottjer, S. W. & Arnold, A. P. (1986). The ontogeny of vocal learning in songbirds. In *Handbook of Behavioral Neurobiology* (E. M. Blass, ed). Plenum; New York, pp. 129-161.
- Bottjer, S. W., Roselinsky, H. & Tran, N. B. (1997). Sex differences in neuropeptide staining of song-control nuclei in zebra finch brains. *Brain Behav. Evol.*, **50**, 284-303.
- Bottjer, S. W. & Arnold, A. P. (1997). Developmental plasticity in neural circuits for a learned behavior. *Annu. Rev. Neurosci.*, **20**, 459-481.
- Bottjer, S. W. (1991). Neural and hormonal substrates for song learning in zebra finches. *Semin. Neurosci.*, **3**, 481-488.
- Bottjer, S. W. & Alexander, G. (1995). Localization of met-enkephalin and vasoactive intestinal polypeptide in the brains of male zebra finches. *Brain Behav. Evol.*, **45**, 153-177.
- Bottjer, S. W., Brady, J. D. & Walsh, J. P. (1998). Intrinsic and synaptic properties of neurons in the vocal control nucleus IMAN from in vitro slice preparations of juvenile and adult zebra finches. *J. Neurobiol.*, **37**, 642-658.
- Bottjer, S. W. (1997). Building a bird brain: Sculpting neural circuits for a learned behavior. *Bioessays*, **19**, 1109-1116.
- Bottjer, S. W. & Johnson, F. (1997). Circuits, hormones, and learning: vocal behavior in songbirds. *J. Neurobiol.*, **33**, 602-618.
- Bottjer, S. W., Brady, J. D. & Cribbs, B. (2000). Connections of a motor cortical region in zebra finches: Relation to pathways for vocal learning. *J. Comp. Neurol.*, **420**, 244-260.
- Bowey, K. (1995). Apparent female moustached warbler singing. *Brit. Birds*, **88**, 113.
- Brackenbury, J. H. (1989). Functions of the syrinx and control of sound production. In *Form and Function in Birds, Vol. 4* (A. S. King & J. McLelland, eds). Academic Press; San Diego, pp. 193-220.
- Bradley, R. A. (1994). Cultural change and geographic variation in the songs of the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). *Bull. South. Calif. Acad. Sci.*, **93**, 91-109.
- Brainard, M. S. & Doupe, A. J. (2000). Auditory feedback in learning and maintenance of vocal behaviour. *Nature Reviews. Neuroscience*, **1**, 31-40.
- Brainard, M. S. & Doupe, A. J. (2001). Postlearning consolidation of birdsong: Stabilizing effects of age and anterior forebrain lesions. *J. Neurosci.*, **21**, 2501-2517.
- Brainard, M. S. & Doupe, A. J. (2002). What songbirds teach us about learning. *Nature*, **417**, 351-358.
- Brainard, M. S. & Doupe, A. J. (2000). Interruption of a basal ganglia-forebrain circuit prevents plasticity of learned vocalizations. *Nature*, **404**, 762-766.
- Brainard, M. S. & Doupe, A. J. (1997). Anterior forebrain lesions eliminate deafening-induced song plasticity in

- adult finches. *Soc. Neurosci. Abstr.*, **23**, 796.
- Brainard, M. S. & Doupe, A. J. (2000). Alteration of auditory feedback causes both acute and lasting changes to Bengalese finch song. *Soc. Neurosci. Abstr.*, **26**.
- Bremond, J. C. (1986). Role of the carrier frequency in the territorial song of oscines. *Ethology*, **73**, 128-135.
- Brenowitz, E. A. (2001). Brain morphometry and behavior in the avian song control system. *Horm. Behav.*, **39**, 314.
- Brenowitz, E. A. & Lent, K. (1999). Seasonal growth of adult avian song nuclei requires afferent input. *Soc. Neurosci. Abstr.*, **25**, 864.
- Brenowitz, E. A. & Lent, K. (2000). Intracerebral implants of testosterone induce seasonal-like growth of adult avian song control circuits. *Soc. Neurosci. Abstr.*, **26**.
- Brenowitz, E. A. & Kroodsma, D. E. (1996). The neuroethology of birdsong. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 285-304.
- Brenowitz, E. A., Nalls, B., Kroodsma, D. E. & Horning, C. (1994). Female marsh wrens do not provide evidence of anatomical specializations of song nuclei for perception of male song. *J. Neurobiol.*, **25**, 197-208.
- Brenowitz, E. A. (1991). Evolution of the vocal control system in the avian brain. *Semin. Neurosci.*, **3**, 399-407.
- Brenowitz, E. A. & Lent, K. (2001). Afferent input is necessary for seasonal growth and maintenance of adult avian song control circuits. *J. Neurosci.*, **21**, 2320-2329.
- Brenowitz, E. A., Arnold, A. P. & Loesche, P. (1996). Steroid accumulation in song nuclei of a sexually dimorphic duetting bird, the rufous and white wren. *J. Neurobiol.*, **31**, 235-244.
- Brenowitz, E. A., Lent, K. & Kroodsma, D. E. (1995). Brain space for learned song in birds develops independently of song learning. *J. Neurosci.*, **15**, 6281-6286.
- Brenowitz, E. A. (1997). Comparative approaches to the avian song system. *J. Neurobiol.*, **33**, 517-531.
- Brenowitz, E. A., Baptista, L. F., Lent, K. & Wingfield, J. C. (1998). Seasonal plasticity of the song control system in wild Nuttall's white-crowned sparrows. *J. Neurobiol.*, **34**, 69-82.
- Breton, F. (1994). The bird and its meistersinger. *Recherche*, **25**, 220-221 (French).
- Breutel, G., del Negro, C. & Gahr, M. (1997). Changes in the motivation to sing and to react to song correlate with neurophysiological changes in the song control system of birds. *Adv. Ethol.*, **32**, 20.
- Briskie, J. V., Martin, P. R. & Martin, T. E. (1999). Nest predation and the evolution of nestling begging calls. *Proc. Roy. Soc. Lond. B.*, **266**, 2153-2159.
- Briskie, J. V. (1999). Song variation and the structure of local song dialects in the polygynandrous Smith's longspur. *Can. J. Zool.*, **77**, 1587-1594.
- Brouwer, J. (1993). Singing frequency over the year of skylarks and brown songlarks at Gatum, Western Victoria. *Austral. Bird Watcher*, **15**, 35-37.
- Brown, S. D. & Bottjer, S. W. (1992). Blocking steroid hormones during song learning extends the sensitive period for lesions of LMAN in juvenile male zebra finches. *Soc. Neurosci. Abstr.*, **18**, 529.
- Brown, E. D. & Farabaugh, S. M. (1997). What birds with complex social relationships can tell us about vocal learning: Vocal sharing in avian groups. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 98-127.
- Brown, T. J. & Handford, P. (1996). Acoustic signal amplitude patterns: a computer simulation investigation of the acoustic adaptation hypothesis. *Condor*, **98**, 608-623.
- Brown, J. L. (1997). Long-term memory of an auditory stimulus for food in a natural population of the Mexican jay. *Wilson Bull.*, **109**, 749-752.
- Brown, S. D., Johnson, F. & Bottjer, S. W. (1993). Neurogenesis in adult canary telencephalon is independent of gonadal hormone levels. *J. Neurosci.*, **13**, 2024-2032.
- Brumm, H. & Hultsch, H. (2001). Pattern amplitude is related to pattern imitation during song development of nightingales. *Anim. Behav.*, **61**, 747-754.
- Brumm, H. & Hultsch, H. (2001). The ontogeny of song intensity in nightingales: Pattern amplitude varies with pattern quality. *Adv. Ethol.*, **36**, 129.
- Brumm, H. & Todt, D. (2002). Noise-dependent song amplitude regulation in a territorial songbird. *Anim. Behav.*, **63**, 891-897.
- Braaten, R. F. (2000). Multiple levels of representation of song by European starlings (*Sturnus vulgaris*): Open-ended categorization of starling song types and differential forgetting of song categories and exemplars. *J. Comp. Psychol.*, **114**, 61-72.
- Braaten, R. F., Hulse, S. H. & Page, S. C. (1990). Discrimination and classification of rising and rorising pitch patterns by the European starling. *Anim. Learn. Beh.*, **18**, 352-364.
- Braaten, R. F. & Reynolds, K. (1999). Auditory preference for conspecific song in isolation-reared zebra finches. *Anim. Behav.*, **58**, 105-111.
- Buchanan, K. L. & Catchpole, C. K. (2000). Song as an indicator of male parental effort in the sedge warbler.

- Proc. Roy. Soc. Lond. B.*, **267**, 321-326.
- Buchanan, K. L. & Catchpole, C. K. (2000). Extra-pair paternity in the socially monogamous sedge warbler *Acrocephalus schoenobaenus* as revealed by multilocus DNA fingerprinting. *Ibis*, **142**, 12-20.
- Buchanan, K. L., Catchpole, C. K., Lewis, J. W. & Lodge, A. (1999). Song as an indicator of parasitism in the sedge warbler. *Anim. Behav.*, **57**, 307-314.
- Buchanan, K. L. & Catchpole, C. K. (1997). Female choice in the sedge warbler *Acrocephalus schoenobaenus*: multiple cues from song and territory quality. *Proc. R. Soc. Lond. B.*, **264**, 521-526.
- Buchfellner, E., Leppelsack, H.-J., Klump, G. M. & Haeusler, U. (1989). Gap detection in the starling (*Sturnus vulgaris*). II. Coding of gaps by forebrain neurons. *J. Comp. Physiol. A.*, **164**, 539-549.
- Budden, A. E. & Wright, J. (2001). Falling on deaf ears: the adaptive significance of begging in the absence of a parent. *Behav. Ecol. Sociobiol.*, **49**, 474-481.
- Bugnyar, T., Kijne, M. & Kotrschal, K. (2001). Food calling in ravens: are yells referential signals? *Anim. Behav.*, **61**, 949-958.
- Bugnyar, T. & Kotrschal, K. (2001). Movement coordination and signalling in ravens (*Corvus corax*): an experimental field study. *Acta Ethol.*, **3**, 101-109.
- Burek, M. J., Nordeen, K. W. & Nordeen, E. J. (1995). Estrogen promotes neuron addition to an avian song-control nucleus by regulating post-mitotic events. *Dev. Brain Res.*, **85**, 220-224.
- Burek, M. J., Nordeen, K. W. & Nordeen, E. J. (1995). DNA fragmentation characterizes sexually dimorphic cell death in the avian song system. *Neurosci. Abstr.*, **21**, 39.
- Burek, M. J., Nordeen, K. W. & Nordeen, E. J. (1994). Initial sex differences in neuron growth and survival within an avian song nucleus develop in the absence of afferent input. *J. Neurobiol.*, **27**, 85-96.
- Burek, M. J., Nordeen, K. W. & Nordeen, E. J. (1994). Ontogeny of sex differences among newly generated neurons of the juvenile avian brain. *Dev. Brain Res.*, 57-64.
- Burek, M. J., Nordeen, K. W. & Nordeen, E. J. (1995). Initial sex differences in neuron growth and survival within an avian song nucleus develop in the absence of afferent input. *J. Neurobiol.*, **27**, 85-96.
- Burford, J. E., Friedrich, T. J. & Yasukawa, K. (1998). Response to playback of nestling begging in the red-winged blackbird, *Agelaius phoeniceus*. *Anim. Behav.*, **56**, 555-561.
- Burnell, K. (1998). Cultural variation in savannah sparrow, *Passerculus sandwichensis*, songs: an analysis using the meme concept. *Anim. Behav.*, **56**, 995-1003.
- Burnell, K. & Rothstein, S. I. (1994). Variation in the structure of female brown-headed cowbird vocalizations and its relation to vocal function and development. *Condor*, **96**, 703-715.
- Burns, K. J. (1998). Molecular phylogenetics of the genus *Piranga*: Implications for biogeography and the evolution of morphology and behavior. *Auk*, **115**, 621-634.
- Burt, J. M., Trillo, P. A. & Vehrencamp, S. L. (2001). Two-way and multi-way vocal interactions in a territorial songbird. *Adv. Ethol.*, **36**, 93.
- Burt, J. M. (2000). Use of a radio microphone array to study banded wren song interactions at the neighborhood level. *J. Acoust. Soc. Am.*, **108**, 2583.
- Burt, J. M. (1999). Birdsong communication and perception: field and laboratory studies. Ph.D. dissertation. University of Washington, Seattle.
- Burt, J. M., Lent, K. L., Beecher, M. D. & Brenowitz, E. A. (2000). Lesions of the anterior forebrain song control pathway in female canaries affect song perception in an operant task. *J. Neurobiol.*, **42**, 1-13.
- Burt, J. M., Campbell, S. E. & Beecher, M. D. (2001). Song type matching as threat: a test using interactive playback. *Anim. Behav.*, **62**, 1163-1170.
- Burt, J. M., Lent, K. L., Beecher, M. D. & Brenowitz, E. A. (2000). Lesions of the anterior forebrain song control pathway in female canaries affect song perception in an operant task (erratum). *J. Neurobiol.*, **42**, 487-490.
- Butlin, R. K., Guilford, T. & Krebs, J. R., eds. (1993). The evolution and design of animal signalling systems. *Philos. Trans. R. Soc. Lond. B.*, **340**, 161-255.
- Byers, B. E. (1996). Geographic variation of song form within and among chestnut-sided warbler populations. *Auk*, **113**, 288-299.
- Byers, B. E. (1996). Messages encoded in the songs of chestnut-sided warblers. *Anim. Behav.*, **52**, 691-705.
- Byers, B. E. (1995). Song types, repertoires and song variability in a population of chestnut-sided warblers. *Condor*, **97**, 390-401.
- Byers, B. E. & King, D. I. (2000). Singing by female chestnut-sided warblers. *Wilson Bull.*, **112**, 547-550.
- Calhoun, S., Hulse, S. H., Braaten, R. F., Page, S. C. & Nelson, R. J. (1993). Responsiveness to conspecific and alien song by canaries *Serinus canaria* and European starlings *Sturnus vulgaris* as a function of photoperiod. *J. Comp. Psychol.*, **107**, 235-241.
- Cardin, J. A., Nealen, P. M. & Schmidt, M. F. (2001). Behavioral state-dependent modulation of HVC auditory responses in a restrained recording paradigm. *Soc. Neurosci. Abstr.*, **27**, 842.
- Carr, C. (2000). Locating an error correction signal for adult birdsong. *Nature Neuroscience*, **3**, 419-421.

- Casey, R. M. & Baker, M. C. (1993). Aggression and song development in white-crowned sparrows. *Condor*, **95**, 723-728.
- Casey, R. M. & Baker, M. C. (1993). Social tutoring of adult male white-crowned sparrows. *Condor*, **95**, 718-723.
- Cassidy, A. L. (1993). Song variation and learning in island populations of song sparrows. Ph.D. dissertation. University of British Columbia, Canada.
- Casto, J. M., Smulders, T. V., DeVoogd, T. J., Nolan, V., Jr. & Ketterson, E. D. (2001). Experimental manipulation of testosterone during the breeding season influences the song system of male dark-eyed juncos. *Soc. Neurosci. Abstr.*, **27**, 1708.
- Casto, J. M., Absil, P., Balthazart, J. & Hall, G. F. (1992). Autoradiographic localization of beta-adrenergic receptors in the songbird vocal control system. *Soc. Neurosci. Abstr.*, **18**, 459.
- Casto, J. M. & Ball, G. F. (1994). Characterization and localization of D1 dopamine receptors in the sexually dimorphic vocal control nucleus, area X, and the basal ganglia of European starlings. *J. Neurobiol.*, **25**, 767-780.
- Castro, J. M. & Ball, G. F. (1994). Characterization and localization of D1 dopamine receptors in the sexually dimorphic vocal control nucleus, area X, and the basal ganglia of European starlings. *J. Neurobiol.*, **25**, 767-780.
- Catchpole, C. K. (1992). Integrating playback: a wider context. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed). Plenum press; New York, pp. 35-46.
- Catchpole, C. K., Leisler, B. & Dittami, J. (1986). Sexual differences in the responses of captive great reed warblers (*Acrocephalus arundinaceus*) to variation in song structure and size. *Ethology*, **73**, 69-77.
- Catchpole, C. K. & Slater, P. J. B. (1995). *Bird Song: Biological Themes and Variations*. Cambridge University Press; Cambridge.
- Catchpole, C. K. & Leisler, B. (1996). Female aquatic warblers (*Acrocephalus paludicola*) are attracted by playback of longer and more complicated songs. *Behaviour*, **133**, 1153-1164
- Catchpole, C. K. & Komdeur, J. (1993). The song of the Seychelles warbler *Acrocephalus sechellensis*: an island endemic. *Ibis*, **135**, 190-195.
- Catchpole, C. K. (1989). Responses of male sedge warblers to playback of different repertoire sizes. *Anim. Behav.*, **37**, 1046-1047.
- Catchpole, C. K. (1996). Song and female choice: good genes and big brains? *Trends Ecol. Evol.*, **11**, 358-360.
- Catchpole, C. K. & Rowell, A. (1993). Song sharing and local dialects in a population of the European wren *Troglodytes troglodytes*. *Behaviour*, **125**, 67-78.
- Catchpole, C. K. (1988). Sexual selection and the song of the great reed warbler. In *Acta XIX Congressus Internationalis Ornithologici* (H. Ouellet, ed.). Ottawa, pp. 1366-1372.
- Catchpole, C. K. & Phillips, J. F. (1994). Song output and reproductive success in the Dartford warbler (*Sylvia undata*). *Etologia*, **4**, 77-83.
- Cate, C. ten, Slater, P. J. B. & Kruijt, J. P. (1993). Conference on song learning and imprinting: an inquiry into mechanisms of behavioural development, Haven, Netherlands, July 22-24, 1992. *Neth. J. Zool.*, **43**, 1-234.
- Cate, C. ten, Slater, P. J. B. & Kruijt, J. P. (1993). Song learning and imprinting: an inquiry into mechanisms of behavioural development. *Neth. J. Zool.*, **43**, 2-5.
- Cate, C. ten (2000). How learning mechanisms might affect evolutionary processes. *Trends Ecol. Evol.*, **15**, 179-181.
- Cate, C. ten, Vos, D. R. & Mann, N. (1993). Sexual imprinting and song learning: two of one kind? *Neth. J. Zool.*, **43**, 34-45.
- Cate, C. ten & Ballintijn, M. (1997). Behavioural mechanisms underlying vocal control in birds. *Adv. Ethol.*, **32**, 32.
- Cate, C. ten (1994). Perceptual mechanisms in imprinting and song learning. In *Causal Mechanisms of Behavioural Development* (J. A. Hogan & J. J. Bolhuis, eds.). Cambridge University Press; Cambridge, pp. 116-146.
- Chaiken, M. (2000). Rehabilitation of isolate song in adult European starlings, *Sturnus vulgaris*. *Soc. Neurosci. Abstr.*, **26**.
- Chaiken, M., Gentner, T. Q. & Hulse, S. H. (1997). Effects of social interaction on the development of starling song and the perception of these effects by conspecifics. *J. Comp. Psychol.*, **111**, 379-392.
- Chaiken, M., Boehner, J. & Marler, P. (1994). Repertoire turnover and the timing of song acquisition in European starlings. *Behaviour*, **128**, 25-39.
- Chaiken, M., Boehner, J. & Marler, P. (1993). Song acquisition in European starlings, *Sturnus vulgaris*: a comparison of the songs of live tutored, tape tutored, untutored, and wild caught males. *Anim. Behav.*, **46**, 1079-1090.
- Chandler, C. R. & Rose, R. K. (1988). Comparative analysis of the effects of visual and auditory stimuli on

- avian mobbing behavior. *J. Field Ornithol.*, **59**, 269-277.
- Cheon, S. M. & Park, S. R. (1995). Signal value of partial song (composed of 1 phrase unit) in great tits, *Parus major*: Evidence from playback experiments. *Korean J. Zool.*, **38**, 230-237.
- Chernichovski, O. & Nottebohm, F. (1998). Social inhibition of song imitation among sibling male zebra finches. *Proc. Natl. Acad. Sci. USA*, **95**, 8951-8956.
- Chew, S. J., Vicario, D. S. & Nottebohm, F. (1996). A large-capacity memory system that recognizes the calls and songs of individual birds. *Proc. Natl. Acad. Sci. USA*, **93**, 1950-1955.
- Chew, S. J., Mello, C. V., Nottebohm, F., Jarvis, E. & Vicario, D. S. (1995). Decrements in auditory responses to a repeated conspecific song are long-lasting and require two periods of protein synthesis in the songbird forebrain. *Proc. Natl. Acad. Sci. USA*, **92**, 3406-3410.
- Chew, S. J., Jarvis, E. D., Mello, C. V., Vicario, D. S. & Nottebohm, F. (1995). Long-term neuronal memories for novel conspecific songs require new gene expression in songbird auditory forebrain. *Soc. Neurosci. Abstr.*, **21**, 959.
- Chew, S. J., Vicario, D. S. & Nottebohm, F. (1996). Quantal duration of auditory memories. *Science*, **274**, 1909-1914.
- Chi, Z. & Margoliash, D. (2001). Temporal precision and temporal drift in brain and behavior of zebra finch song. *Neuron*, **32**, 899-910.
- Chi, Z. & Margoliash, D. (2000). Neural and behavioral drift in timing of zebra finch song: a circadian component to song maintenance? *Soc. Neurosci. Abstr.*, **26**.
- Chilton, G., Wiebe, M. O. & Handford, P. (2002). Large-scale geographic variation in songs of Gambel's white-crowned sparrows. *Condor*, **104**, 387-386.
- Chilton, G. & Lein, M. R. (1996). Songs and sexual responses of female white-crowned sparrows (*Zonotrichia leucophrys*) from a mixed-dialect population. *Behaviour*, **133**, 173-198.
- Chilton, G. & Lein, M. R. (1996). Long-term changes in songs and song dialect boundaries of Puget Sound white-crowned sparrows. *Condor*, **98**, 567-580.
- Chilton, G. & Lein, M. R. (1996). Song repertoires of Puget Sound white-crowned sparrows *Zonotrichia leucophrys pugetensis*. *J. Avian Biol.*, **27**, 31-40.
- Chu, M. (2001). Heterospecific responses to scream calls and vocal mimicry by phainopeplas (*Phainopepla nitens*) in distress. *Behaviour*, **138**, 775-787.
- Chu, M. (2001). Vocal mimicry in distress calls of phainopeplas. *Condor*, **103**, 389-395.
- Cicero, C. & Benowitz-Fredericks, Z. M. (2000). Song types and variation in insular populations of Lincoln's sparrow (*Melospiza lincolni*), and comparisons with other *Melospiza*. *Auk*, **117**, 52-54.
- Clark, C. W., Marler, P. & Beeman, K. (1987). Quantitative analysis of animal vocal phonology: an application to swamp sparrow song. *Ethology*, **76**, 101-115.
- Clark, A. B. & Lee, W.-H. (1998). Red-winged blackbird females fail to increase feeding in response to begging call playbacks. *Anim. Behav.*, **56**, 563-570.
- Clayton, N. S. (1987). Song learning in Bengalese finches: a comparison with zebra finches. *Ethology*, **76**, 247-255.
- Clayton, D. F. (1997). Role of gene regulation in song circuit development and song learning. *J. Neurobiol.*, **33**, 549-571.
- Cleal, K. S., Allan, S., King, A. P., Sengelaub, D. R. & West, M. J. (1996). IMAN volume correlates with female selectivity in cowbirds. *Soc. Neurosci. Abstr.*, **22**, 1401.
- Clemmons, J. & Howitz, J. L. (1990). Development of early vocalizations and the chick-a-dee call in the black-capped chickadee, *Parus atricapillus*. *Ethology*, **86**, 203-223.
- Clemmons, J. R. (1995). Development of a selective response to an adult vocalization in nestling black-capped chickadees. *Behaviour*, **132**, 1-20.
- Clemmons, J. R. (1995). Vocalizations and other stimuli that elicit gaping in nestling black-capped chickadees (*Parus atricapillus*). *Auk*, **112**, 603-612.
- Clemmons, J. R. (1997). The structural significance of a vocalization that stimulates gaping in black-capped chickadees. *Behav. Ecol. Sociobiol.*, **40**, 243-251.
- Clotfelter, E. D. (1998). What cues do brown-headed cowbirds use to locate red-winged blackbird host nests? *Anim. Behav.*, **55**, 1181-1189.
- Coleman, M. J., Sule, P. J. & Vu, E. T. (1999). Recovery of impaired songs following unilateral but not bilateral lesions of nucleus uvaformis of adult zebra finches. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Coleman, M. J. & Vu, E. T. (2001). Uva lesions affect the auditory responsiveness of Hvc neurons in awake zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Coleman, M. J. & Vu, E. T. (2000). Neural activity in HVC of adult zebra finches during the song recovery following unilateral lesion of nucleus uvaformis. *Soc. Neurosci. Abstr.*, **26**.
- Collias, N. E. (2000). Vocal signals of the willage weaver: a spectrographic key and the communication code. *Condor*, **102**, 60-80.

- Collins, C. E. & Houtman, A. M. (1999). Tan and white color morphs of white-throated sparrows differ in their non-song vocal responses to territorial intrusion. *Condor*, **101**, 842-845.
- Collins, S. A. (1999). Is female preference for male repertoires due to sensory bias? *Proc. Roy. Soc. Lond. B.*, **266**, 2309-2314.
- Collins, C. E., Wallhaeusser-Franke, E., Clower, R. P. & DeVoogd, T. J. (1993). Development of song system nucleus HVC in juvenile male zebra finches deprived of song. *Soc. Neurosci. Abstr.*, **19**, 1449.
- Collins, S. A., Hubbard, C. & Houtman, A. M. (1994). Female mate choice in the zebra finch - the effect of male beak colour and male song. *Behav. Ecol. Sociobiol.*, **35**, 21-25.
- Comolet-Tirman, J. (1994). Does the redstart *Phoenicurus phoenicurus* mimic bird species heard during migration? *Bioacoustics*, **6**, 73-79.
- Conover, M. R. (1994). Stimuli eliciting distress calls in adult passerines and response of predators and birds to their broadcast. *Behaviour*, **131**, 19-37.
- Conrads, K. (1986). Stability and changes in a song dialect of the chaffinch (*Fringilla coelebs*) in the period 1964/66 to 1982/83 in Ostwestfalen. *Ber. Naturwiss. Verein Bielefeld u. Umgegend*, **28**, 191-212 (German).
- Cooney, R. & Cockburn, A. (1995). Territorial defence is the major function of female song in the superb fairy-wren, *Malurus cyaneus*. *Anim. Behav.*, **49**, 1635-1647.
- Coopmans, P., Krabbe, N., & Schulenberg, T. S. (2001). Vocal evidence of species rank for nominate unicolor tapaculo *Scytalopus unicolor*. *Bull. Brit. Ornithol. Club*, **121**, 208-213.
- Cotanche, D. A. (1999). Structural recovery from sound and aminoglycoside damage in the avian cochlea. *Audiol. Neuro-Otol.*, **4**, 271-285.
- Cresswell, W. (1994). Song as a pursuit deterrent signal, and its occurrence relative to other anti-predation Behaviours of skylark (*Alauda arvensis*) on attack by merlins (*Falco columbarius*). *Behav. Ecol. Sociobiol.*, **34**, 217-223.
- Cucco, M. & Malacarne, G. (2000). Delayed maturation in passerine birds: an examination of plumage effects and some indications of a related effect in song. *Ethol. Ecol. Evol.*, **12**, 291-308.
- Cucco, M. & Malacarne, G. (1999). Is the song of the black redstart males an honest signal of status? *Condor*, **101**, 689-693.
- Cugurra, F. (1998). Effects of two anti-anxiety drugs on the memory of *Gracula religiosa intermedia* (Passeriformes, Sturnidae): a preliminary note. *Ital. J. Zool.*, **65**, 175-176.
- Cunningham, R. B., Lindenmayer, D. B., Nix, H. A. & Lindenmayer, B. D. (1999). Quantifying observer heterogeneity in bird counts. *Aust. J. Ecol.*, **24**, 270-277.
- Curio, E. (1998). Alarm calls and chick reaction: comments on Kleindorfer et al. (1996). *Anim. Behav.*, **56**, 260-261.
- Currie, D. R., Burke, T., Whitney, R. L. & Thompson, D. B. A. (1998). Male and female behaviour and extra-pair paternity in the wheatear. *Anim. Behav.*, **55**, 689-703.
- Cuthill, I. C. & Macdonald, W. A. (1990). Experimental manipulation of the dawn and dusk chorus in the blackbird *Turdus merula*. *Behav. Ecol. Sociobiol.*, **26**, 209-216.
- Cygan, J. P. & Jablonski, P. G. (2000). Painted redstart (*Myioborus pictus*) song: Preliminary analysis of song production rate. *Biol. Bull. Poznan*, **37**, 79-82.
- Cynx, J. (1995). Similarities in absolute and relative pitch perception in songbirds (starling and zebra finch) and a nonsongbird (pigeon). *J. Comp. Psychol.*, **109**, 261-267.
- Cynx, J. (1993). Auditory frequency generalization and a failure to find octave generalization in a songbird, the European starling (*Sturnus vulgaris*). *J. Comp. Psychol.*, **107**, 140-146.
- Cynx, J., Hulse, S. H. & Polyzois, S. (1986). A psychophysical measure of pitch discrimination loss resulting from a frequency range constraint in European starlings (*Sturnus vulgaris*). *J. Exp. Psychol: Anim. Behav. Processes*, **12**, 394-402.
- Cynx, J., Williams, H. & Nottebohm, F. (1990). Timbre discrimination in zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **107**, 303-308.
- Cynx, J. (1993). Conspecific song perception in zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **107**, 395-402.
- Cynx, J. & von Rad, U. (2001). Immediate and transitory effects of delayed auditory feedback on bird song production. *Anim. Behav.*, **62**, 305-312.
- Cynx, J., Lewis, R., Tavel, B. & Tse, H. (1998). Amplitude regulation of vocalizations in noise of a songbird, *Taeniopygia guttata*. *Anim. Behav.*, **56**, 107-113.
- Cynx, J. (1990). Experimental determination of a unit of song production in the zebra finch (*Taeniopygia guttata*). *J. Comp. Psychol.*, **104**, 3-10.
- Cynx, J. (2001). Effects of humidity on reproductive behavior in male and female zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **115**, 196-200.
- Cynx, J. & Clark, S. (1998). The laboratory use of conditional and natural responses in the study of avian

- auditory perception. In *Animal Acoustic Communication* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer-Verlag; Berlin, pp. 353-377.
- Dabelsteen, T., McGregor, P., Lampe, H. M., Langmore, N. & Holland, J. (1998). Quiet song in song birds: An overlooked phenomenon. *Bioacoustics*, **9**, 89-105.
- Dabelsteen, T. & McGregor, P. K. (1996). Dynamic acoustic communication and interactive playback. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 398-408.
- Dabelsteen, T., McGregor, P. K., Holland, J., Tobias, J. A. & Pedersen, S. B. (1997). The signal function of overlapping singing in male robins. *Anim. Behav.*, **53**, 249-256.
- Dabelsteen, T., Larsen, O. N. & Pedersen, S. B. (1989). Quantification of sound degradation in the biotope. In *Neural Mechanisms of Behaviour: Proceedings of the 2nd International Congress of NeuroEthology* (J. Erber, R. Menzel, H.-J. Pflueger & D. Todt, eds.). Georg Thieme Verlag; Stuttgart, New York, p. 112.
- Dabelsteen, T. & Pedersen, S. B. (1993). Song based species discrimination and behaviour assessment by female blackbirds *Turdus merula*. *Anim. Behav.*, **45**, 759-771.
- Dabelsteen, T. & Mathevon, N. (2002). Why do songbirds sing intensively at dawn? A test of the acoustic transmission hypothesis. *Acta Ethol.*, **4**, 65-72.
- Dabelsteen, T., Larsen, O. N. & Pedersen, S. B. (1993). Habitat induced degradation of sound signals: quantifying the effects of communication sounds and bird location on blur ratio, excess attenuation and signal-to-noise ratio in blackbird song. *J. Acoust. Soc. Am.*, **93**, 2206-2220.
- Dabelsteen, T., McGregor, P. K., Shepherd, M., Whittaker, X. & Pedersen, S. B. (1996). Is the signal value of overlapping different from that of alternating during matched singing in great tits? *J. Avian Biol.*, **27**, 189-194.
- Dale, S., Amundsen, T., Lifjelt, J. T. & Slagsvold, T. (1990). Mate sampling behaviour of female pied flycatchers: evidence for active mate choice. *Behav. Ecol. Sociobiol.*, **27**, 87-91.
- Daley, M. A. & Goller, F. (2000). Tracheal length changes and upper vocal tract resonances during zebra finch song. *Soc. Neurosci. Abstr.*, **26**.
- Date, E. M. & Lemon, R. E. (1993). Sound transmission: a basis for dialects in birdsong? *Behaviour*, **124**, 291-312.
- Dave, A. S. & Margoliash, D. (2000). Song replay during sleep and computational rules for sensorimotor vocal learning. *Science*, **290**, 812-816.
- Dave, A. S. & Margoliash, D. (2000). Sensorimotor mapping and neuronal replay of song during sleep: a model of reinforcement learning for birdsong. *Soc. Neurosci. Abstr.*, **26**.
- Dave, A., Yu, A. C. & Margoliash, D. (1998). Behavioral state modulation of auditory activity in a vocal motor system. *Science*, **282**, 2250-2254.
- Davidson, W. R. & Langmore, N. E. (1991). Variation in the male whip-crack of the eastern whipbird *Psophodes olivaceus*. *Austral. Bird Watcher*, **14**, 82-84.
- Davis, W. E. (1991). Evolution of distress calls in birds: still an enigma. *Bird. Obs.*, **19**, 187-190.
- Dearborn, D. C. (1999). Brown-headed cowbird nestling vocalizations and risk of nest predation. *Auk*, **116**, 448-457.
- Del Negro, C. & Edeline, J. M. (2001). Differences in auditory and physiological properties of HVC neurons between reproductively active male and female canaries (*Serinus canaria*). *Eur. J. Neurosci.*, **14**, 1377-1389.
- Del Negro, C., Kreutzer, M. & Gahr, M. (2000). Sexually stimulating signals of canary (*Serinus canaria*) songs: Evidence for a female-specific auditory representation in the HVC nucleus during the breeding season. *Behav. Neurosci.*, **114**, 526-542.
- Del Negro, C. & Edeline, J. M. (2001). Sexual differences in HVC neuron properties in canary. *Soc. Neurosci. Abstr.*, **27**, 1709.
- Del Negro, C., Gahr, M., Leboucher, G. & Kreutzer, M. (1998). The selectivity of sexual responses to song displays: effects of partial chemical lesion of the HVC in female canaries. *Behav. Brain Res.*, **96**, 151-159.
- Delman, S. & Lotem, A. (1997). Variations in the structure of begging vocalisations in relation to hunger and body posture in house sparrow (*Passer domesticus*) nestlings. *Adv. Ethol.*, **32**, 241.
- Deng, C., Kaplan, G. & Rogers, L. J. (2001). Similarity of the song nuclei of male and female Australian magpies (*Gymnorhina tibicen*). *Behav. Brain Res.*, **123**, 89-102.
- Denisenko-Nehrbass, N. I. & Mello, C. V. (2001). Molecular targets of disulfiram action on song maturation in zebra finches. *Mol. Brain Res.*, **87**, 246-250.
- Denisenko-Nehrbass, N. I., Jarvis, E., Scharff, C., Nottebohm, F. & Mello, C. V. (2000). Site-specific retinoic acid production in the brain of adult songbirds. *Neuron*, **27**, 359-370.
- Depraz, V., Leboucher, G., Nagle, L. & Kreutzer, M. (1997). Sexy songs of male canaries: are they necessary for

- female nest-building? *Adv. Ethol.*, **32**, 122.
- Depraz, V., Leboucher, G. & Kreutzer, M. (2000). Early tutoring and adult reproductive behaviour in female domestic canary (*Serinus canaria*). *Anim. Cogn.*, **3**, 45-51.
- Derrickson, K. C. (1987). Yearly and situational changes in the estimate of repertoire size in northern mockingbirds (*Mimus polyglottos*). *Auk*, **104**, 198-207.
- Deviche, P., Dlaniak, S. M. & Ebbesson, S. E. (1999). Effects of testosterone and photoperiodic condition on vocal control region plasticity and song production in a male passerine bird. *Soc. Neurosci. Abstr.*, **25**, 865.
- Deviche, P. J., Bentley, G. E. & Ball, G. F. (2000). Photoperiod-dependent and -independent regulation of melatonin receptors in area X of songbirds: effect of reproductive state and interpretation of sex and species differences. *Soc. Neurosci. Abstr.*, **26**.
- Deviche, P. & Gullledge, C. C. (2000). Vocal control region sizes of an adult female songbird change seasonally in the absence of detectable circulating testosterone concentrations. *J. Neurobiol.*, **42**, 202-211.
- Devoogd, T. J., Krebs, J. R., Healy, S. D. & Purvis, A. (1993). Relations between song repertoire size and the volume of brain nuclei related to song: comparative evolutionary analyses amongst oscine birds. *Proc. Roy. Soc. Lond. Ser. B. Biol. Sci.*, **254**, 75-82.
- DeVoogd, T. J. & Szekely, T. (1998). Causes of avian song: using neurobiology to integrate proximate and ultimate levels of analysis. In *Animal Cognition in Nature* (R. P. Balda and I. M. Pepperberg, eds.). Academic Press; San Diego, pp. 337-380.
- DeVoogd, T. J., Houtman, A. M. & Falls, J. B. (1995). White-throated sparrow morphs that differ in song production rate also differ in the anatomy of some song-related brain areas. *Neurobiology*, **28**, 202-213.
- DeVoogd, T. J. (1994). The neural basis for the acquisition and production of bird song. In *Causal Mechanisms of Behavioural Development* (J. A. Hogan & J. L. Bolhuis, eds.). Cambridge University Press; Cambridge, pp. 49-81.
- DeWolfe, B. B. & Baptista, L. F. (1995). Singing behavior, song types on their wintering grounds and the question of leap-frog migration in Puget Sound white-crowned sparrows. *Condor*, **97**, 376-389.
- DeWulf, V. & Bottjer, S. W. (2002). Age and sex differences in mitotic activity within the zebra finch telencephalon. *J. Neurosci.*, **22**, 4080-4094.
- Dhondt, A. A., Lambrechts, M. M. & Bijmens, L. (1989). Acoustic communication in birds and its differences from human language. In *Studies of Language Origins* (J. Wind, E. G. Pulleyblank, E. de Grolier & B. H. Bichakjian, eds.). John Benjamins; Amsterdam, pp. 273-281.
- Diamond, J. (1998). Geographic variation in vocalisations of the white-eye superspecies *Zosterops [Griseotinctus]* in the New Georgia group. *Emu*, **98**, 70-74.
- Dierschke, V. (1994). Calling activity of migrating tree pipits *Anthus trivialis* and yellow wagtails *Motacilla flava*. *Vogelwelt*, **115**, 15-18 (German).
- Ding, L. & Perkel, D. J. (2001). Physiological actions of dopamine in area X of the zebra finch in vitro. *Soc. Neurosci. Abstr.*, **27**, 1424.
- Dittrich, F., Feng, Y., Metzendorf, R. & Gahr, M. (1999). Estrogen-inducible, sex-specific expression of brain-derived neurotrophic factor mRNA in a forebrain song control nucleus of the juvenile zebra finch. *Proc. Natl. Acad. Sci. USA*, **96**, 8241-8246.
- Dlaniak, S. M. & Deviche, P. (1999). Chronic opioid receptor blockade does not affect song production or vocal control region volumes in adult male dark-eyed juncos (*Junco hyemalis*). *Soc. Neurosci. Abstr.*, **25**, 865.
- Dlaniak, S. M. & Deviche, P. (2001). Effects of testosterone and photoperiodic condition on song production and vocal control region volumes in adult male dark-eyed juncos (*Junco hyemalis*). *Horm. Behav.*, **39**, 95-105.
- Donaghey, B. A. (1995). Individual recognition in response to song playback in male and female wild mockingbirds (*Mimus polyglottos*). Unpubl. master's thesis. Emory University; Atlanta, Georgia.
- Dooling, R. J. (1991). Hearing in birds. In *The Evolutionary Biology of Hearing* (D. Webster, R. Fay & A. Popper, eds.). Springer Verlag; New York, pp. 545-559.
- Dooling, R. J. & Okanoya, K. (1995). The method of constant stimuli in testing auditory sensitivity in small birds. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 155-164.
- Dooling, R. J., Best, C. T. & Brown, S. D. (1995). Discrimination of synthetic full-formant and sinewave /ra-la/ continua by budgerigars (*Melopsittacus undulatus*) and zebra finches (*Taeniopygia guttata*). *J. Acoust. Soc. Am.*, **97**, 1839-1846.
- Dooling, R. J. & Ryals, B. M. (1997). Auditory perception and plasticity in the avian auditory system. *J. Acoust. Soc. Am.*, **101**, 3191.
- Doupe, A. J. & Solis, M. M. (1997). Song- and order-selective neurons develop in the songbird anterior

- forebrain during vocal learning. *J. Neurobiol.*, **33**, 694-709.
- Doupe, A. J. (1997). Song- and order-selective neurons in the songbird anterior forebrain and their emergence during vocal development. *J. Neurosci.*, **17**, 1147-1167.
- Doupe, A. J. & Kuhl, P. K. (1999). Birdsong and human speech: common themes and mechanisms. *Ann. Rev. Neurosci.*, **22**, 567-631.
- Doupe, A. J. & Solis, M. M. (1999). Song- and order-selective auditory response emerge in neurons of the songbird anterior forebrain during vocal learning. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 343-368.
- Doupe, A. J. & Konishi, M. (1992). Song selective auditory neurons emerge during vocal learning in the zebra finch. *Soc. Neurosci. Abstr.*, **18**, 527.
- Doupe, A. J. (1994). Specialized neural circuits for song learning: Song-selective neurons and their emergence during vocal development. *J. Ornithol.*, **135**, 425.
- Doupe, A. J. (1993). A neural circuit specialised for vocal learning. *Curr. Opin. Neurobiol.*, **3**, 104-111.
- Doutrelant, C. & Lambrechts, M. M. (2001). Macrogeographic variation in song: A test of competition and habitat effects in blue tits. *Ethology*, **107**, 533-544.
- Doutrelant, C., Blondel, J., Perret, P. & Lambrechts, M. M. (2000). Blue tit song repertoire size, male quality and interspecific competition. *J. Avian Biol.*, **31**, 360-366.
- Doutrelant, C., Leitao, A., Otter, K. & Lambrechts, M. M. (2000). Effect of blue tit song syntax on great tit territorial responsiveness: An experimental test of the character shift hypothesis. *Behav. Ecol. Sociobiol.*, **48**, 119-124.
- Doutrelant, C., Lemaitre, O. & Lambrechts, M. M. (2001). Song variation in blue tit *Parus caeruleus* populations from Corsica and mainland southern France. *Ardea*, **89**, 375-385.
- Doutrelant, C., Leitao, A., Giorgi, M., Lambrechts, M. M. (1999). Geographical variation in blue tit song, the result of an adjustment to vegetation type? *Behaviour*, **136**, 481-494.
- Doutrelant, C., Aubin, T., Hitier, S. & Lambrechts, M. M. (1998). Two distinct song populations of blue tit *Parus caeruleus* in the French Mediterranean. *Bioacoustics*, **9**, 1-16.
- Dowsett-Lemaire, F. (1994). The song of the Seychelles warbler *Acrocephalus sechellensis* and its African relatives. *Ibis*, **136**, 489-491.
- Drew, P. J. & Abbott, L. F. (2001). Modeling temporal combination selective neurons in the songbird. *Soc. Neurosci. Abstr.*, **27**, 842.
- Dudzinski, K. M. et al. (1991). The pine warbler song repertoire: a preliminary description and analysis. *Bull. Texas Ornithol. Soc.*, **24**, 30-38.
- Duffy, D. L. & Ball, G. F. (2002). Song predicts immunocompetence in male European starlings (*Sturnus vulgaris*). *Proc. Roy. Soc. Lond. B.*, **269**, 847-852.
- Duffy, D. L., Bentley, G. E. & Ball, G. F. (1999). Does sex or photoperiodic condition influence ZENK induction in response to song in European starlings? *Brain Res.*, **844**, 78-82.
- Dufty Jr., A. M. & Hanson, A. (1999). Vocal and behavioral responses of brown-headed cowbirds to flight whistles from different dialects. *Condor*, **101**, 484-492.
- Dufty, A. M., Jr. (1994). Vocalizations and brown-headed cowbird behavior. *J. Ornithol.*, **135**, 463.
- Dufty, A. M. Jr. (1986). Singing and the establishment and maintenance of dominance hierarchies in captive brown-headed cowbirds. *Behav. Ecol. Sociobiol.*, **19**, 49-55.
- Dufty, A. M., Jr. & Pugh, J. K. (1994). Response of male brown-headed cowbirds to broadcast of complete or partial flight whistles. *Auk*, **111**, 734-739.
- Duguay, J. P. & Ritchison, G. (1998). A contextual analysis of singing behavior in male tufted titmice. *J. Field Ornithol.*, **69**, 85-94.
- Dunn, A. M. & Zann, R. A. (1997). Effects of pair bond and presence of conspecifics on singing in captive zebra finches. *Behaviour*, **134**, 127-142.
- Dunn, A. M. & Zann, R. A. (1996). Undirected song in wild zebra finch flocks: Contexts and effects of mate removal. *Ethology*, **102**, 529-539.
- Dunn, A. M. & Zann, R. A. (1996). Undirected song encourages the breeding female zebra finch to remain in the nest. *Ethology*, **102**, 540-548.
- Durand, S. E., Zuo, M. X., Zhou, S. L. & Cheng, M. F. (1993). Avian auditory pathways show met-enkephalin-like immunoreactivity. *NeuroReport*, **4**, 727-730.
- Duyse, E. van, Pinxten, R. & Eens, M. (2000). Does testosterone affect the trade-off between investment in sexual/territorial behaviour and parental care in male great tits? *Behaviour*, **137**, 1503-1515.
- Duyse, E. van, Pinxten, R. & Eens, M. (2002). Effects of testosterone on song, aggression, and nestling feeding behavior in male great tits, *Parus major*. *Horm. Behav.*, **41**, 178-186.
- Eberhardt, L. S. (1996). Energy expenditure during singing: A reply to Gaunt et al. *Auk*, **113**, 721-723.
- Eberhardt, L. S. (1994). Oxygen consumption during singing by male Carolina wrens (*Thryothorus ludovicianus*). *Auk*, **111**, 124-130.

- Eens, M. (1997). Understanding the complex song of the European starling: an integrated approach. *Adv. Study Behav.*, **26**, 355-434.
- Eens, M., Pinxten, R. & Verheyen, R. F. (1993). Function of the song and song repertoire in the European starling *Sturnus vulgaris*: an aviary experiment. *Behaviour*, **125**, 51-66.
- Eens, M., Pinxten, R. & Verheyen, R. F. (1994). Variation in singing activity during the breeding cycle of the European starling *Sturnus vulgaris*. *Belg. J. Zool.*, **124**, 167-174.
- Eens, M., Pinxten, R. & Verheyen, R. F. (1992). Song learning in captive European starlings, *Sturnus vulgaris*. *Anim. Behav.*, **44**, 1131-1143.
- Eens, M. & Pinxten, R. (1998). Female song for mate attraction: an overlooked phenomenon? *Trends Ecol. Evol.*, **13**, 322-323.
- Einstein, J. (1995). Abnormal song in garden warbler (*Sylvia borin*) in two breeding seasons at Federsee. *Orn. Jh. Bad.-Wuertt.*, **11**, 229-230 (German).
- Elekovich, M. M. (1998). Song sparrow males use female-typical vocalizations in fall. *Condor*, **100**, 145-148.
- Elmberg, J. (1993). Song differences between North American and European white-winged crossbills (*Loxia leucoptera*). *Auk*, **110**, 385.
- Elmberg, J. (1992). Song-types of two-barred crossbills. *Birding World*, **5(5)**, 193.
- Enggist, P. (1997). Dialects in ravens *Corvus corax*: new aspects of an old problem. *Bioacoustics*, **8**, 255.
- Enggist-Dueblin, P. & Pfister, U. (1997). Communication in ravens (*Corvus corax*): call use in interactions between pair partners. *Adv. Ethol.*, **32**, 122.
- Eriksson, D. (1991). *The significance of song for species recognition and mate choice in the pied flycatcher, Ficedula hypoleuca*. Ph.D. dissertation. Uppsala University; Uppsala.
- Ernst, S. (1991). On the song of the willow tit *Parus montanus* in eastern Altai. *Monticola*, **6**, 178-182 (German).
- Espino, G. G., Botas, A., Rosenfield, D. B. & Helekar, S. A. (2000). Adult phase song plasticity in zebra finches triggered by a change in song patterns in their social environment. *Soc. Neurosci. Abstr.*, **26**.
- Espino, G. G., Lewis, C., Rosenfield, D. B. & Helekar, S. A. (2001). Modulation of predominant alpha/theta frequency profiles in slow auditory evoked responses of zebra finches. *Soc. Neurosci. Abstr.*, **27**, 843.
- Espmark, Y. O. & Lampe, H. M. (1993). Variations in the song of the pied flycatcher within and between breeding seasons. *Bioacoustics*, **5**, 33-65.
- Espmark, Y. (1999). Song of the snow bunting (*Plectrophenax nivalis*) in areas with and without sympatric passerines. *Can. J. Zool.*, **77**, 1385-1392.
- Espmark, Y. (1995). Individual and local variations in the song of the snow bunting (*Plectrophenax nivalis*) on Spitsbergen. *Bioacoustics*, **6**, 117-133.
- Etman, E. & ten Cate, C. (2001). Is there a role for 'peak-shift' in the evolution of song? *Adv. Ethol.*, **36**, 150.
- Evans, W. R. (1994). Nocturnal flight call of Bicknell's thrush. *Wilson Bull.*, **106**, 55-61.
- Ewert, D. N. & Kroodsma, D. E. (1994). Song sharing and repertoires among migratory and resident rufous-sided towhees. *Condor*, **96**, 190-196.
- Fairbairn, S. (1993). Superb lyrebirds in territorial dispute. *Astral. Birds*, **17**, 11.
- Falls, J. B. (1992). Playback: A historical perspective. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 11-34.
- Farries, M. A. & Perkel, D. J. (2002). A telencephalic nucleus essential for song learning contains neurons with physiological characteristics of both striatum and globus pallidus. *J. Neurosci.*, **22**, 3776-3787.
- Farries, M. A. (2001). The oscine song system considered in the context of the avian brain: lessons learned from comparative neurobiology. *Brain Behav. Evol.*, **58**, 80-100.
- Farries, M. A., Ding, L. & Perkel, D. J. (2000). Physiological properties of synapses in area X of the zebra finch. *Soc. Neurosci. Abstr.*, **26**.
- Fee, M. S., Shraiman, B., Pesaran, B. & Mitra, P. P. (1998). The role of nonlinear dynamics of the syrinx in the vocalizations of a songbird. *Nature*, **395**, 67-71.
- Fenske-Crawford, T. J. (1995). Red-eyed vireo incorporates call of broad-winged hawk. *Loon*, **67**, 249.
- Fessl, B. & Hoi, H. (1996). The significance of a two part song in the moustached warbler (*Acrocephalus melanopogon*). *Ethol. Ecol. Evol.*, **8**, 265-278.
- Fessl, B. & Hoi, H. (2000). Song complexity and song structure in the moustached warbler *Acrocephalus melanopogon*. *J. Avian Biol.*, **31**, 144-150.
- Few, P., Nowicki, S., Woolley, S. & Peters, S. (1996). Attrition during song learning in the absence of imitation is facilitated by a socially enriched environment. *Am. Zool.*, **36**, 92A.
- Ficken, M. S., Hailman, E. D. & Hailman, J. P. (1994). The chick-a-dee call system of the Mexican chickadee. *Condor*, **96**, 70-82.
- Ficken, M. S. & Popp, J. (1996). A comparative analysis of passerine mobbing calls. *Auk*, **113**, 370-380.
- Ficken, M. S. & Popp, J. W. (1995). Long-term persistence of a culturally transmitted vocalization of the black-capped chickadee. *Anim. Behav.*, **50**, 683-693.
- Ficken, M. S. (1989). Acoustic characteristics of alarm calls associated with predation risk in chickadees. *Anim.*

- Behav.*, **39**, 400-401.
- Fieder, M. & Dittami, J. P. (1994). The role of testosterone in chaffinch song learning. *J. Ornithol.*, **135** (Sonderheft), 159.
- Fiore, M., Clayton, N. S., Pistillo, L., Angelucci, F., Alleva, E. & Aloe, L. (1999). Song behavior, NGF level and NPY distribution in the brain of adult male zebra finches. *Behav. Brain Res.*, **101**, 85-92.
- Fischer, S. (1993). An atypically singing chaffinch (*Fringilla coelebs*) at Lake Mueggelsee (Berlin). *Berliner Orn. Ber.*, **3**, 38-43.
- Fischer, S., Frommolt, K.-H. & Tembrock, G. (1996). Variability of song in the great reed warbler *Acrocephalus arundinaceus*. *J. Orn.*, **137**, 503-513 (German).
- Fischer, S. (1994). Temporal and sequential organization of song in the great reed warbler *Acrocephalus arundinaceus*. *Bioacoustics*, **6**, 70-71.
- Fischer, S. (1993). Seasonal patterns of breeding and song production of the great reed warbler (*Acrocephalus arundinaceus*): With indications to the methods of mapping. *Berliner Orn. Ber.*, **3**, 9-20 (German).
- Fitch, W. T. (1999). Acoustic exaggeration of size in birds via tracheal elongation: Comparative and theoretical analyses. *J. Zool.*, **248**, 31-48.
- Fitri, L. L., Kreutzer, M., Bemé, I. & Durand, J. L. (1997). Dominance hierarchy, testosterone, behaviour, and singing performance in male canaries (*Serinus canarius*). *Adv. Ethol.*, **32**, 63.
- Fitri, L. L., Beme, I. & Kreutzer, M. (1997). The measurement of hierarchy of the canary *Serinus canaria* in the laboratory. *Bioacoustics*, **8**, 269-270.
- Fitter, R. S. R. (1996). Aberrant song of common whitethroat. *Brit. Birds*, **89**, 240.
- Fletcher, N. H. & Tarnopolsky, A. (1999). Acoustics of the avian vocal tract. *J. Acoust. Soc. Am.*, **105**, 35-56.
- Fletcher, N. H. (1989). Acoustics of bird song - some unresolved problems. *Comments Theor. Biol.*, **1**, 237-251.
- Floody, O. R. & Arnold, A. P. (1997). Song lateralization in the zebra finch. *Horm. Behav.*, **31**, 25-34.
- Foidart, A. & Balthazart, J. (1995). Sexual differentiation of brain and behavior in quail and zebra finches: Studies with a new aromatase inhibitor, R76713. *J. Steroid Biochem. Mol. Biol.*, **53**, 267-275.
- Forsman, J. T. & Moenkkonen, M. (2001). Responses by breeding birds to heterospecific song and mobbing call playbacks under varying predation risk. *Anim. Behav.*, **62**, 1067-1073.
- Forstmeier, W. & Balsby, T. J. S. (2002). Why mated dusky warblers sing so much: Territory guarding and male quality announcement. *Behaviour*, **139**, 89-111.
- Fortune, E. S. & Margoliash, D. (1992). Multiple auditory pathways into HVC. *Soc. Neurosci. Abstr.*, **18**, 1193.
- Fortune, E. S. & Margoliash, D. (1995). Parallel pathways and convergence onto HVC and adjacent neostriatum of adult zebra finches (*Taeniopygia guttata*). *J. Comp. Neurol.*, **360**, 413-441.
- Fortune, E. S. & Margoliash, D. (1992). Cytoarchitectonic organization and morphology of cells of the Field L complex in male zebra finches (*Taeniopygia guttata*). *J. Comp. Neurol.*, **325**, 388-404.
- Foster, E. F. & Bottjer, S. W. (1992). Axonal connections of a forebrain nucleus in male zebra finches. *Soc. Neurosci. Abstr.*, **18**, 528.
- Foster, E. F. & Bottjer, S. W. (2001). Lesions of a telencephalic nucleus in male zebra finches: Influences on vocal behavior in juveniles and adults. *J. Neurobiol.*, **46**, 142-165.
- Fotheringham, J. R., Martin, P. R. & Ratcliffe, L. (1997). Song transmission and auditory perception of distance in wood warblers (Parulinae). *Anim. Behav.*, **53**, 1271-1285.
- Fotheringham, J. (1993). *Analysis of signal degradation in transmission of black-capped chickadee song and response of males to the playback of "near" and "far" conspecific song*. BSc. (Honours) Thesis, Queen's University; Kingston, Ontario.
- Fotheringham, J. R. (1995). Differences in singing behavior between rufous-collared sparrows in Costa Rica and northwestern Argentina. *Condor*, **97**, 821-826.
- Fotheringham, R. J. & Ratcliffe, L. (1995). Song degradation and estimation of acoustic distance in black-capped chickadees (*Parus atricapillus*). *Can. J. Zool.*, **73**.
- Franz, M. & Goller, F. (2002). Respiratory units of motor production and song imitation in the zebra finch. *J. Neurobiol.*, **51**, 129-141.
- Freeberg, T. M., King, A. P. & West, M. J. (1995). Social malleability in cowbirds: species and mate recognition in the first two years of life. *J. Comp. Psychol.*, **109**, 357-367.
- Freeberg, T. M. & Lucas J. R. (2002). Receivers respond differently to chick-a-dee calls varying in note composition in Carolina chickadees, *Poecile carolinensis*. *Anim. Behav.*, **63**, 837-845.
- Freeberg, T. M., King, A. P. & West, M. J. (2001). It takes a village to raise a communicative culture: Vocal traditions and courtship patterns in cowbirds. *Dev. Psychobiol.*, **38**, 202.
- Freeberg, T. M., King, A. P. & West, M. J. (2001). Cultural transmission of vocal traditions in cowbirds (*Molothrus ater*) influences courtship patterns and mate preferences. *J. Comp. Psychol.*, **115**, 201-211.
- Freeberg, T. M. & Lucas, J. R. (2001). Chick-a-dee calls and chickadee social organization: Analogue to language evolution? *Adv. Ethol.* **36**, 32.
- Freeberg, T. M. (1998). The cultural transmission of courtship patterns in cowbirds, *Molothrus ater*. *Anim.*

Behav., **56**, 1063-1073.

- Freeberg, T. M. (2000). Culture and courtship in vertebrates: a review of social learning and transmission of courtship systems and mating patterns. *Behav. Process.*, **51**, 177-192.
- Frith, C. B. & Frith, D. W. (1994). Courts and seasonal activities at them by male tooth-billed bowerbirds, *Scenopoeetes dentirostris* (Ptilonorhynchidae). *Mem. Queensl. Mus.*, **37**, 121-145.
- Frith, C. B., Borgia, G. & Frith, D. W. (1996). Courts and courtship behaviour of Archbold's bowerbird *Archboldia papuensis* in Papua, New Guinea. *Ibis*, **138**, 204-211.
- Frith, C. B. & McGuire, M. (1996). Visual evidence of vocal avian mimicry by male tooth-billed bowerbirds *Scenopoeetes dentirostris* (Ptilonorhynchidae). *Emu*, **96**, 12-16.
- Frith, C. B. (1994). Adaptive significance of tracheal elongation in manucodes (Paradisaeidae). *Condor*, **96**, 552-555.
- Frommolt, K.-H. (1996). Intra- and interindividual variations in the song of the little bunting *Emberiza pusilla*. *Bioacoustics*, **6**, 315.
- Frommolt, K.-H. & Ernst, S. (1996). Greenish warbler (*Phylloscopus trochiloides*) imitates the song of a chaffinch (*Fringilla coelebs*). *Mitt. Ver. Saechs. Orn.*, **8**, 15-22.
- Fry, C. L. (1996). How perception guides production in birdsong learning. *Adv. Neural. Inf. Process. Syst.* **8**. Proceedings of the 1995 Conference, pp. 110-116.
- Fujita, K. (1994). The function of song in varied tits, who maintain a strong pair bond. *J. Ornithol.*, **135** (Sonderheft), 159.
- Fusani, L., Metzendorf, R., Wozniak, A., Hutchison, J. B. & Gahr, M. (1996). Estrogen dependence of vocal patterns in canaries. *Italian J. Anat. Embryol.*, **101**, 124.
- Fusani, L., Van't Hof, T., Hutchison, J. B. & Gahr, M. (2000). Seasonal expression of androgen receptors, estrogen receptors, and aromatase in the canary brain in relation to circulating androgens and estrogens. *J. Neurobiol.*, **43**, 254-268.
- Fuszara, M. & Matyjasiak, P. (2000). Possible interspecific song matching in male blackcaps. *Biol. Bull. Poznan*, **37**, 171-172.
- Gahr, M. & Metzendorf, R. (1999). The sexually dimorphic expression of androgen receptors in the song nucleus hyperstriatalis ventrale pars caudale of the zebra finch develops independently of gonadal steroids. *J. Neurosci.*, **19**, 2628-2636.
- Gahr, M. & Kosar, E. (1996). Identification, distribution, and developmental changes of a melatonin binding site in the song control system of the zebra finch. *J. Comp. Neurol.*, **367**, 308-318.
- Gahr, M., Guettinger, H. R. & Kroodsma, D. E. (1993). Estrogen receptors in the avian brain: survey reveals general distribution and forebrain areas unique to songbirds. *J. Comp. Neurol.*, **327**, 112-122.
- Gahr, M. & Guettinger, H.-R. (1986). Functional aspects of singing in male and female *Uraeginthus bengalus* (Estrildidae). *Ethology*, **72**, 123-131.
- Gahr, M. (1994). The role of estrogen in the differentiation of the vocal control system of songbirds. In *Perspectives in Comprehensive Endocrinology* (K. G. Davey, R. E. Peter & S. S. Tobe, eds.). National Council of Canada; Ottawa, pp. 455-463.
- Gahr, M., Sonnenschein, E. & Wickler, W. (1998). Sex differences in the size of the neural song control regions in a duetting songbird with similar song repertoire size of males and females. *J. Neurosci.*, **18**, 1124-1131.
- Gahr, M. (1998). Hormones make songs sexually attractive: hormone-dependent neural changes in the vocal control system of songbirds. *Zoology*, **100**, 260-272.
- Gahr, M. (2000). Neural song control system of hummingbirds: Comparison to swifts, vocal learning (songbirds) and nonlearning (suboscines) passerines, and vocal learning (budgerigars) and nonlearning (dove, owl, gull, quail, chicken) nonpasserines. *J. Comp. Neurol.*, **426**, 182-196.
- Gahr, M. & Metzendorf, R. (1997). Distribution and dynamics in the expression of androgen and estrogen receptors in vocal control systems of songbirds. *Brain Res. Bull.*, **44**, 509-517.
- Galeotti, P., Saino, N., Sacchi, R. & Moeller, A. P. (1997). Song correlates with social context, testosterone and body condition in male barn swallows. *Anim. Behav.*, **53**, 687-700.
- Galis, F. & van Alphen, J. J. M. (2000). How fast do crossbills speciate? On assortative mating and vocalizations. *Trends Ecol. Evol.*, **15**, 357.
- Garamszegi, L. Z., Boulinier, T., Moeller, A. P., Toeroek, J., Michl, G. & Nichols, J. D. (2002). The estimation of size and change in composition of avian song repertoires. *Anim. Behav.*, **63**, 623-630.
- Gardner, T. J., Cecchi, G., Magnasco, M., Laje, R. & Mindlin, G. B. (2001). Simple motor gestures for birdsong: A model of the minimum syringeal control necessary to produce canary song. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Gardner, T., Cecchi, G., Magnasco, M., Laje, R. & Mindlin, G. B. (2001). Simple motor gestures for birdsongs. *Phys. Rev. Lett.*, **87**, 208101.
- Gaunt, A. S. & Nowicki, S. (1996). Birdsong: Acoustics and physiology revisited. In *Acoustic Communication in*

- Animals: Recent Technical Advances* (S. L. Hopp, M. Owren & C. S. Evans, eds.). Springer-Verlag; Heidelberg.
- Gaunt, A. S. (1988). Interaction of syringeal structure and airflow in avian phonation. In *Acta XIX Congressus Internationalis Ornithologici* (H. Ouellet, ed.). Ottawa, Ontario, 1986. National Museum of Natural Science; Ottawa, pp. 915-924.
- Gaunt, A. S. (1986). Interaction of syringeal structure and airflow in avian phonation. *Acta XIX Congr. Int. Ornithol.*, pp. 915-924.
- Gaunt, A. S. (1987). Phonation. In *Bird Respiration* (T. J. Seller, ed.). CRC Press; Boca Raton, Florida, pp. 71-94.
- Gaunt, A. S., Bucher, T. L., Gaunt, S. L. L. & Baptista, L. F. (1996). Is singing costly? *Auk*, **113**, 718-721.
- Geberzahn, N., Hultsch, H. & Todt, D. (2001). Vocal matching in nightingales (*Luscinia megarhynchos*) in relation to the sequencing of song-types. *Adv. Ethol.*, **36**, 162.
- Gehr, D. D., Hofer, S. B., Marquardt, D. & Leppelsack, H. (2000). Functional changes in field L complex during song development of juvenile male zebra finches. *Dev. Brain Res.*, **125**, 153-165.
- Gentner, T. Q., Hulse, S. W., Duffy, D. & Ball, G. F. (2001). Response biases in auditory forebrain regions of female songbirds following exposure to sexually relevant variation in male song. *J. Neurobiol.*, **46**, 48-58.
- Gentner, T. Q. & Hulse, S. H. (1998). Perceptual mechanisms for individual vocal recognition in European starlings, *Sturnus vulgaris*. *Anim. Behav.*, **56**, 579-594.
- Gentner, T. Q., Hulse, S. H., Bentley, G. E. & Ball, G. F. (2000). Individual vocal recognition and the effect of partial lesions to HVC on discrimination, learning and categorization of conspecific song in adult songbirds. *J. Neurobiol.*, **42**, 117-133.
- Gentner, T. Q. & Hulse, S. H. (2000). Female European starling preference and choice for variation in conspecific male song. *Anim. Behav.*, **59**, 443-458.
- Gentner, T. Q. & Hulse, S. H. (2000). Perceptual classification based on the component structure of song in European starlings. *J. Acoust. Soc. Am.*, **107**, 3369-3381.
- Gentner, T. Q., Hulse, S. H. & Ball, G. F. (1999). IEG ZENK expression in songbirds during individual vocal recognition. *Soc. Neurosci. Abstr.*, **25**, 624.
- Gentner, T. Q. & Margoliash, D. (2001). Perception in songbirds: Defining a role for the forebrain region CHV. *Soc. Neurosci. Abstr.*, **27**, 842.
- Gentner, T. Q., Duffy, D. L., Kalondis, P., Ellis, E. & Hall, G. F. (1998). Behaviorally relevant variation in male song induces differential expression of the IEG ZENK in a sub-region of NCM in female starlings. *Soc. Neurosci. Abstr.*, **24**, 700.
- George, I., Cousillas, H., Richard, J.-P. & Hausberger, M. (2001). Perception of song in the European starling is lateralized. *Adv. Ethol.*, **36**, 163.
- George, I., Cousillas, H., Richard, J.-P. & Hausberger, M. (2002). Song perception in the European starling: hemispheric specialisation and individual variations. *C. R. Biol.*, **325**, 197-204.
- Gibbs, J. P. & Wenny, D. G. (1993). Song output as a population estimator: effect of male pairing status. *J. Field Ornithol.*, **64**, 316-322.
- Gil, D. (1998). Song characteristics and sexual selection in the willow warbler (*Phylloscopus trochilus*). Ph.D. thesis. University of St Andrews.
- Gil, D., Cobb, J. L. S. & Slater, P. J. B. (2001). Song characteristics are age dependent in the willow warbler, *Phylloscopus trochilus*. *Anim. Behav.*, **62**, 689-694.
- Gil, D., Graves, J. A. & Slater, P. J. B. (1999). Seasonal patterns of singing in the willow warbler: evidence against the fertility announcement hypothesis. *Anim. Behav.*, **58**, 995-1000.
- Gil, D. & Slater, P. J. B. (2000). Song organisation and singing patterns of the willow warbler, *Phylloscopus trochilus*. *Behaviour*, **137**, 759-782.
- Gil, D. (1997). Increased response of the short-toed treecreeper *Certhia brachydactyla* in sympatry to the playback of the song of the common treecreeper *C. familiaris*. *Ethology*, **103**, 632-641.
- Gil, D. & Slater, P. J. B. (1997). Song repertoire and mate choice in the willow warbler, *Phylloscopus trochilus*. *Adv. Ethol.*, **32**, 197.
- Gil, D. & Gahr, M. (2002). The honesty of bird song: multiple constraints for multiple traits. *Trends Ecol. Evol.*, **17**, 133-141.
- Gil, D. & Slater, P. J. B. (2000). Multiple song repertoire characteristics in the willow warbler (*Phylloscopus trochilus*): correlations with female choice and offspring viability. *Behav. Ecol. Sociobiol.*, **47**, 319-326.
- Gilbert, W. M. & Carroll, A. F. (1999). Singing in a mated female Wilson's warbler. *Wilson Bull.*, **111**, 134-137.
- Gill, S. A., Neudorf, D. L. & Sealy, S. G. (1997). Host responses to cowbirds near the nest: cues for recognition. *Anim. Behav.*, **53**, 1287-1293.
- Glass, G. J. (1992). Dawn call of the pied butcherbird near Toowoomba. *Sunbird*, **22**, 19-20.

- Glasse, B. & Forbes, S. (2002). Muting individual nestlings reduces parental foraging for the brood. *Anim. Behav.*, **63**, 779-786.
- Godard, R. (1993). Red-eyed vireos have difficulty recognizing individual neighbors' songs. *Auk*, **110**, 857-862.
- Godard, R. & Wiley, R. H. (1995). Individual recognition of song repertoires in two wood warblers. *Behav. Ecol. Sociobiol.*, **37**, 119-123.
- Goldman, S. A., Zukhar, A. & Mikawa, T. (1992). In vitro neurogenesis by multipotential precursor cells of the adult avian brain. *Soc. Neurosci. Abstr.*, **18**, 770.
- Goller, F. & Daley, M. A. (2001). Novel motor gestures for phonation during inspiration enhance the acoustic complexity of birdsong. *Proc. Roy. Soc. Lond. B.*, **268**, 2301-2305.
- Goller, F. & Suthers, R. A. (1995). Implications for lateralization of bird song from unilateral gating of bilateral motor patterns. *Nature*, **373**, 63-66.
- Goller, F. & Larsen, O. N. (1997). A new mechanism of sound generation in songbirds. *Proc. Natl. Acad. Sci. USA*, **94**, 14787-14791.
- Goller, F. & Suthers, R. A. (1992). Activity of syringeal muscles during song in mimic thrushes. *Soc. Neurosci. Abstr.*, **18**, 527.
- Goller, F. (1999). Contributions of expiratory muscles to song production in zebra finches. *Soc. Neurosci. Abstr.*, **25**, 1366.
- Goller, F. & Suthers, R. A. (1996). The role of syringeal muscles in gating airflow and sound production in singing brown thrashers. *J. Neurophysiol.*, **75**, 867-876.
- Goller, F. & Suthers, R. A. (1999). Bilaterally symmetrical respiratory activity during lateralized birdsong. *J. Neurobiol.*, **41**, 513-523.
- Gong, A., Freking, F. W., Wingfield, J., Schlinger, B. A. & Arnold, A. P. (1999). Effects of embryonic treatment with fadrozole on phenotype of gonads, syrinx, and neural song system in zebra finches. *Gen. Comp. Endocrinol.*, **115**, 346-353.
- Goodson, J. L., Eibach, R., Sakata, J. & Adkins-Regan, E. (1999). Effect of septal lesions on male song and aggression in the colonial zebra finch (*Taeniopygia guttata*) and the territorial field sparrow (*Spizella pusilla*). *Behav. Brain Res.*, **98**, 167-180.
- Goodson, J. L. (1998). Territorial aggression and dawn song are modulated by septal vasotocin and vasoactive intestinal polypeptide in male field sparrows (*Spizella pusilla*). *Horm. Behav.*, **34**, 67-77.
- Goodson, J. L. & Adkins-Regan, E. (1999). Effect of intraseptal vasotocin and vasoactive intestinal polypeptide infusions on courtship song and aggression in the male zebra finch (*Taeniopygia guttata*). *J. Neuroendocrinol.*, **11**, 19-25.
- Gorenzel, W. P. & Salmon, T. P. (1993). Tape-recorded calls disperse American crows from urban roosts. *Wildl. Soc. Bull.*, **21**, 334-338.
- Goretskaia, M. J. & Korbut, V. V. (2001). Birds' acoustic relations influence on their song structure. *Adv. Ethol.*, **36**, 166.
- Gossip, P. W. (1995). Strange calls of stone swallowing rook. *Scott. Bird News*, **39**, 6.
- Grace, J. A. & Theunissen, F. E. (2000). Processing of natural and synthetic sounds in the avian auditory forebrain. *Soc. Neurosci. Abstr.*, **26**.
- Grammer, M. K. & Bottjer, S. W. (2001). Silent synapses at neural substrates important for song learning in zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1424.
- Grant, P. R. & Grant, B. R. (1995). The founding of a new population of Darwin's finches. *Evolution*, **49**, 229-240.
- Grant, P. R. & Grant, B. R. (1997). Mating patterns of Darwin's finch hybrids determined by song and morphology. *Biol. J. Linn. Soc.*, **60**, 317-343.
- Grant, P. R., Grant, B. R. & Petren, K. (2000). The allopatric phase of speciation: the sharp-beaked ground finch (*Geospiza difficilis*) on the Galapagos islands. *Biol. J. Linn. Soc.*, **69**, 287-317.
- Grant, B. R. & Grant, P. R. (2002). Lack of premating isolation at the base of a phylogenetic tree. *Am. Natur.*, **160**, 1-19.
- Grant, P. R., Grant, B. R. & Petren, K. (2000). Vocalizations of Darwin's finch relatives. *Ibis*, **142**, 680-682.
- Grant, B. R. & Grant, P. R. (1996). Cultural inheritance of song and its role in the evolution of Darwin's finches. *Evolution*, **50**, 2471-2487.
- Gray, C. (1994). Categorical perception of species typical song in European starlings. Ph.D. thesis. Johns Hopkins University.
- Gray, D. A. & Hagelin, J. C. (1996). Song repertoires and sensory exploitation: reconsidering the case of the common grackle. *Anim. Behav.*, **52**, 795-800.
- Green, J. A. (1992). *The transmission of male song in Darwin's medium ground finch Geospiza fortis*. B. A. Thesis. Princeton University, Princeton, N. J.
- Greene, E. (1999). Toward an evolutionary understanding of song diversity in Oscines. *Auk*, **116**, 299-301.
- Greenlaw, J. S., Shackelford, C. E. & Brown, R. E. (1998). Call mimicry by eastern towhees and its significance

- in relation to auditory learning. *Wilson Bull.*, **110**, 431-434.
- Greenlaw, J. S. (1993). Behavioral and morphological diversification in sharp-tailed sparrows (*Ammodramus caudacutus*) of the Atlantic coast. *Auk*, **110**, 286-303.
- Griessmann, B. & Naguib, M. (2001). Sharing of song repertoire in neighboring and non-neighboring thrush nightingales, *Luscinia luscinia*. *Zoology* (Jena), **103**, Suppl., 3, 42.
- Grisham, W. & Arnold, A. P. (1994). Distribution of GABA-like immunoreactivity in the song system of the zebra finch. *Brain Res.*, **651**, 115-122.
- Grisham, W. & Arnold, A. P. (1995). A direct comparison of the masculinizing effects of testosterone, androstenedione, estrogen and progesterone on the development of the zebra finch song system. *J. Neurobiol.*, **26**, 163-170.
- Grisham, W., Lee, J., McCormick, M. E., Yang-Stayner, K., Kakar, N. R. & Arnold, A. P. (1999). Antiandrogen substantially blocks the estrogen-induced masculinization of the song system in female zebra finches. *Soc. Neurosci. Abstr.*, **25**, 865.
- Grisham, W., Mathews, G. A. & Arnold, A. P. (1994). Local intracerebral implants of estrogen masculinize some aspects of the zebra finch song system. *J. Neurobiol.*, **25**, 185-196.
- Grisham, W. & Arnold, A. P. (1992). GABA like immunoreactivity in the song system of the zebra finch. *Soc. Neurosci. Abstr.*, **18**, 528.
- Grisham, W., Lee, J., McCormick, M. E., Yang-Stayner, K. & Arnold, A. P. (2002). Antiandrogen blocks estrogen-induced masculinization of the song system in female zebra finches. *J. Neurobiol.*, **51**, 1-18.
- Groothuis, T. G. G. (1993). The ontogeny of social displays: Form development, form fixation, and change in context. *Adv. Study Behav.*, **22**, 269-322.
- Groothuis, T. G. G., Morimando, F., Hutchison, R. & Vos, D. (1997). Aspects of vocal development in doves, gulls, and zebra finches. *Adv. Ethol.*, **32**, 30.
- Groothuis, T. G. G. (1993). A comparison between development of bird song and development of other displays. *Neth. J. Zool.*, **43**, 172-192.
- Groth, J. G. (1993). Evolutionary differentiation in morphology, vocalizations, and allozymes among nomadic sibling species in the North American red crossbill (*Loxia curvirostra*) complex. *Univ. Calif. Publ. Zool.*, **127**, 1-143.
- Groth, J. G. (1993). Call matching and positive assortative mating in red crossbills. *Auk*, **110**, 398-401.
- Guettinger, H. R., Schwager, G., Pesch, A., Heid, P. & Wachel, K. (1990). Hormones and sensitive phases for song learning in the canary (*Serinus canaria*). In *Proc. 19th Int. Ornithol. Congr., Ottawa* (E. H. Quillet, ed). University of Ottawa Press; Ottawa, pp. 905-914.
- Gulledge, C. C. & Deviche, P. (1998). Photoperiod and testosterone independently affect vocal control region volumes in adolescent male songbirds. *J. Neurobiol.*, **36**, 550-558.
- Gulledge, C. C. & Deviche, P. (1999). Age- and sex-related differences in opioid receptor densities in the songbird vocal control system. *J. Comp. Neurol.*, **404**, 505-514.
- Gulledge, C. C. & Deviche, P. (1997). Androgen control of vocal control region volumes in a wild migratory songbird (*Junco hyemalis*) is region and possibly age dependent. *J. Neurobiol.*, **32**, 391-402.
- Gutzwiller, K. J., Wiedenmann, R. T., Clements, K. L. & Anderson, S. H. (1994). Effects of human intrusion on song occurrence and singing consistency in sub-alpine birds. *Auk*, **111**, 28-37.
- Gutzwiller, K. J., Kroese, E. A., Anderson, S. H. & Wilkins, C. A. (1997). Does human intrusion alter the seasonal timing of avian song during breeding periods? *Auk*, **114**, 55-65.
- Gwinner, H. & Gwinner, E. (1994). Effects of testosterone on nest-box occupation and associated behaviours by male European starlings (*Sturnus vulgaris*). *Behaviour*, **129**, 141-147.
- Haeusler, U. (1989). *The structural and functional organisation of the auditory pathway in the caudal forebrain of the starling*. Dissertation. Zoological Institute, Technical University; Munich (German).
- Haftorn, S. (1999). Calls by willow tits (*Parus montanus*) during ringing and after release. *J. Ornithol.*, **140**, 51-56.
- Haftorn, S. (1995). Coal tit *Parus ater* song repertoires and the Beau Geste hypothesis. *J. Ornithol.*, **136**, 279-283.
- Haftorn, S., Huang, W.-C., Griswold, C. K. & Hailman, J. P. (1998). Independent discoveries of a new apparently homologous call in the willow tit *Parus montanus* and black-capped chickadee *Parus atricapillus*. *Ibis*, **140**, 174-176.
- Haftorn, S. (1993). Ontogeny of the vocal repertoire in the willow tit *Parus montanus*. *Ornis Scand.*, **24**, 267-289.
- Haftorn, S. (1997). A unique local call in the willow tit *Parus montanus*. *Bioacoustics*, **7**, 267-280.
- Haftorn, S., Hailman, J. P. & Hailman, E. D. (1996). Heterospecific imitation by great tits *Parus major*. *Fauna Norv., Ser. C. Cinclus*, **19**, 39-48.
- Haftorn, S. & Hailman, J. P. (1997). Do the Siberian tits *Parus cinctus* in Scandinavia and Siberia speak the same language? *Bioacoustics*, **8**, 223-247.

- Haftorn, S. (1993). Willow warbler *Phylloscopus trochilus* imitating the song of the chiffchaff *P. collybita*. *Bull. Brit. Ornithol. Club*, **113**, 216-224.
- Haftorn, S. (1993). A brambling *Fringilla montifringilla* imitating the chaffinch *Fringilla coelebs* and greenfinch *Carduelis chloris*. *Ornis. Fenn.*, **70**, 119-123.
- Hahn, I. & Mattes, H. (2000). Vocalisations of the masafuera rayadito *Aphrastura masafuerae* on Isla Alejandro Selkirk, Chile. *Bioacoustics*, **11**, 149-158.
- Hahnloser, R. H. R. & Fee, M. S. (2001). The dynamics of HVC neurons in awake and sleeping zebra finch: The role of HVC in generating burst sequences in premotor nucleus RA. *Soc. Neurosci. Abstr.*, **27**, 841.
- Hailman, J. P. (1994). Constrained permutation in chick-a-dee-like calls of a black-lored tit *Parus xanthogenys*. *Bioacoustics*, **6**, 33-50.
- Hailman, J. P. & Griswold, C. K. (1996). Syntax of black-capped chickadee (*Parus atricapillus*) gargles sorts many types into few groups: Implications for geographic variation, dialect drift, and vocal learning. *Bird Behavior*, **11**, 39-57.
- Hailman, J. P., Ficken, M. S. & Ficken, R. W. (1987). Constraints on the structure of combinatorial 'chick-a-dee' calls. *Ethology*, **75**, 62-80.
- Hailman, E. D. & Hailman, J. P. (1990). Willow warblers *Phylloscopus trochilus* silently mob stuffed pygmy owl *Glaucidium passerinum*. *Fauna Norv., Ser. C., Cinclus*, **13**, 85-86.
- Hailman, J. P., Haftorn, S. & Hailman, E. D. (1994). Male Siberian tit *Parus cinctus* dawn serenades: suggestion for the origin of song. *Fauna Norv. Ser. C., Cinclus*, **17**, 15-26.
- Hailman, J. P. & Ficken, M. S. (1996). Comparative analysis of vocal repertoires, with reference to chickadees. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 136-159.
- Halkin, S. L. (1997). Nest-vicinity song exchanges may coordinate biparental care of northern cardinals. *Anim. Behav.*, **54**, 189-198.
- Halkin, S. L. (1990). Singing from the nest: intrapair communication in cardinals. Ph.D. thesis. University of Wisconsin at Madison.
- Hall, M. L. (2000). The function of duetting in magpie-larks: conflict, cooperation, or commitment? *Anim. Behav.*, **60**, 667-677.
- Hall, M. L. & Magrath, R. D. (2000). Duetting and mate-guarding in Australian magpie-larks (*Grallina cyanoleuca*). *Behav. Ecol. Sociobiol.*, **47**, 180-187.
- Hall, G. F. (1999). The neuroendocrine basis of seasonal changes in vocal behavior among songbirds. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 213-253.
- Halle, F., Gahr, M., Pieneman, A. W. & Kreutzer, M. (2002). Recovery of song preferences after excitotoxic HVC lesion in female canaries. *J. Neurobiol.*, **52**, 1-13.
- Halsema, K. A. & Bottjer, S. W. (1992). Chemical lesions of a thalamic nucleus disrupt song development in male zebra finches. *Soc. Neurosci. Abstr.*, **18**, 529.
- Halupka, K. & Halupka, L. (1998). Alarm calls and chick reaction: comments on Kleindorfer et al. (1996). *Anim. Behav.*, **55**, 502-503.
- Halupka, K. & Borowiec, M. (2001). Characteristics and functions of song flights in whitethroats *Sylvia communis*. *Adv. Ethol.*, **36**, 169.
- Halupka, K. (1998). Vocal begging by nestlings and vulnerability to nest predation in meadow pipits *Anthus pratensis*; to what extent do predation costs of begging exist? *Ibis*, **140**, 144-149.
- Hamao, S. & Ueda, K. (2000). Simplified song in an island population of the bush warbler *Cettia diphone*. *J. Ethol.*, **18**, 53-57.
- Hamao, S. (2000). When do males sing songs?: Costs and benefits of singing during a breeding cycle. *Jap. J. Ornithol.*, **49**, 87-98.
- Hamilton, K. S., King, A. P., Sengelaub, D. R. & West, M. J. (1997). A brain of her own: A neural correlate of song assessment in a female songbird. *Neurobiol. Learn. Mem.*, **68**, 325-332.
- Hamilton, K. S., King, A. P., Sengelaub, D. R. & West, M. J. (1998). Visual and song nuclei correlate with courtship skills in brown-headed cowbirds. *Anim. Behav.*, **56**, 973-982.
- Hansen, L. H., Klump, G. M. & Friedl, T. W. P. (2001). Vocal repertoires and element sharing in the red bishop (*Euplectes orix*). *Adv. Ethol.*, **36**, 170.
- Hansen, P. (1999). Long-term stability of song elements in the yellowhammer *Emberiza citrinella*. *Bioacoustics*, **9**, 281-295.
- Hanski, I. K. & Laurila, A. (1993). Variation in song rate during the breeding cycle of the chaffinch *Fringilla coelebs*. *Ethology*, **93**, 161-169.
- Hansson, M. C., Bensch, S. & Brannstrom, O. (2000). Range expansion and the possibility of an emerging contact zone between two subspecies of chiffchaff *Phylloscopus collybita* ssp. *J. Avian Biol.*, **31**, 548-558.

- Harbison, H., Nelson, D. A. & Hahn, T. P. (1999). Long-term persistence of song dialects in the mountain white-crowned sparrow. *Condor*, **101**, 133-148.
- Harding, C. F., Barclay, S. R. & Waterman, S. A. (1998). Changes in catecholamine levels and turnover rates in hypothalamic, vocal control, and auditory nuclei in male zebra finches during development. *J. Neurobiol.*, **34**, 329-346.
- Harding, C. F. & Whildin, S. L. (1999). The effects of altering noradrenergic function on song learning in finches. *Soc. Neurosci. Abstr.*, **25**, 865.
- Hartley, R. S., Chinn, M. S. & Ullrich, N. F. E. (1997). Left syringeal dominance in testosterone-treated female canaries. *Neurobiol. Learn. Mem.*, **67**, 248-253.
- Hartman, V. N., Miller, M. A., Clayton, D. F., Liu, W. C., Kroodsma, D. E. & Brenowitz, E. A. (2001). Testosterone regulates alpha-synuclein mRNA in the avian song system. *NeuroReport*, **12**, 943-946.
- Haskell, D. G. (1999). The effect of predation on begging-call evolution in nestling wood warblers. *Anim. Behav.*, **57**, 893-901.
- Haskell, D. (1994). Experimental evidence that nestling begging behaviour incurs a cost due to nest predation. *Proc. R. Soc. Lond. B.*, **257**, 161-164.
- Hasselquist, D., Bensch, S. & Ottosson, U. (1993). Diurnal song pattern in the great reed warbler *Acrocephalus arundinaceus*. *Ornis Svecica*, **3**, 125-136.
- Hasselquist, D. (1990). *Bird song and sexual selection*. Introductory Paper 56, University of Lund; Lund, 33 pp.
- Hasselquist, D., Bensch, S. & von Schantz, T. (1996). Correlation between male song repertoire, extra-pair paternity and offspring survival in the great reed warbler. *Nature*, **381**, 229-232.
- Hasselquist, D. (1998). Polygyny in great reed warblers: A long-term study of factors contributing to male fitness. *Ecology*, **79**, 2376-2390.
- Hatchwell, B. J., Ross, D. J., Fowlie, M. K. & McGowan, A. (2001). Kin discrimination in cooperatively breeding long-tailed tits. *Proc. Roy. Soc. Lond. B.*, **268**, 885-890.
- Hauber, M. E., Clayton, N. S., Kacelnik, A., Reboreda, J. C. & DeVoogd, T. J. (1999). Sexual dimorphism and species differences in HVC volumes of cowbirds. *Behav. Neurosci.*, **113**, 1095-1099.
- Hauber, M. E., Russo, S. A. & Sherman, P. W. (2001). A password for species recognition in a brood-parasitic bird. *Proc. Roy. Soc. Lond. B.*, **268**, 1041-1048.
- Hausberger, M., Henry, L. & Richard, M. A. (1995). Testosterone-induced singing in female European starlings (*Sturnus vulgaris*). *Ethology*, **99**, 193-208.
- Hausberger, M. (1993). How studies on vocal communication in birds contribute to a comparative approach to cognition. *Ethologia*, **3**, 171-185.
- Hausberger, M., Richard-Yris, M. A., Henry, L., Lepage, L. & Schmidt, I. (1995). Song sharing reflects the social organization in a captive group of European starlings (*Sturnus vulgaris*). *J. Comp. Psychol.*, **109**, 222-241.
- Hausberger, M. & Cousillas, H. (1996). Categorization in birdsong: from behavioural to neuronal responses. *Behav. Processes*, **35**, 83-91.
- Hausberger, M. & Jenkins, P. F. (1990). Song categories and their functions in the European starling. *Acta XX Congressus Internationalis Ornithologici II*, 1262-1272.
- Hausberger, M., Leppelsack, E., Richard, J.-P. & Leppelsack, H. J. (2000). Neuronal bases of categorization in starling song. *Behav. Brain Res.*, **114**, 89-95.
- Hausberger, M., Henry, L. & Richard, M. A. (1996). Testosterone-induced singing in female starlings (*Sturnus vulgaris*). *Ethology*, **99**, 193-208.
- Hausberger, M. (1997). Social influences on song acquisition and sharing in the European starling (*Sturnus vulgaris*). In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 128-156.
- Hauser, M. D. & Caffrey, C. (1994). Anti-predator response to raptor calls in wild crows, *Corvus brachyrhynchos hesperis*. *Anim. Behav.*, **48**, 1469-1471.
- Hayden, B. Y., Singh, N. C., Amin, N. & Theunissen, F. E. (2001). Hierarchical processing of natural sounds in the avian auditory forebrain. *Soc. Neurosci. Abstr.*, **27**, 1921.
- Heather, W. & Mehta, N. (1999). Changes in adult zebra finch song require a forebrain nucleus that is not necessary for song production. *J. Neurobiol.*, **38**, 14-28.
- Heckenlively, D. B. (1986). Descriptive analysis of simulated bird songs. *Collegiate Microcomputer*, **4**, 193-199.
- Hedenstroem, A. & Alerstam, T. (1996). Skylark optimal flight speeds for flying nowhere and somewhere. *Behav. Ecol.*, **7**, 121-126.
- Hedenstroem, A. (1995). Song flight performance in the skylark *Alauda arvensis*. *J. Avian Biol.*, **26**, 337-342.
- Hegelbach, J. (1996). Song ontogeny and repertoire size in ornithological bioacoustics: Different points of view or interspecific differences? *Ornithol. Beob.*, **93**, 111-118 (German).
- Hegelbach, J. & Spaar, R. (2000). Annual variation in singing activity of the song thrush (*Turdus philomelos*), with comments on high postbreeding song output. *J. Ornithol.*, **141**, 425-434 (German).

- Hegelbach, J. & Nabulon, T. (1998). A male common redstart *Phoenicurus phoenicurus* as mixed singer and breeding partner of a female black redstart *Ph. ochruros*. *Ornithol. Beob.*, **95**, 129-136 (German).
- Heid, P. (1988). *Organisation and hormonal regulation of song behaviour outside the breeding season in the canary (Serinus canaria)*. Ph.D. thesis, University of Kauserslautern.
- Heinrich, B. & Marzluff, J. M. (1991). Do common ravens yell because they want to attract others? *Behav. Ecol. Sociobiol.*, **28**, 13-21.
- Heinrich, B., Marzluff, J. M. & Marzluff, C. S. (1993). Common ravens are attracted by appeasement calls of food discoverers when attacked. *Auk*, **110**, 247-254.
- Heinrich, J. E., Nordeen, K. & Nordeen, E. (2001). An early decline in NMDAR2B mRNA levels within IMAN does not prevent extended learning in zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1424.
- Heinrich, J. E., Singh, T. D., Nordeen, K. W. & Nordeen, E. J. (2000). Developmental and hormonal regulation of NR2A mRNA in forebrain regions controlling avian vocal learning. *Soc. Neurosci. Abstr.*, **26**.
- Heinrich, J. E., Singh, T. D., Sohrabji, F., Nordeen, K. W. & Nordeen, E. J. (2002). Developmental and hormonal regulation of NR2A mRNA in forebrain regions controlling avian vocal learning. *J. Neurobiol.*, **51**, 149-159.
- Helb, H.-W. & Wallschlaeger, D. (1996). Geographical variation of the song of the scarlet rosefinch *Carpodacus erythrinus*. *Bioacoustics*, **6**, 316.
- Helb, H.-W. & Wallschlaeger, D. (1994). Geographic variation of song structure in the scarlet grosbeak. *J. Ornithol.*, **135** (Sonderheft), 160.
- Helbig, A. J., Martens, J., Seibold, I., Henning, F., Schottler, B. & Wink, M. (1996). Phylogeny and species limits in the Palearctic chiffchaff *Phylloscopus collybita* complex: mitochondrial genetic differentiation and bioacoustic evidence. *Ibis*, **138**, 650-666.
- Helekar, S. A., Marsh, S., Viswanath, N. S. & Rosenfield, D. B. (2000). Acoustic pattern variations in the female-directed birdsongs of a colony of laboratory-bred zebra finches. *Behav. Process.*, **49**, 99-110.
- Helekar, S. A., Botas, A., Espino, G. & Rosenfield, D. B. (1999). The induction of adaptation of song motifs by repeated singing in zebra finches. *Soc. Neurosci. Abstr.*, **25**, 1366.
- Henning, F., Schottler, B. & Martens, J. (1994). Island specific calls in Canary Islands chiffchaffs (*Phylloscopus collybita canariensis*). *Verh. Dtsch. Zool. Ges.*, **87**, 43 (German).
- Henning, F., Schottler, B. & Martens, J. (1994). Song and call differentiation of the Canary Island's chiffchaffs. *J. Ornithol.*, **135** (Sonderheft), 161.
- Henry, L. (1998). Influency of context on the vocal behaviour of birds. *Bull. Soc. Zool. France*, **123**, 231-238 (French).
- Henry, L. & Hausberger, M. (1994). Social influences on song learning in male and female European starlings. *J. Ornithol.*, **135** (Sonderheft), 161.
- Henry, L. (1994). *Influence of context on the vocal and socio-sexual behaviour of the female starling (Sturnus vulgaris)*. Ph.D. dissertation, Univ. Rennes, France (French).
- Henry, L., Hausberger, M. & Jenkins, P. F. (1994). The use of song repertoire changes with pairing status in male European starlings. *Bioacoustics*, **5**, 261-266.
- Henry, L. & Hausberger, M. (2001). Differences in the social context of song production in captive male and female European starlings. *Compt. R. Acad. Sci., Ser. III*, **324**, 1167-1174.
- Herremans, M. & Herremans, D. (1992). The imitative repertoire of a Kalahari robin *Erythropygia paena*. *Babbler*, **24**, 22-23.
- Herrmann, K. & Arnold, A. (1991). The development of afferent projections to the robust archistriatal nucleus in male zebra finches: a quantitative electron microscopic study. *J. Neurosci.*, **11**, 2063-2074.
- Hessler, N. A. & Doupe, A. J. (1999). Singing related neural activity in a dorsal forebrain basal ganglia circuit of adult zebra finches. *J. Neurosci.*, **19**, 10461-10481.
- Hessler, N. A. & Doupe, A. J. (1999). Social context modulates singing-related neural activity in the songbird forebrain. *Nature Neurosci.*, **2**, 209-211.
- Heuwinkel, H. (1990). The effect of vegetation on the transmission of songs of selected European Passeriformes. *Acta Biol. Benrodis*, **2**, 133-150.
- Hienz, R. D. & Sachs, M. B. (1987). Effects of noise on pure-tone thresholds in blackbirds (*Agelaius phoeniceus* and *Molothrus ater*) and pigeons (*Columba livia*). *J. Comp. Psychol.*, **101**, 16-24.
- Highsmith, R. T. (1989). *Function, form, and recognition of the songs of the golden-winged (Vermivora chrysoptera) and blue-winged (Vermivora pinus) warblers*. Ph.D. dissertation. University of Massachusetts; Amherst.
- Hill, C. E., Campbell, S. E., Nordby, J. C., Bur, J. M. & Beecher, M. D. (1999). Song sharing in two populations of song sparrows. *Behav. Evol. Sociobiol.*, **46**, 341-349.
- Hintz, V., Kreck, G. & Nixdorf-Bergweiler, B. E. (1999). Deprivation of memory formation for song in female birds severely affects neuronal structure in song system nuclei. *Soc. Neurosci. Abstr.*, **25**, 1891.
- Ho, C. E., Pesaran, B., Fee, M. S. & Mitra, P. P. (1998). Characterization of the structure and variability of zebra

- finch song elements. *Proc. Joint Symp. Neural Comp.*, **5**, 76-83.
- Hoag, D. J. (1999). Hybridization between clay-colored sparrow and field sparrow in Northern Vermont. *Wilson Bull.*, **111**, 581-584.
- Hoax, B. B. & ten Cate, C. (1999). Do stimulus-stimulus contingencies affect song learning in zebra finches (*Taeniopygia guttata*)? *J. Comp. Psychol.*, **113**, 235-241.
- Hodos, W. (1999). Avian behavioural neuroscience: Past, present and future perspectives. *Behav. Brain Res.*, **98**, 181-182.
- Hoese, W. J., Mooney, R. & Nowicki, S. (2000). Neural encoding of multiple song types in the swamp sparrow HVC. *Am. Zool.*, **40**, 1059-1060.
- Hoese, W. J., Nowicki, S., Moore, J. & Mooney, R. (2000). Auditory encoding of multiple song types in the swamp sparrow HVC. *Soc. Neurosci. Abstr.*, **26**.
- Hoese, W. J., Podos, J., Boetticher, N. C. & Nowicki, S. (2000). Vocal tract function in birdsong production: Experimental manipulation of beak movements. *J. Exp. Biol.*, **203**, 1845-1855.
- Hofstad, E., Espmark, Y., Moksnes, A., Haugan, T. & Ingebrigtsen, M. (2002). The relationship between song performance and male quality in snow buntings (*Plectrophenax nivalis*). *Can. J. Zool.*, **80**, 524-531.
- Hogstad, O. (1995). Alarm calling by willow tits, *Parus montanus*, as mate investment. *Anim. Behav.*, **49**, 221-225.
- Hoi-Leitner, M., Hoi, H., Valera, F. & Romero-Pujante, M. (1997). Multi-male display sites in serins (*Serinus serinus*). *Adv. Ethol.*, **32**, 211.
- Hoi-Leitner, M., Nechtelberger, H. & Hoi, H. (1995). Song rate as a signal for nest site quality in blackcaps (*Sylvia atricapilla*). *Behav. Ecol. Sociobiol.*, **37**, 399-405.
- Hoi-Leitner, M., Nechtelberger, H. & Dittami, J. (1993). The relationship between individual differences in male song frequency and parental care in blackcaps. *Behaviour*, **126**, 1-12.
- Holland, J., Dabelsteen, T. & Paris, A. L. (2000). Coding in the song of the wren: importance of rhythmicity, syntax and element structure. *Anim. Behav.*, **60**, 463-470.
- Holland, J. & McGregor, P. K. (1996). Disappearing song dialects? The case of Cornish corn buntings. In *The Ecology and Conservation of Corn Buntings Miliaria calandra* (P. F. Donald & N. J. Aebischer, eds.). Peterborough, Joint Nature Conservation Committee. (UK Nature Conservation No. 13).
- Holland, J., McGregor, P. K. & Rowe, C. I. (1996). Changes in microgeographic song variation of the corn bunting *Miliaria calandra*. *J. Avian Biol.*, **27**, 47-55.
- Holland, J., Dabelsteen, T., Pedersen, S. B. & Larsen, O. N. (1997). Degradation of song in the wren, *Troglodytes troglodytes*. *Adv. Ethol.*, **32**, 115.
- Holland, J., Dabelsteen, T., Bjoern, C. P. & Pedersen, S. B. (2001). The location of ranging cues in wren song: evidence from calibrated interactive playback experiments. *Behaviour*, **138**, 189-206.
- Holland, J., Dabelsteen, T., Pedersen, S. B. & Paris, A. L. (2001). Potential ranging cues contained within the energetic pauses of transmitted wren song. *Bioacoustics*, **12**, 3-20.
- Holland, J. & McGregor, P. K. (1997). Disappearing song dialects? The case of Cornish corn buntings. In *The Ecology and Conservation of Corn Buntings Miliaria calandra* (P. F. Donald and N. J. Aebischer, eds.). Joint nature Conservation Committee; Peterborough, pp. 181-185.
- Holland, J., Dabelsteen, T., Paris, A. L. & Pedersen, S. B. (1999). Energetic tails: potential cues for ranging? *Adv. Ethol.*, **34**, 136.
- Holland, J., Dabelsteen, T., Pedersen, S. B. & Larsen, O. N. (1998). Degradation of wren *Troglodytes troglodytes* song: Implications for information transfer and ranging. *J. Acoust. Soc. Am.*, **103**, 2154-2166.
- Holland, J. (2000). *Song communication and degradation in the wren*. Ph.D. thesis. University of Copenhagen.
- Holloway, C. C. & Clayton, D. F. (2001). Estrogen synthesis in the male brain triggers development of the avian song control pathway in vitro. *Nature Neurosci.*, **4**, 170-175.
- Honda, E. & Okanoya, K. (1999). Acoustical and syntactical comparisons between songs of the white-backed munia (*Lonchura striata*) and its domesticated strain, the Bengalese finch (*Lonchura striata* var. *domestica*). *Zool. Sci. (Tokyo)*, **16**, 319-326.
- Hopp, S. L., Jablonski, P. & Brown, J. L. (2001). Recognition of group membership by voice in Mexican jays, *Aphelocoma ultramarina*. *Anim. Behav.*, **62**, 297-303.
- Horn, A. & Falls, J. B. (1991). Song switching in mate attraction and territory defense by western meadowlarks (*Sturnella neglecta*). *Ethology*, **87**, 262-268.
- Horn, A. G. & Falls, J. B. (1988). Repertoires and countersinging in western meadowlarks. *Ethology*, **77**, 337-343.
- Horn, A. G. & Falls, J. B. (1996). Categorization and the design of signals: The case of song repertoires. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 121-135.
- Horn, A. G. (1992). Field experiments on the perception of song types by birds: an overview. In *Playback and*

- Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, pp. 191-200.
- Horn, A. G. (1987). *Repertoires and song switching in western meadowlarks (Sturnella neglecta)*. Ph. D. dissertation, University of Toronto; Toronto.
- Horn, A. & Falls, J. B. (1987). Responses of western meadowlarks to song repetition and contrast. *Anim. Behav.*, **36**, 291-293.
- Horn, A. G., Dickinson, T. E. & Falls, J. B. (1993). Male quality and song repertoires in western meadowlarks *Sturnella neglecta*. *Can. J. Zool.*, **71**, 1059-1061.
- Horn, A. G., Leonard, M. L., Ratcliffe, L., Shackleton, S. A. & Weisman, R. G. (1992). Frequency variation in songs of black-capped chickadees *Parus atricapillus*. *Auk*, **109**, 847-852.
- Horn, A. G. (1996). Dawn song repertoires of tree swallows (*Tachycineta bicolor*). *Can. J. Zool.*, **74**, 1084-1091.
- Horne, B. van (1995). Assessing vocal variety in the winter wren, a bird with a complex repertoire. *Condor*, **97**, 39-49.
- Horning, C. L., Beecher, M. D., Stoddard, P. K. & Campbell, S. E. (1993). Song perception in the song sparrow: importance of different parts of the song in song type classification. *Ethology*, **94**, 46-58.
- Hosino, T. & Okanoya, K. (2000). Lesion of a higher-order song nucleus disrupts phrase level complexity in Bengalese finches. *NeuroReport*, **11**, 2091-2096.
- Hough II, G. E. & Volman, S. F. (2002). Short-term and long-term effects of vocal distortion on song maintenance in zebra finches. *J. Neurosci.*, **22**, 1177-1186.
- Hough, G. E., Nelson, D. A. & Volman, S. F. (2000). Re-expression of songs deleted during development in a closed-ended songbird, the white-crowned sparrow. *Soc. Neurosci. Abstr.*, **26**.
- Hough II, G. E. & Volman, S. F. (1996). Long-term effects of song perturbation on song production in zebra finches. *Soc. Neurosci. Abstr.*, **22**, 693.
- Hough II, G. E. & Volman, S. F. (1997). Auditory responses in songbird nucleus HVC to songs deleted during learning. *Soc. Neurosci. Abstr.*, **23**, 245.
- Hough II, G. E., Nelson, D. A. & Volman, S. F. (2000). Re-expression of songs deleted during vocal development in white-crowned sparrows, *Zonotrichia leucophrys*. *Anim. Behav.*, **60**, 279-287.
- Houx, B. B., ten Cate, C. & Feuth, E. (2000). Variations in zebra finch song copying: An examination of the relationship with tutor song quality and pupil behaviour. *Behaviour*, **137**, 1377-1389.
- Houx, B. B. & ten Cate, C. (1999). Song learning from playback in zebra finches: is there an effect of operant contingency? *Anim. Behav.*, **57**, 837-845.
- Houx, B. B. & ten Cate, C. (1999). Do stimulus-stimulus contingencies affect song learning in zebra finches (*Taeniopygia guttata*)? *J. Comp. Psychol.*, **113**, 235-242.
- Houx, B. & ten Cate, C. (1997). Can't zebra finches copy songs from tutor-tape? *Adv. Ethol.*, **32**, 79.
- Houx, B. B. & ten Cate, C. (1998). Do contingencies with tutor behaviour influence song learning in zebra finches? *Behaviour*, **135**, 599-614.
- Hovekamp, N. R. (1996). Intersexual vocal communication in the red-winged blackbird. *J. Field Ornithol.*, **67**, 376-383.
- Hudec, K. (1993). Song-types of the willow tit (*Parus montanus*) in the Czech and Slovak Republics. *Sylvia*, **29**, 69-71.
- Hughes, M., Nowicki, S. & Lohr, B. (1998). Call learning in black-capped chickadees (*Parus atricapillus*): The role of experience in the development of "chick-a-dee" calls. *Ethology*, **104**, 232-249.
- Hughes, M., Hultsch, H. & Todt, D. (2002). Imitation and invention in song learning in nightingales (*Luscinia megarhynchos* B., Turdidae). *Ethology*, **108**, 97-113.
- Hughes, M. & Hultsch, H. (1997). Is stereotypy in the song of the nightingale (*Luscinia megarhynchos*) learned? *Adv. Ethol.*, **32**, 116.
- Hughes, M., Nowicki, S., Searcy, W. A. & Peters, S. (1998). Song-type sharing in song sparrows: implications for repertoire function and song learning. *Behav. Ecol. Sociobiol.*, **42**, 437-446.
- Hulse, S. H., MacDougall-Shackleton, S. A. & Wisniewski, A. B. (1997). Auditory scene analysis by songbirds: stream segregation of bird song by European starlings. *J. Comp. Psychol.*, **111**, 3-13.
- Hultsch, H. (1991). Song ontogeny in birds: closed or open developmental programs? In *Synapse-Transmission, modulation* (N. Elsner & H. Penzlin, eds.). Thieme Verlag; Stuttgart, p. 576.
- Hultsch, H. & Todt, D. (1988). Song acquisition and acquisition constraints in the nightingale, *Luscinia megarhynchos*. *Naturwissenschaften*, **76**, 83-85.
- Hultsch, H. (1990). Recombination of acquired songs as a correlate of package formation. In *Brain-Perception-Cognition* (N. Elsner & G. Roth, eds.). Georg Thieme Verlag; Stuttgart, p. 433.
- Hultsch, H., Schleuss, F. & Todt, D. (1999). Auditory-visual stimulus pairing enhances perceptual learning in a songbird. *Anim. Behav.*, **58**, 143-149.
- Hultsch, H. (1993). Ecological versus psychobiological aspects of song learning in birds. *Etologia*, **3**, 309-323.
- Hultsch, H. & Todt, D. (1996). Rules of parameter variation in homotype series of birdsong can indicate a "sollwert" significance. *Behav. Processes*, **38**, 175-182.

- Hultsch, H. (1989). Ontogeny of song patterns and their performance mode in nightingales. In *Neural Mechanisms of Behaviour* (J. Erber, R. Menzel, H.-J. Pflueger and D. Todt, eds.). Thieme; Stuttgart, p. 113.
- Hultsch, H. (1994). Functional properties of hierarchy formation in song learning. *J. Ornithol.*, **135**, 423.
- Hultsch, H. & Todt, D. (2001). Stimulus primacy in the auditory song acquisition of nightingales. *Adv. Ethol.*, **36**, 182.
- Hultsch, H. & Todt, D. (1996). Discontinuous and incremental processes in the song learning of birds: evidence for a primer effect. *J. Comp. Physiol. A.*, **179**, 291-299.
- Hultsch, H. (1993). Tracing the memory mechanisms in the song acquisition of nightingales. *Neth. J. Zool.*, **43**, 155-171.
- Hultsch, H. (1991). Correlates of repertoire constriction in the song ontogeny of nightingales (*Luscinia megarhynchos*). *Verh. Dtsch. Zool. Ges.*, **84**, 474.
- Hultsch, H. & Todt, D. (1997). Effects of visual stimuli on the song acquisition of nightingales. *Adv. Ethol.*, **32**, 80.
- Hunsaker, D. (2000). Statistical requirements to demonstrate subtle impacts of noise on passerine bird populations. *J. Acoust. Soc. Am.*, **108**, 2515.
- Hunt, K., Wingfield, J. C., Astheimer, L. B., Buttemer, W. A. & Hahn, T. P. (1995). Temporal patterns of territorial behavior and circulating testosterone in the Lapland longspur and other arctic passerines. *Am. Zool.*, **35**, 274-284.
- Hunt, K. E., Hahn, T. P. & Wingfield, J. C. (1997). Testosterone implants increase song but not aggression in male Lapland longspurs. *Anim. Behav.*, **54**, 1177-1192.
- Hurd, C. R. (1996). Interspecific attraction to the mobbing calls of black-capped chickadees (*Parus atricapillus*). *Behav. Ecol. Sociobiol.*, **38**, 287-292.
- Hurly, T. A., Ratcliffe, L., Weary, D. M. & Weisman, R. (1992). White-throated sparrows *Zonotrichia albicollis* can perceive pitch change in conspecific song by using the frequency ratio independent of the frequency difference. *J. Comp. Psychol.*, **106**, 388-391.
- Hurly, T. A., Ratcliffe, L. & Weisman, R. G. (1990). Relative pitch recognition in white-throated sparrows (*Zonotrichia albicollis*). *Anim. Behav.*, **40**, 176-181.
- Hutchinson, J. M. C., McNamara, J. M. & Cuthill, I. C. (1993). Song, sexual selection, starvation and strategic handicaps. *Anim. Behav.*, **45**, 1153-1177.
- Hwang, B. Y. & Park, S. R. (1996). Neighbor-stranger discrimination of yellow-throated buntings (*Emberiza elegans*) and gray-headed buntings (*Emberiza fucata*) to playback of song. *Korean J. Zool.*, **39**, 89-97.
- Hylton, R. & Godard, R. D. (2001). Song properties of indigo buntings in open and forested habitats. *Wilson Bull.*, **113**, 243-245.
- Ikebuchi, M. & Okanoya, K. (1999). Song-releasing properties of video projected images in zebra finches and Bengalese finches: TFT monitors are more effective than CRT monitors. *Soc. Neurosci. Abstr.*, **25**, 1364.
- Ikebuchi, M. & Okanoya, K. (2000). Limited auditory memory for conspecific songs in a non-territorial songbird. *NeuroReport*, **11**, 3915-3919.
- Ikebuchi, M. & Okanoya, K. (2000). The site of hearing-induced gene expression in the avian telencephalon (NCM) is responsible for behaviorally mediated auditory memory retrieval. *Soc. Neurosci. Abstr.*, **26**.
- Ikebuchi, M. & Okanoya, K. (1999). Male zebra finches and Bengalese finches emit directed songs to the video images of conspecific females projected onto a TFT display. *Zool. Sci. (Tokyo)*, **16**, 63-70.
- Ikebuchi, M. (2000). Auditory memory formation and plastic changes in higher-order auditory areas in birds. *Jap. J. Anim. Psychol.*, **50**, 75-86.
- Ikeda, M., Takeuchi, H.-A. & Aoki, K. (1994). The role of sex steroid in two avian song behaviours differing in ontogenetic process. *Experientia*, **50**, 972-974.
- Ilyichev, V. & Silayeva, O. (1992). *Talking Birds*. John P. Kent, Ballyrichard Farm, Arklow, County Wicklow, Rep. of Ireland.
- Ilyina, T. A. & Ivankina, E. V. (2001). Seasonal variation of singing activity and relative effect of the advertising behaviour of males with different plumage colour in the pied flycatcher *Ficedula hypoleuca*. *Acta Ornithologica (Warsaw)*, **36**, 85-89.
- Irwin, D. E., Bensch, S. & Price, T. D. (2001). Speciation in a ring. *Nature*, **409**, 333-337.
- Irwin, D. E. (2000). Song variation in an avian ring species. *Evolution*, **54**, 998-1010.
- Irwin, D. E., Irwin, J. H. & Price, T. D. (2001). Ring species as bridges between microevolution and speciation. *Genetica*, **112-113**, 223-243.
- Isler, M. L., Isler, P. R. & Whitney, B. M. (1998). Use of vocalizations to establish species limits in antbirds (Passeriformes: Thamnophilidae). *Auk*, **115**, 577-590.
- Isler, M. L., Alonso, J. A., Isler, P. R., Valqui, T., Begazo, A. & Whitney, B. M. (2002). Rediscovery of a cryptic species and description of a new subspecies in the *Myrmeciza hemimelaena* complex

- (Thamnophilidae) of the Neotropica. *Auk*, **119**, 362-378.
- Isler, M. L., Alonso, J. A., Isler, P. R. & Whitney, B. M. (2001). A new species of *Percnostola* antbird (Passeriformes: Thamnophilidae) from Amazonian Peru, and an analysis of species limits within *Percnostola rufifrons*. *Wilson Bull.*, **113**, 164-176.
- Ivanitskii, V. V. (2001). The study of vocal and spatial interrelations between Blyth's reed warblers (*Acrocephalus dumetorum*) and marsh warblers (*A. palustris*). *Vestnik Moskovskogo Universiteta Seriya XVI Biologiya*, **1**, 3-8.
- Iyengar, S., Viswanathan, S. S. & Bottjer, S. W. (1999). Development of topography within song control circuitry of zebra finches during the sensitive period for song learning. *J. Neurosci.*, **19**, 6037-6057.
- Iyengar, S. & Bottjer, S. W. (2002). The role of auditory experience in the formation of neural circuits underlying vocal learning in zebra finches. *J. Neurosci.*, **22**, 946-958.
- Iyengar, S. & Bottjer, S. W. (2002). Development of individual axon arbors in a thalamocortical circuit necessary for song learning in zebra finches. *J. Neurosci.*, **22**, 901-911.
- Jacobs, E. C., Grisham, W. & Arnold, A. P. (1995). Lack of a synergistic effect between estradiol and dihydrotestosterone in the masculinization of the zebra finch song system. *J. Neurobiol.*, **27**, 513-319.
- Janata, P. (2001). Quantitative assessment of vocal development in the zebra finch using self-organizing neural networks. *J. Acoust. Soc. Am.*, **110**, 2593-2603.
- Janata, P. & Margoliash, D. (1999). Gradual emergence of song selectivity in sensorimotor structures of the male zebra finch song system. *J. Neurosci.*, **19**, 5108-5118.
- Janik, V. M. & Slater, P. J. B. (2000). The different roles of social learning in vocal communication. *Anim. Behav.*, **60**, 1-11.
- Jarvis, E. D. (2001). Insights from vocal learning birds into the neurobiology of human language. *Soc. Neurosci. Abstr.*, **27**, 843.
- Jarvis, E. D., Mello, C. M. & Nottebohm, F. (1995). Stimulus and behavior variables that influence the song-induced expression of an immediate early gene in the canary forebrain. *Learning Mem.*, **2**, 62-80.
- Jarvis, E. D., Schwabl, H., Ribeiro, S. & Mello, C. V. (1997). Brain gene regulation by territorial singing behavior in freely ranging songbirds. *Neuroreport*, **8**, 2073-2077.
- Jarvis, E. D. (1995). *A window into the molecular biology of song associative learning and memory in songbirds*. Doctoral Dissertation. The Rockefeller University; New York.
- Jarvis, E. D., Scharff, C., Grossman, M. R., Ramos, J. A. & Nottebohm, F. (1998). For whom the bird sings: context-dependent gene expression. *Neuron*, **21**, 775-788.
- Jenkins, D. & Watson, A. (2000). Dates of first arrival and song of birds during 1974-99 in mid-Deeside, Scotland. *Bird Study*, **47**, 249-251.
- Jesse, A. (1994). Song dialects and origins of insular populations of white-crowned sparrows. *J. Ornithol.*, **135** (Sonderheft), 162.
- Jie, Z. Z., Nickel, H. & Groh, G. (1994). On the occurrence and song of Jankowski's bunting (*Emberiza jankowskii*) in the Chinese province of Jilin. *J. Ornithol.*, **135**, 617-620 (German).
- Jin, H. & Clayton, D. F. (1997). Localized changes in immediate-early gene regulation during sensory and motor learning in zebra finches. *Neuron*, **19**, 1049-1059.
- Jin, H. & Clayton, D. F. (1997). Synelfin regulation during the critical period for song learning in normal and isolated juvenile zebra finches. *Neurobiol. Learn. Mem.*, **68**, 271-284.
- Johnsen, T. S. (1998). Behavioural correlates of testosterone and seasonal changes of steroids in red-winged blackbirds. *Anim. Behav.*, **55**, 957-965.
- Johnson, F., Sablan, M. M. & Bottjer, S. W. (1995). Topographic organization of a forebrain pathway involved with vocal learning in zebra finches. *J. Comp. Neurol.*, **358**, 260-278.
- Johnson, F. & Bottjer, S. W. (1994). Afferent influences on cell death and birth during development of a cortical nucleus necessary for learned vocal behavior in zebra finches. *Development*, **120**, 13-24.
- Johnson, L. S. & Searcy, W. A. (1996). Female attraction to male song in house wrens (*Troglodytes aedon*). *Behaviour*, **133**, 357-366.
- Johnson, F. & Rashotte, M. E. (2002). Food availability but not cold ambient temperature affects undirected singing in adult male zebra finches. *Physiol. Behav.*, **76**, 9-20.
- Johnson, F. & Bottjer, S. W. (1992). Growth and regression of thalamic efferents in the song control system of male zebra finches. *J. Comp. Neurol.*, **326**, 442-450.
- Johnson, F. & Bottjer, S. W. (1995). Differential estrogen accumulation among populations of projection neurons in the higher vocal center of male canaries. *J. Neurobiol.*, **26**, 87-108.
- Johnson, F. & Sellix, M. (2000). Reorganization of a telencephalic motor region during sexual differentiation and vocal learning in zebra finches. *Dev. Brain Res.*, **121**, 253-263.
- Johnson, F. & Bottjer, S. W. (1993). Hormone induced changes in identified cell populations of the higher vocal center in male canaries. *J. Neurobiol.*, **24**, 400-418.
- Johnson, F. & Rashotte, M. E. (2001). Song production in adult zebra finches is sensitive to food and water

- availability, but not ambient temperature variation. *Soc. Neurosci. Abstr.*, **27**, 1427.
- Johnson, T. D. (1988). Developmental explanation and the ontogeny of bird song: nature/nurture redux. *Behav. Brain Sci.*, **11**, 617-663.
- Johnson, F. & Soderstrom, K. (2000). Increased expression of endogenous biotin, but not BDNF, in telencephalic song regions during zebra finch vocal learning. *Dev. Brain Res.*, **120**, 113-123.
- Johnson, F., Conigliaro, T. & Foster, E. F. (2000). Organization and quantity of singing during zebra finch vocal learning. *Soc. Neurosci. Abstr.*, **26**.
- Johnson, F., Soderstrom, K. & Whitney, O. (2002). Quantifying song bout production during zebra finch sensory-motor learning suggests a sensitive period for vocal practice. *Behav. Brain Res.*, **131**, 57-65.
- Johnsrude, I. S., Weary, D. M., Ratcliffe, L. M. & Weisman, R. G. (1994). Effect of motivational context on conspecific song discrimination by brown-headed cowbirds (*Molothrus ater*). *J. Comp. Psychol.*, **108**, 172-178.
- Jones, A. E., ten Cate, C. & Slater, P. J. B. (1996). Early experience and plasticity of song in adult male zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **110**, 354-369.
- Jones, A. E. (1994). *Social influences on song and call note learning in the zebra finch (Taeniopygia guttata)*. Ph.D. thesis, University of St Andrews.
- Jones, A. E. & Slater, P. J. B. (1996). The role of aggression in song tutor choice in the zebra finch: cause or effect? *Behaviour*, **133**, 103-115.
- Jones, A. E. & Slater, P. J. B. (1993). Do young male zebra finches prefer to learn songs that are familiar to females with which they are housed? *Anim. Behav.*, **46**, 616-617.
- Jones, A. E., ten Cate, C. & Bijleveld, C. C. J. H. (2001). The interobserver reliability of scoring sonagrams by eye: a study on methods, illustrated on zebra finch songs. *Anim. Behav.*, **62**, 791-801.
- Jung, R. E., Morton, E. S. & Fleischer, R. C. (1994). Behavior and parentage of a white-throated sparrow x dark-eyed junco hybrid. *Wilson Bull.*, **106**, 189-202.
- Jurisevic, M. A. (1997). Acoustic perception of alarm and distress vocalisations by Australian raptors. *Adv. Ethol.*, **32**, 116.
- Jurisevic, M. A. & Sanderson, K. J. (1994). The vocal repertoires of six honeyeater (Meliphagidae) species from Adelaide, South Australia. *Emu*, **94**, 141-148.
- Jurisevic, M. & Sanderson, K. J. (1998). Acoustic perception of passerine anti-predator signals by Australian raptors. *Aust. J. Zool.*, **46**, 369-380.
- Jurisevic, M. A. (1999). Structural change of begging vocalisations and vocal repertoires in two hand-raised Australian passerines, the little raven *Corvus mellori* and white-winged chough *Corcorax melanorhamphos*. *Emu*, **99**, 1-8.
- Jurisevic, M. A., Sanderson, K. J. & Baudinette, R. V. (1999). Metabolic rates associated with distress and begging calls in birds. *Physiol. Biochem. Zool.*, **72**, 38-43.
- Jurisevic, M. A. & Sanderson, K. J. (1998). A comparative analysis of distress call structure in Australian passerine and non-passerine species: influence of size and phylogeny. *J. Avian Biol.*, **29**, 61-71.
- Kafitz, K. W., Guettinger, H. R. & Mueller, C. M. (1999). Seasonal changes in astrocytes parallel neuronal plasticity in the song control area HVC of the canary. *Glia*, **27**, 88-100.
- Katsir, Z. (1995). The meaning of the "variations" in the babbler "shout": A musical-ethological approach. *Behav. Processes*, **34**, 213-232.
- Katti, M. (2001). Vocal communication and territoriality during the non-breeding season in a migrant warbler. *Curr. Sci. (Bangalore)*, **80**, 419-423.
- Kay, J. N., Hannigan, P. & Kelley, D. B. (1999). Trophic effects of androgen: Development and hormonal regulation of neuron number in a sexually dimorphic vocal motor nucleus. *J. Neurobiol.*, **40**, 375-385.
- Kayser, B. (1999). Diurnal and seasonal variation in song activity. *Dansk Orn. Foren. Tidsskr.*, **93**, 91-103.
- Keast, A. (1994). The annual cycle in a vocalisation context: a comparison of the Eastern yellow robin *Eopsaltria australis* and Jacky winter *Microeca leucophaea*. *Emu*, **94**, 230-238.
- Keast, A. (1994). Temporal vocalisation patterns in members of a eucalypt forest bird community: The effects of weather on song production. *Emu*, **94**, 172-180.
- Keast, A. (1995). Diel temporal vocalisation patterns in the mistletoe bird (*Dicaeum hirundinaceum*) and seasonal abundance relative to the flowering and fruiting of the mistletoe *Dendrophthoe vitellina*. *Corella*, **19**, 2-7.
- Keast, A. (1993). Song structures and characteristics: Members of a Eucalypt forest bird community compared. *Emu*, **93**, 259-268.
- Keast, A. (1994). The dawn chorus in a eucalypt forest bird community, seasonal shifts in timing and contribution of individual species. *Corella*, **18**, 133-140.
- Kelley, D. B. (2001). Is song special? *Neuron*, **31**, 508-510.
- Kelley, D. B. (1997). Generating sexually differentiated songs. *Curr. Opin. Neurobiol.*, **7**, 839-843.
- Kempnaers, B., Verheyen, G. R. & Dhondt, A. A. (1997). Extrapair paternity in the blue tit (*Parus caeruleus*):

- Female choice, male characteristics and offspring quality. *Behav. Ecol.*, **8**, 481-492.
- Kentish, B., Harvey, J., Roberts, L. & Ross, J. (2001). Multivariate statistical analysis of songs of the male common blackbird (*Turdus merula*): An example from western Victoria, Australia. *Emu*, **101**, 335-340.
- Kershner, E. L. & Bollinger, E. K. (1999). Aggressive response of chickadees towards black-capped and Carolina chickadee calls in central Illinois. *Wilson Bull.*, **111**, 363-367.
- Kessler, P. & Martens, J. (1997). Territorial song tradition in the scarlet rosefinch (*Carpodacus erythrinus*). *Verhandl. Deutsch. Zool. Ges.*, **90**, 364.
- Keulen, C., Praxaysombath, B. & Ruwet, J. C. (1999). Reed bunting vocalizations: Individual and geographic variation of songs from 1982 to 1997. *Cahiers d'Ethologie*, **19**, 17-56.
- Keulen, C. (1999). Vocal communication in birds: Functions and roles of songs. *Cahiers d'Ethologie*, **19**, 175-220.
- Khanna, H. (1997). Comparing degradation in the Eastern towhee's (*Pipilo erythrophthalmus*) song introduction and trill. *Adv. Ethol.*, **32**, 117.
- Khayutin, S. N., Grinchenko, Yu. V. & Dmitrieva, L. P. (1986). Dependence of defensive behavior of altricial nestlings upon alarm-signal parameters: Neuroethological approach. *Neurosci. Behav. Physiol.*, **16**, 104-110.
- Kilner, R. (1998). Primary and secondary sex ratio manipulation by zebra finches. *Anim. Behav.*, **56**, 155-164.
- Kilner, R. M., Noble, D. G. & Davies, N. B. (1999). Signals of need in parent-offspring communication and their exploitation by the common cuckoo. *Nature*, **397**, 667-672.
- Kim, K. W. & Park, S. R. (1993). Intraindividual and interindividual variations of stereotyped songs in gray-headed bunting (*Emberiza fucata*). *Korean J. Zool.*, **36**, 476-486.
- Kimpo, R. R. & Doupe, A. J. (1997). FOS is induced by singing in distinct neuronal populations in a motor network. *Neuron*, **18**, 315-325.
- King, A. P., West, M. J. & White, D. J. (2002). The presumption of sociality: social learning in diverse contexts in brown-headed cowbirds (*Molothrus ater*). *J. Comp. Psychol.*, **116**, 173-181.
- King, A. S. (1989). Functional anatomy of the syrinx. In *Form and Function in Birds, Vol. 4*. (A. S. King & J. McLelland, eds.). Academic Press; New York, pp. 107-192.
- King, A. P., Freeberg, T. M. & West, M. J. (1996). Social experience affects the process and outcome of vocal ontogeny in two populations of cowbirds. *J. Comp. Psychol.*, **110**, 276-285.
- Kim, J., O'Loughlin, B., Kasparian, S. & Nottebohm, F. (1994). Cell death and neuronal recruitment in the high vocal center of adult male canaries are temporally related to changes in song. *Proc. Natl. Acad. Sci. USA*, **91**, 7844-7848.
- Kim, J. R., Fishman, Y., Sasportas, K., Alvarez-Buylla, A. & Nottebohm, F. (1999). Fate of new neurons in adult canary high vocal center during the first 30 days after their formation. *J. Comp. Neurol.*, **411**, 487-494.
- Kim, J. R. & Nottebohm, F. (1993). Direct evidence for loss and replacement of projection neurons in adult canary brain. *J. Neurosci.*, **13**, 1654-1663.
- Kittelberger, J. M. & Mooney, R. (2001). Acute BDNF injections that reversibly disrupt adult birdsong stability induce a rapid decrease in Trk receptor phosphorylation. *Soc. Neurosci. Abstr.*, **27**, 1425.
- Kittelberger, J. M. & Mooney, R. (2000). Acute BDNF injections in a vocal premotor nucleus in the avian song system reversibly disrupt adult song stability. *Soc. Neurosci. Abstr.*, **26**.
- Kittelberger, J. M. & Mooney, R. (1999). Lesions of LMAN that disrupt song development act trans-synaptically to modify synaptic connections in the vocal motor pathway. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Kittelberger, J. M. & Mooney, R. (1999). Lesions of an avian forebrain nucleus that disrupt song development alter synaptic connectivity and transmission in the vocal premotor pathway. *J. Neurosci.*, **19**, 9385-9398.
- Kleindorfer, S., Hoi, H. & Fessl, B. (1998). Alarm calls and chick reactions: distinguishing between levels of analysis. A reply to Curio. *Anim. Behav.*, **56**, 262-264.
- Kleindorfer, S., Hoi, H. & Fessl, B. (1998). Clarification of the chick reaction hypothesis. *Anim. Behav.*, **55**, 504-507.
- Kleindorfer, S., Hoi, H. & Fessl, B. (1996). Alarm calls and chick reactions in the moustached warbler, *Acrocephalus melanopogon*. *Anim. Behav.*, **51**, 1199-1206.
- Klinke, R. & Smolders, J. W. T. (1993). Performance of the avian inner ear. *Prog. Brain Res.*, **97**, 31-43.
- Klit, I. (1996). Function of the song in the lesser whitethroat *Sylvia curruca*. *Bioacoustics*, **6**, 300.
- Klit, I. (1997). The function of song forms in lesser whitethroat (*Sylvia curruca*). Cand. scient. thesis. Natural History Museum and University of Aarhus, Denmark.
- Klit, I. (1999). The function of song forms in the lesser whitethroat *Sylvia curruca*. *Bioacoustics*, **10**, 31-45.
- Kloubec, B. & Capek, M., Jr. (2000). Diurnal, nocturnal, and seasonal patterns of singing activity in marsh warblers. *Biologia (Bratislava)*, **55**, 185-193.

- Klump, G. M. (1996). Bird communication in the noisy world. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 321-338.
- Klump, G. M. & Nieder, A. (2001). Release from masking in fluctuating background noise in a songbird's auditory forebrain. *NeuroReport*, **12**, 1825-1829.
- Klump, G. M. & Maier, E. H. (1990). Temporal summation in the European starling (*Sturnus vulgaris*). *J. Comp. Psychol.*, **104**, 94-100.
- Klump, G. M. & Maier, E. H. (1991). Gap detection in the starling (*Sturnus vulgaris*). III. Coding of gaps by the auditory periphery. *J. Comp. Physiol. A.*, **168**, 469-476.
- Klump, G. M. & Maier, E. H. (1989). Gap detection in the starling (*Sturnus vulgaris*). I. Psychophysical thresholds. *J. Comp. Physiol. A.*, **164**, 531-538.
- Klump, G. M. (1996). Sound localization studies in non-specialized birds. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay and W. C. Stebbins, eds.). Birkhaeuser Verlag; Basel, pp. 221-233.
- Klump, G. M. & Langemann, U. (1995). Comodulation masking release in a songbird. *Hear. Res.*, **87**, 157-164.
- Kobayashi, K., Uno, H. & Okanoya, K. (2000). Lesioning the anterior forebrain pathway affects the production of learned song in adult Bengalese finches. *Soc. Neurosci. Abstr.*, **26**.
- Kobayashi, K., Uno, H. & Okanoya, K. (2001). Partial lesions in the anterior forebrain pathway affect song production in adult Bengalese finches. *NeuroReport*, **12**, 353-358.
- Koelliker, M., Brinkhof, M. W., Heeb, P., Fitze, P. S. & Richner, H. (2000). The quantitative genetic basis of offspring solicitation and parental response in a passerine bird with biparental care. *Proc. Roy. Soc. Lond. B.*, **267**, 2127-2132.
- Koeppl, C., Manley, G. A. & Konishi, M. (2000). Auditory processing in birds. *Curr. Opin. Neurobiol.*, **10**, 474-481.
- Kogan, J. A. & Margoliash, D. (1998). Automated recognition of bird song elements from continuous recordings using dynamic warping and hidden Markov models: a comparative study. *J. Acoust. Soc. Am.*, **103**, 2185-2196.
- Kohl, I. & Sasvari, L. (1994). Singing and territorial behaviour of scarlet grosbeaks. *J. Ornithol.*, **135** (Sonderheft), 162.
- Kolb, H. (1990). Comparative studies on the songs of the blue-throat (*Luscinia svecica cyaneacula*) and the thrush nightingale (*Luscinia luscinia*) with special reference to the song structure. Diploma thesis. Freie Universität Berlin (German).
- Komdeur, J. & Hatchwell, B. J. (1999). Kin recognition: function and mechanism in avian societies. *Trends Ecol. Evol.*, **14**, 237-241.
- Konishi, M. (1994). Pattern generation in birdsong. *Curr. Opinion Neurobiol.*, **4**, 827-831.
- Konishi, M. (1994). An outline of recent advances in birdsong neurobiology. *Brain Behav. Evol.*, **44**, 279-285.
- Konishi, M. & Akutagawa, E. (1987). Hormonal control of cell death in a sexually dimorphic song nucleus in the zebra finches. In *Selective Neuronal Death* (Ciba Foundation Symposium 126). Wiley; Chichester, pp. 173-185.
- Kopachena, J. G. & Falls, J. B. (1993). Re-evaluation of morph-specific variations in parental behavior of the white-throated sparrow. *Wilson Bull.*, **105**, 48-59.
- Kopachena, J. G. & Crist, C. J. (2000). Microhabitat features associated with the song perches of painted and indigo buntings (Passeriformes: Cardinalidae) in northeast Texas. *Texas J. Sci.*, **52**, 133-144.
- Kopp, M. L. (1996). Ontogenetic changes in the temporal structure of the nightingale song. Ph.D. Thesis. Free University of Berlin (German).
- Korsia, S. & Bottjer, S. W. (1989). Developmental changes in the cellular composition of a brain nucleus involved with song learning in zebra finches. *Neuron*, **3**, 451-460.
- Krabbe, N. & Coopmans, P. (2000). Rediscovery of *Grallaria alleni* (Formicariidae) with notes on its range, song and identification. *Ibis*, **142**, 183-187.
- Krams, I. (2000). Long-range call use in dominance-structured crested tit *Parus cristatus* winter groups. *J. Avian Biol.*, **31**, 15-19.
- Krams, I. (2001). Communication in crested tits and the risk of predation. *Anim. Behav.*, **61**, 1065-1068.
- Kreutzer, M., Beme, I., Vallet, E. & Kiosseva, L. (1999). Social stimulation modulates the use of the "A" phrase in male canary songs. *Behaviour*, **136**, 1325-1334.
- Kreutzer, M., Vallet, E. & Nagle, L. (1996). Female canaries display to songs of early isolated males. *Experientia*, **52**, 277-280.
- Kreutzer, M. (1987). Reactions of cirl buntings (*Emberiza cirlus*) to playback of an atypical natural song: the use of own and neighbor's repertoire for song recognition. *J. Comp. Psychol.*, **101**: 382-386.
- Kreutzer, M., Vallet, E. & Nagle, L. (1994). Sexual responsiveness of female canaries to song bout organization. *Behaviour*, **129**, 293-305.

- Krokene, C., Anthonisen, K., Lifjeld, J. T. & Amundsen, T. (1996). Paternity and paternity assurance behaviour in the bluethroat, *Luscinia s. svecica*. *Anim. Behav.*, **52**, 405-417.
- Kroodsma, D. E. (1989). Male eastern phoebes (*Sayornis phoebe*: Tyrannidae, Passeriformes) fail to imitate songs. *J. Comp. Psychol.*, **103**, 227-232.
- Kroodsma, D. E. & James, F. C. (1994). Song variation within and among populations of red-winged blackbirds. *Wilson Bull.*, **106**, 156-162.
- Kroodsma, D. E. & Catchpole, C. K. (1988). Symposium 21: Intrasexual and intersexual functions of bird songs. *Acta XIX Int. Ornithol. Congr. (Ottawa)*, 1, 1356-1404.
- Kroodsma, D. E., Woods, R. W. & Goodwin, E. A. (2002). Falkland Island sedge wrens (*Cistothorus platensis*) imitate rather than improvise large song repertoires. *Auk*, **119**, 523-528.
- Kroodsma, D. E., Vielliard, J. M. E. & Stiles, F. G. (1996). Study of bird sounds in the Neotropics: Urgency and opportunity. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 269-281.
- Kroodsma, D. E. (1988). Contrasting styles of song development and their consequences among passerine birds. In *Evolution and Learning* (R. C. Bolles & M. D. Beecher, eds.). Lawrence Erlbaum Associates; Hillsdale, New Jersey, pp. 157-184.
- Kroodsma, D. E. (1996). Ecology of passerine song development. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 3-19.
- Kroodsma, D. E., Houlihan, P. W., Fallon, P. A. & Wells, J. A. (1997). Song development by grey catbirds. *Anim. Behav.*, **54**, 457-464.
- Kroodsma, D. E. & Miller, E. H., eds. (1996). *Ecology and Evolution of Acoustic Communication in Birds*. Comstock Publishing Associates, Cornell University Press; Ithaca and London.
- Kroodsma, D. E., Albano, D. J., Houlihan, P. W. & Wells, J. A. (1995). Song development by black-capped chickadees (*Parus atricapillus*) and Carolina chickadees (*P. carolinensis*). *Auk*, **112**, 29-43.
- Kroodsma, D. E. (1991). Contrasting styles of song development and their consequences among passerine birds. In *Evolution and Learning* (R. C. Bolles & M. D. Beecher, eds.). Lawrence Erlbaum; Hillsdale, New Jersey, pp. 157-184.
- Kroodsma, D. E., Sanchez, J., Stemple, D. W., Goodwin, E., da Silva, M. L. & Vielliard, J. M. E. (1999). Sedentary life style of Neotropical sedge wrens promotes song imitation. *Anim. Behav.*, **57**, 855-863.
- Kroodsma, D. E., Wilda, K., Salas, V. & Muradian, R. (2001). Song variation among *Cistothorus* wrens, with a focus on the Merida wren. *Condor*, **103**, 855-861.
- Kroodsma, D. E. (1999). Making ecological sense of song development by songbirds. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 319-342.
- Kroodsma, D. E. (1988). Song types and their use: developmental flexibility of the male blue-winged warbler. *Ethology*, **79**, 235-247.
- Kroodsma, D. E. (1990). How the mismatch between the experimental design and the intended hypothesis limits confidence in knowledge, as illustrated by an example from bird-song dialects. In *Interpretation and Explanation in the Study of Animal Behavior* (M. Bekoff and D. Jamieson, eds.). Westview Press; Boulder, Colorado, pp. 226-245.
- Kroodsma, D. E. (1993). Ecological aspects of passerine song development: A personal perspective. *Etologia*, **3**, 113-123.
- Kroodsma, D. E., Byers, B. E., Halkin, S. L., Hill, C., Minis, D., Bolsinger, J. R., Dawson, J.-A., Donelan, E., Farrington, J., Gill, F. B., Houlihan, P., Innes, D., Keller, G., Macaulay, L., Marantz, C. A., Ortiz, J., Stoddard, P. K. & Wilda, K. (1999). Geographic variation in black-capped chickadee songs and singing behavior. *Auk*, **116**, 387-402.
- Kroodsma, D. E., Liu, W.-C., Goodwin, E. & Bedell, P. A. (1999). The ecology of song improvisation as illustrated by North American sedge wrens. *Auk*, **116**, 373-386.
- Kruse, A. A., Stripling, R. & Clayton, D. F. (2001). Sex differences in the zenk gene response to song in zebra finches. *Soc. Neurosci. Abstr.*, **27**, 844.
- Kruse, A. A., Stripling, R. & Clayton, D. F. (2000). Minimal experience required for immediate early gene induction in zebra finch neostriatum. *Neurobiol. Learn. Memory*, **74**, 179-184.
- Kruse, A. A., Stripling, R. & Clayton, D. F. (2000). Brief song presentations induce zenk gene expression but not habituation in zebra finches. *Soc. Neurosci. Abstr.*, **26**.
- Kuczynski, L. (2000). Recognition of individuals of ortolan bunting *Emberiza hortulana* using image processing procedures. *Biol. Bull. Poznan*, **37**, 107-112.
- Kumar, A. & Bhatt, D. (2000). Vocal signals in a tropical avian species, the redvented bulbul *Pycnonotus cafer*: Their characteristics and importance. *J. Biosci.*, **25**, 387-396.

- Kumar, A. & Bhatt, D. (2001). Characteristics and significance of calls in oriental magpie robin. *Curr. Sci.* (Bangalore), **80**, 77-82.
- Kunc, H. P., Poesel, A. & Kempenaers, B. (2001). Changes in the dawn chorus of blue tits in relation to time of season and male age. *Adv. Ethol.*, **36**, 198.
- Lachlan, R. F., Verzijden, M., Lachlan, C., O'Brien, M. & Slater, P. (2001). Divergence of song in chaffinch (*Fringilla coelebs*) populations from the Canary Islands: Gene-culture coevolution in a natural laboratory? *Adv. Ethol.*, **36**, 200.
- Lachlan, R. F. & Slater, P. J. B. (1999). The maintenance of vocal learning by gene-culture interaction: The cultural trap hypothesis. *Proc. Roy. Soc. Lond. B.*, **266**, 701-706.
- Lachlan, R. F. & Slater, P. J. B. (1997). Investigating why birds use vocal learning by combining spatial game theory with cultural simulations. *Adv. Ethol.*, **32**, 82.
- Laiolo, P., Palestini, C. & Rolando, A. (2000). A study of choughs' vocal repertoire: variability related to individuals, sexes and ages. *J. Ornithol.*, **141**, 168-179.
- Lambrechts, M. M. (1996). Organization of birdsong and constraints on performance. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 305-320.
- Lambrechts, M. M. (1992). Male quality and playback in the great tit. In *Playback and Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, pp. 135-152.
- Lambrechts, M. M. & Dhondt, A. A. (1994). Individual voice discrimination in birds. *Curr. Ornithol.*, **12**, 115-139.
- Lambrechts, M. M. (1997). Song frequency plasticity and composition of phrase versions in great tits *Parus major*. *Ardea*, **85**, 99-109.
- Lampe, H. M. & Saetre, G.-P. (1995). Female pied flycatchers prefer males with larger song repertoires. *Proc. R. Soc. Lond., B.*, **262**, 163-167.
- Lampe, H. M. & Espmark, Y. O. (1994). Song structure reflects male quality in pied flycatchers, *Ficedula hypoleuca*. *Anim. Behav.*, **47**, 869-876.
- Lampe, H. M. & Slagsvold, T. (1994). Individual recognition based on male song in a female bird. *J. Ornithol.*, **135** (Sonderheft), 163.
- Lampe, H. M., Balsby, T. J. S., Espmark, Y. O., Dabelsteen, T., Pedersen, S. B. & McGregor, P. K. (2001). The function of twitter in the song of European redwings using interactive playback. *Adv. Ethol.*, **36**, 200-201.
- Lampe, H. M. & Slagsvold, T. (1998). Female pied flycatchers respond differently to songs of mates, neighbours and strangers. *Behaviour*, **135**, 269-285.
- Lampe, H. M., Lyngby, L., Kruszewicz, A., Dale, S. & Slagsvold, T. (1997). Blood parasites and song in the pied flycatcher, *Ficedula hypoleuca*. *Adv. Ethol.*, **32**, 194.
- Lampe, H. M. & Baker, M. C. (1994). Behavioural response to song playback by male and female white-crowned sparrows of two subspecies. *Bioacoustics*, **5**, 171-185.
- Lampe, H. M. (1987). The function of bird song in mate attraction and territorial defence, and the importance of song repertoires. D. Sc. Thesis, University of Trondheim.
- Lang, A. L. & Barlow, J. C. (1997). Cultural evolution in the Eurasian tree sparrow: divergence between introduced and ancestral populations. *Condor*, **99**, 413-423.
- Langemann, U., Gauger, B. & Klump, G. M. (1998). Auditory sensitivity in the great tit: perception of signals in the presence and absence of noise. *Anim. Behav.*, **56**, 763-769.
- Langemann, U., Tavares, J. & McGregor, P. K. (1997). Interactive playback with great tits: relationships between response pattern and male quality. *Adv. Ethol.*, **32**, 125.
- Langemann, U., Klump, G. M. & Dooling, R. J. (1995). Critical bands and critical-ratio bandwidth in the European starling. *Hear. Res.*, **84**, 167-176.
- Langemann, U. & Klump, G. M. (1994). Acoustic perception in birds: Can they profit from atmospheric turbulences to improve signal detection? *J. Ornithol.*, **135**, 422.
- Langemann, U. & Klump, G. M. (2001). Signal detection in amplitude-modulated maskers. I. Behavioural auditory thresholds in a songbird. *Eur. J. Neurosci.*, **13**, 1025-1032.
- Langemann, U. & Klump, G. M. (1992). Frequency discrimination in the European starling *Sturnus vulgaris*: a comparison of different measures. *Hear. Res.*, **63**, 43-51.
- Langmore, N. E. (1998). Functions of duet and solo songs of female birds. *Trends Ecol. Evol.*, **13**, 136-140.
- Langmore, N. E. (1995). Song and the variable mating systems of the dunnoek *Prunella modularis* and the alpine accentor *Prunella collaris*. Ph.D. thesis. University of Cambridge.
- Langmore, N. E., Davis, N. B., Hatchwell, B. J. & Hartley, I. R. (1996). Female song attracts males in the alpine accentor *Prunella collaris*. *Proc. R. Soc. Lond. B.*, **263**, 141-146.
- Langmore, N. E. (1999). Song tutor choice in polyandrous dunnoeks. *Ethology*, **105**, 125-136.
- Langmore, N. E. (1998). Reply from N. E. Langmore. *Trends Ecol. Evol.*, **13**, 323.

- Langmore, N. E. (1998). Dunnocks discriminate between the songs of familiar individuals without directional cues. *Behaviour*, **135**, 287-296.
- Langmore, N. (2000). Why female birds sing. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, pp. 317-327.
- Langmore, N. E. (1996). Territoriality and song as flexible paternity guards in the dunnock and the alpine accentor. *Behav. Ecol.*, **7**, 183-188.
- Langmore, N. E. (1997). Song switching in monandrous and polyandrous dunnocks, *Prunella modularis*. *Anim. Behav.*, **53**, 757-766.
- Langmore, N. E. & Davies, N. B. (1997). Female dunnocks use vocalizations to compete for males. *Anim. Behav.*, **53**, 881-890.
- Larsen, O. N. & Goller, F. (1998). Vibratory behavior of the sound generating structures in the bird syrinx. *Soc. Neurosci. Abstr.*, **24**, 1187.
- Larsen, O. N. & Goller, F. (1999). Role of syringeal vibrations in bird vocalizations. *Proc. Roy. Soc. Lond. B.*, **266**, 1609-1616.
- Larsen, O. N. & Goller, F. (2002). Direct observation of syringeal muscle function in songbirds and a parrot. *J. Exp. Biol.*, **205**, 25-35.
- Larsen, O. N. & Dabelsteen, T. (1986). Directionality of blackbird song. In *Sensomotorik Identifizierte Neurone* (N. Elsner and W. Rathmayer, eds.). Georg Thieme Verlag; Stuttgart, pp. 217-221.
- Larsen, O. N. & Goller, F. (1997). Muscular control and biomechanics of the songbird syrinx. *Soc. Neurosci. Abstr.*, **23**, 243.
- Larsen, O. N., Dabelsteen, T., Pedersen, S. B., Bang-Moeller, M. & Nogales, M. (1997). Competitive release of song in the Tenerifean robin, *Erithacus rubecula superbus*. *Adv. Ethol.*, **32**, 117.
- Latruffe, C. & McGregor, P. K. (2001). Signal value of part songs and overlapping in corn buntings investigated by interactive playback. *Adv. Ethol.*, **36**, 201.
- Latruffe, C., McGregor, P. K., Tavares, J. P. & Mota, P. G. (2000). Microgeographic variation in corn bunting (*Miliaria calandra*) song: quantitative and discrimination aspects. *Behaviour*, **137**, 1241-1255.
- Lauay, C., Pflaster, A. & DeVogd, T. J. (2001). Neuroanatomical correlates of perceptual learning in female zebra finches (*Poephila guttata*). *Soc. Neurosci. Abstr.*, **27**, 843.
- Lauch, M. & Wallschlaeger, D. (1986). On the geographic variation in the song of the scarlet grosbeak (*Carpodacus erythrinus*). In *Verhaltensbiologie. Internat. Symp. Berlin 1983* (G. Tembrock, R. Siegmund and M. Nichelmann, eds.). Wiss. Schriftenr. Humboldt-Univ. Berlin, pp. 52-54. (German)
- Laussmann, H. (1991). *Inter- and intraspecific territoriality in reed warblers (Acrocephalus, Sylviinae) during the breeding season: Playback experiments*. Master Thesis. Julius-Maximilians-University; Würzburg (German).
- Lavenex, P. B., Lavenex, P. & Clayton, N. S. (2001). Comparative studies of postnatal neurogenesis and learning: A critical review. *Avian and Poultry Biology Reviews*, **12**, 103-125.
- Leader, N., Wright, J. & Yom-Tov, Y. (2002). Dialect discrimination by male orange-tufted sunbirds (*Nectarinia osea*): Reactions to own vs. neighbor dialects. *Ethology*, **108**, 367-376.
- Leader, N., Wright, J. & Yom-Tov, Y. (2000). Microgeographic song dialects in the orange-tufted sunbird (*Nectarinia osea*). *Behaviour*, **137**, 1613-1627.
- Leboucher, G., Depraz, V., Kreutzer, M. & Nagle, L. (1998). Male song stimulation of female reproduction in canaries: Features relevant to sexual displays are not relevant to nest-building or egg-laying. *Ethology*, **104**, 613-624.
- Leboucher, G., Kreutzer, M. & Dittami, J. (1994). Copulation-solicitation displays in female canaries (*Serinus canaria*): are oestradiol implants necessary? *Ethology*, **97**, 190-197.
- Lee, J., Mankowski, J. L., Arnold, A. P. & Grisham, W. (2000). Female zebra finch song system is masculinized by high but not low doses of estrogen. *Soc. Neurosci. Abstr.*, **26**.
- Leech, S. M. & Leonard, M. L. (1997). Begging and the risk of predation in nestling birds. *Behav. Ecol.*, **8**, 644-646.
- Leech, S. M. & Leonard, M. L. (1996). Is there an energetic cost to begging in nestling tree swallows (*Tachycineta bicolor*)? *Proc. R. Soc. Lond. B.*, **263**, 983-987.
- Leger, D. W., Brooks, K. E. & O'Brien, J. E. (2000). Versatility from a single song: The case of the nightingale wren. *Auk*, **117**, 1038-1042.
- Leisler, B., Beier, J., Staudter, H. & Wink, M. (2000). Variation in extra-pair paternity in the polygynous great reed warbler (*Acrocephalus arundinaceus*). *J. Ornithol.*, **141**, 77-84.
- Leitner, S., Gahr, M. & Voigt, C. (1997). Seasonal changes of song behaviour and brain structure in wild canaries, *Serinus canaria*. *Adv. Ethol.*, **32**, 118.
- Leitner, S., Voigt, C. & Gahr, M. (2001). Seasonal changes in the song pattern of the non-domesticated island canary (*Serinus canaria*), a field study. *Behaviour*, **138**, 885-904.

- Leitner, S., Voigt, C., Garcia-Segura, L. M., Van't Hof, T. & Gahr, M. (2001). Seasonal activation and inactivation of song motor memories in wild canaries is not reflected in neuroanatomical changes of forebrain song areas. *Horm. Behav.*, **40**, 160-168.
- Lemon, R. E., Falls, J. B., Dickinson, T., Perreault, S. & Tittler, R. (2000). Song clustering by meadowlarks: is it related to repertoire size? *Behaviour*, **137**, 75-92.
- Lemon, R. E., Dobson, C. W. & Clifton, P. G. (1993). Songs of American redstarts *Setophaga ruticilla*: sequencing rules and their relationships to repertoire size. *Ethology*, **93**, 198-210.
- Lemon, R. E., Perreault, S. & Weary, D. M. (1994). Dual strategies of song development in American redstarts, *Setophaga ruticilla*. *Anim. Behav.*, **47**, 317-329.
- Lemon, R. E., Perreault, S. & Weary, D. (1994). Strategies of song learning by American redstarts *Setophaga ruticilla*. *J. Ornithol.*, **135** (Sonderheft), 163.
- Lemon, R. E., Monette, S. & Roff, D. (1987). Song repertoires of American warblers (Parulinae): honest advertising or assessment? *Ethology*, **74**, 265-284.
- Leonard, M. L. & Horn, A. G. (2001). Begging calls and parental feeding decisions in tree swallows (*Tachycineta bicolor*). *Behav. Ecol. Sociobiol.*, **49**, 170-175.
- Leonard, M. L. & Horn, A. G. (2001). Acoustic signalling of hunger and thermal state by nestling tree swallows. *Anim. Behav.*, **61**, 87-93.
- Leonard, M. L., Horn, A. G., Brown, C. R. & Fernandez, N. J. (1997). Parent-offspring recognition in tree swallows, *Tachycineta bicolor*. *Anim. Behav.*, **54**, 1107-1116.
- Leonard, M. L., Fernandez, N. & Brown, G. (1997). Parental calls and nestling behavior in tree swallows. *Auk*, **114**, 668-672.
- Leonardo, A. & Konishi, M. (1999). Decrystallization of adult birdsong by perturbation of auditory feedback. *Nature*, **399**, 466-470.
- Leonardo, A. & Fee, M. S. (2000). Precise neural population dynamics underlying vocal control of a songbird. *Soc. Neurosci. Abstr.*, **26**.
- Levin, R. N., Paris, T. I. & Bester, J. K. (1996). Social versus innate influences on the development of sex-specific song in a tropical duetting wren. *Am. Zool.*, **36**, 92A.
- Levin, R. N. (1996). Song behaviour and reproductive strategies in a duetting wren, *Thryothorus nigricapillus*: I. Removal experiments. *Anim. Behav.*, **52**, 1093-1106.
- Levin, R. N. (1996). Song behaviour and reproductive strategies in a duetting wren, *Thryothorus nigricapillus*. II. Playback experiments. *Anim. Behav.*, **52**, 1107-1117.
- Levin, R. N. (1988). *The adaptive significance of song in the bay wren, Thryothorus nigricapillus*. Ph.D. dissertation, Cornell University; Ithaca, N.Y.
- Lewicki, M. S. & Konishi, M. (1995). Mechanisms underlying the sensitivity of songbird forebrain neurons to temporal order. *Proc. Natl. Acad. Sci. USA*, **12**, 5582-5586.
- Lewis, M. (1994). Song complexity in the golden whistler: The result of interspecific competition? *J. Ornithol.*, **135** (Sonderheft), 164.
- Li, R., Zuo, M.-X. & Sakaguchi, H. (1999). Auditory-vocal cholinergic pathway in zebra finch brain. *NeuroReport*, **10**, 165-170.
- Li, X. & Jarvis, E. (2001). Sensory- and motor-driven BDNF expression in a vocal communication system. *Soc. Neurosci. Abstr.*, **27**, 1425.
- Li, R., Taniguchi, I. & Sakaguchi, H. (2000). Auditory-vocal cholinergic pathway in the songbird brain. *Can. J. Physiol. Pharmacol.*, **78**, 1072-1076.
- Li, X. C., Jarvis, E. D., Alvarez-Borda, B., Lim, D. A. & Nottebohm, F. (2000). A relationship between behavior, neurotrophin expression, and new neuron survival. *Proc. Natl. Acad. Sci. USA*, **97**, 8584-8589.
- Li, R. & Sakaguchi, H. (1997). Cholinergic innervation of the song control nuclei by the ventral paleostriatum in the zebra finch: a double-labeling study with retrograde fluorescent tracers and choline acetyltransferase immunohistochemistry. *Brain Res.*, **763**, 239-246.
- Lieshoff, C., Proeve, E. & Bischof, H.-J. (2000). Testosterone-dependent plasticity of avian forebrain neurons is not restricted to the song control system. *NeuroReport*, **11**, 2479-2483.
- Lind, H., Dabelsteen, T. & McGregor, P. K. (1996). Female great tits can identify mates by song. *Anim. Behav.*, **52**, 667-671.
- Lindell, C. (1998). Limited geographic variation in the vocalizations of a neotropical furnariid, *Synallaxis albescens*. *Wilson Bull.*, **110**, 368-374.
- Linden, A. van der, Verhoye, M., van Meir, V., Tindemans, I., Eens, M., Absil, P. & Balthazart, J. (2002). In vivo manganese-enhanced magnetic resonance imaging reveals connections and functional properties of the songbird vocal control system. *Neurosci.*, **112**, 467-474.
- Lints, T., Tchernichovski, O. & Nottebohm, F. (1999). Induction of rapid song imitation for studying the molecular bases of song learning. *Soc. Neurosci. Abstr.*, **25**, 1366.

- Liu, W.-C. & Kroodsma, D. E. (1999). Song development by chipping sparrows and field sparrows. *Anim. Behav.*, **57**, 1275-1286.
- Livingston, F. S., White, S. A. & Mooney, R. (2000). Slow NMDA-EPSCs at synapses critical for song development are not required for song learning in zebra finches. *Nature Neurosci.*, **3**, 482-488.
- Livingston, F. S. & Mooney, R. (2000). Testosterone and isolation differentially affect the intrinsic properties of IMAN neurons. *Soc. Neurosci. Abstr.*, **26**.
- Livingston, F. S. & Mooney, R. (1997). Development of intrinsic and synaptic properties in a forebrain nucleus essential to avian song learning. *J. Neurosci.*, **17**, 8997-9009.
- Livingston, F. S. & Mooney, R. (2001). Androgens and isolation from adult tutors differentially affect the development of songbird neurons critical to vocal plasticity. *J. Neurophysiol.*, **85**, 34-42.
- Lloyd, P., Craig, A. J. F. K. & Hulley, P. E. (1993). A structural and functional analysis of the dawn announcement song of the black-eyed bulbul *Pycnonotus barbatus*. In *Koninklijk Museum voor Midden Afrika, Tervuren, Belgie, Annalen Zoologische Wetenschappen, Vol. 268. Birds and the African Environment* (R. T. Wilson, ed.). Royal Museum for Central Africa; Tervuren, Belgium, pp. 60.
- Logan, C. A. (1994). Fluctuations in intra-pair calling across breeding phases in northern mockingbirds (*Mimus polyglottos*). *Behaviour*, **130**, 123-141.
- Logan, C. A. (1994). Changes in intra-pair calling with breeding phase in northern mockingbirds. *J. Ornithol.*, **135** (Sonderheft), 164.
- Logan, C. A. & Derrickson, K. C. (1996). Aggressive harassment by male northern mockingbirds (*Mimus polyglottos*) directed at their incubating mates. *Bird. Behav.*, **11**, 71-80.
- Logan, C. A. & Donaghey, B. A. (1997). Fledgling age affects female reactions to mate song in free-living northern mockingbirds (*Mimus polyglottos*). *Bird Behaviour*, **12**, 1-6.
- Lohmann, R. & Gahr, M. (2000). Muscle-dependent and hormone-dependent differentiation of the vocal control premotor nucleus robustus archistriatalis and the motornucleus hypoglossus pars tracheosyringalis of the zebra finch. *J. Neurobiol.*, **42**, 220-231.
- Lohr, B. & Dooling, R. J. (1998). Detection of changes in timbre and harmonicity by zebra finches (*Taeniopygia guttata*) and budgerigars (*Melopsittacus undulatus*). *J. Comp. Psychol.*, **112**, 36-47.
- Lohr, B., Weisman, R. & Nowicki, S. (1994). The role of pitch cues in song recognition by Carolina chickadees (*Parus carolinensis*). *Behaviour*, **130**, 1-15.
- Lohr, B. (1995). Gaps, ranges, and sequencing in bird song: Acoustic frequency cues and song recognition in Carolina chickadees. *Am. Zool.*, **35**, 87A.
- Lohr, B. S. (1989). *The organization of song elements in the gray catbird*. M.S. thesis. University of Wisconsin-Milwaukee.
- Lohrberg, A. (1994). Categorisation and sensitization effects examined by interactional playback in nightingales. *J. Ornithol.*, **135** (Sonderheft), 169.
- Lombardino, A. J. & Nottebohm, F. (2000). Age of deafening affects the stability of learned song in adult male zebra finches. *J. Neurosci.*, **20**, 5054-5064.
- Lopez, A. (2001). Vocal response of male redwing blackbirds (*Agelaius phoeniceus*) during simultaneous exposures to digitally remastered conspecific song playback and mounts. *Ohio J. Sci.*, **101**, page A.
- Lotem, A. (1999). Manipulative begging by parasitic cuckoo nestlings and paradoxical host behaviour: a reply to Redondo. *Trends Ecol. Evol.*, **14**, 107.
- Lotem, A. (1998). Manipulative begging calls by parasitic cuckoo chicks: why should true offspring not do the same? *Trends Ecol. Evol.*, **13**, 342-343.
- Lougheed, S. C. & Handford, P. (1993). Covariation of morphological and allozyme frequency characters in populations of the rufous-collared sparrow (*Zonotrichia capensis*). *Auk*, **110**, 179-188.
- Lougheed, S. C., Handford, P. & Baker, A. J. (1993). Mitochondrial DNA hyperdiversity and vocal dialects in a subspecies transition of the rufous-collared sparrow. *Condor*, **95**, 889-895.
- Lovaty, F. (2000). Goldcrest *Regulus regulus* and firecrest *Regulus ignicapillus* holding separated breeding territories in small continental pockets. *Alauda*, **68**, 193-200.
- Lucas, J. R., Schraeder, A. & Jackson, C. (1999). Carolina chickadee (*Aves*, Paridae, *Poecile carolinensis*) vocalization rates: Effects of body mass and food availability under aviary conditions. *Ethology*, **105**, 503-520.
- Lueps, P., Biber, O. & Nussbaumer, M. A. (1993). Does the songflight of the skylark *Alauda arvensis* explain the sex dimorphism in wing size? *Jahrb. Naturhist. Mus. Bern*, **11**, 117-124 (German).
- Luo, M., Ding, L. & Perkel, D. J. (1999). Topographic mapping throughout the anterior forebrain pathway of the zebra finch song system. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Luo, M. & Perkel, D. J. (1999). Long-range GABAergic projection in a circuit essential for vocal learning. *J. Comp Neurol.*, **403**, 68-84.
- Luo, M., Ding, L. & Perkel, D. J. (2001). An avian basal ganglia pathway essential for vocal learning forms a

- closed topographic loop. *J. Neurosci.*, **21**, 6836-6845.
- Luo, M. & Perkel, D. J. (1999). A GABAergic, strongly inhibitory projection to a thalamic nucleus in the zebra finch song system. *J. Neurosci.*, **19**, 6700-6711.
- Luschi, P. & del Seppia, C. (1996). Song-type function during territorial encounters in male Cetti's warblers *Cettia cetti*. *Ibis*, **138**, 479-484.
- Luschi, P. (1993). Improvisation of new notes during singing by male Sardinian warblers *Sylvia melanocephala*. *Bioacoustics*, **4**, 235-244.
- Lynch, A. & Baker, A. J. (1990). Increased vocal discrimination by learning in sympatry in two species of chaffinches. *Behaviour*, **116**, 109-126.
- Lynch, A. & Baker, A. J. (1993). A population memetics approach to cultural evolution in chaffinch song: meme diversity within populations. *Am. Natur.*, **141**, 597-620.
- Lynch, A. (1991). *Cultural evolution in chaffinch song: a population memetics approach*. Ph.D. dissertation, University of Toronto; Toronto.
- Lynch, A. (1996). The population memetics of birdsong. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca and London, pp. 181-197.
- Lynch, A. & Baker, A. J. (1994). A population memetics approach to cultural evolution in chaffinch song: differentiation among populations. *Evolution*, **48**, 351-359.
- MacDougall-Shackleton, S. A., Deviche, P. J., Crain, R. D., Ball, G. F. & Hahn, T. P. (2001). Seasonal changes in brain GnRH immunoreactivity and song-control nuclei volumes in an opportunistically breeding songbird. *Brain Behav. Evol.*, **58**, 38-48.
- MacDougall-Shackleton, S. A. & Ball, G. F. (1999). Comparative studies of sex differences in the song-control system of songbirds. *Trends Neurosci.*, **22**, 432-436.
- MacDougall-Shackleton, S. A., Hulse, S. H. & Ball, G. F. (1998). Neural bases of song preferences in female zebra finches (*Taeniopygia guttata*). *Neuroreport*, **9**, 3047-3052.
- MacDougall-Shackleton, S. A., Hulse, S. H., Gentner, T. Q. & White, W. (1998). Auditory scene analysis by European starlings (*Sturnus vulgaris*): perceptual segregation of tone sequences. *J. Acoust. Soc. Am.*, **103**, 3581-3587.
- MacDougall-Shackleton, E. A. & MacDougall-Shackleton, S. A. (2001). Cultural and genetic evolution in mountain white-crowned sparrows: song dialects are associated with population structure. *Evolution*, **55**, 2568-2575.
- MacDougall-Shackleton, S. A., MacDougall-Shackleton, E. A. & Hahn, T. P. (2001). Physiological and behavioural responses of female mountain white-crowned sparrows to natal- and foreign-dialect songs. *Can. J. Zool.*, **79**, 325-333.
- MacDougall-Shackleton, S. A. (1997). Sexual selection and the evolution of song repertoires. In *Current Ornithology, Vol. 14* (V. Nolan, E. D. Ketterson & C. F. Thompson, eds.). Plenum Press; New York, pp. 81-124.
- MacDougall-Shackleton, E. A., MacDougall-Shackleton, S. A. & Hahn, T. P. (1999). Effects of juvenile and adult experience on song preferences of female mountain white-crowned sparrows. *Am. Zool.*, **39**, 112A.
- MacDougall-Shackleton, S. A., Edmons, E., Ball, G. F. & Hahn, T. P. (2000). Age and sex differences in the song-control system of a songbird with delayed plumage maturation. *Soc. Neurosci. Abstr.*, **26**.
- MacDougall-Shackleton, S. A., Hulse, S. H. & Ball, G. F. (1998). Neural correlates of singing behavior in male zebra finches (*Taeniopygia guttata*). *J. Neurobiol.*, **36**, 421-430.
- Mace, R. (1989). The relationship between daily routines of singing and foraging: an experiment on captive great tits *Parus major*. *Ibis*, **131**, 415-420.
- Mace, R. (1987). The dawn chorus in the great tit *Parus major* is directly related to female fertility. *Nature*, **330**, 745-746.
- Mace, R. (1987). Why do birds sing at dawn? *Ardea*, **75**, 123-132.
- Maier, E. H. & Klump, G. M. (1990). Auditory duration discrimination in the European starling (*Sturnus vulgaris*). *J. Acoust. Soc. Am.*, **88**, 616-621.
- Maijer, S. (1998). Rediscovery of *Hylopezus (macularius) auricularis*: Distinctive song and habitat indicate species rank. *Auk*, **115**, 1072-1073.
- Maijer, S. & Fjeldsaa, J. (1997). Description of a new *Cranioleuca* spinetail from Bolivia and a leapfrog pattern of geographic variation in the genus. *Ibis*, **139**, 606-616.
- Malcher, R. & Mello, C. (1999). Identification of song-regulated genes with novel expression patterns in the brain of zebra finches. *Soc. Neurosci. Abstr.*, **25**, 625.
- Malpede, C. E. & Baker, M. C. (2000). A comparison of gargle calls of black-capped chickadees recorded in the laboratory and in the field. *Wilson Bull.*, **112**, 67-71.
- Manley, G. A. (1990). *Peripheral Hearing Mechanisms in Reptiles and Birds*. Springer Verlag; Heidelberg.

- Mann, N. I. & Slater, P. J. B. (1994). What causes young male zebra finches, *Taeniopygia guttata*, to choose their father as song tutor. *Anim. Behav.*, **47**, 671-677.
- Mann, N. I. (1991). *Visual and behavioural influences on song tutor choice in zebra finches (Taeniopygia guttata)*. Thesis, University of St. Andrews, U.K.
- Mann, N. I. & Slater, P. J. B. (1995). Song tutor choice by zebra finches in aviaries. *Anim. Behav.*, **49**, 811-820.
- Marantz, C. A. (1992). *Evolutionary implications of vocal and morphological variation in the woodcreeper genus Dendrocolaptes (Aves: Dendrocolaptidae)*. M.S. thesis. Louisiana State University; Baton Rouge.
- Marchetti, K. (1998). The evolution of multiple male traits in the yellow-browed leaf warbler. *Anim. Behav.*, **55**, 361-376.
- Marean, G. C., Burt, J. M., Beecher, M. D. & Rubel, E. W. (1993). Hair cell regeneration in the European starling (*Sturnus vulgaris*): recovery of pure tone detection thresholds. *Hear. Res.*, **71**, 125-136.
- Marean, G. C., Burt, J. M., Beecher, M. D. & Rubel, E. W. (1998). Auditory perception following hair cell regeneration in European starling (*Sturnus vulgaris*): Frequency and temporal resolution. *J. Acoust. Soc. Am.*, **103**, 3567-3580.
- Margoliash, D. (2001). Do sleeping birds sing? Population coding and learning in the bird song system. *Progr. Brain Res.*, **130**, 319-331.
- Margoliash, D., Fortune, E. S., Sutter, M. L., Yu, A. C., Wren-Hardin, B. D. & Dave, A. (1994). Distributed representation in the song system of oscines: evolutionary implications and functional consequences. *Brain Behav. Evol.*, **44**, 247-264.
- Margoliash, D. (1987). Neural plasticity in birdsong learning. In *Imprinting and Neural Plasticity: Comparative Aspects of Sensitive Periods* (J. P. Rauschecker & P. Marler, eds.). Wiley; New York, pp. 23-54.
- Margoliash, D., Staicer, C. & Inoue, S. A. (1994). The process of syllable acquisition in adult indigo buntings (*Passerina cyanea*). *Behaviour*, **131**, 39-64.
- Margoliash, D. & Bankes, S. C. (1993). Computations in the ascending auditory pathway in songbirds related to song learning. *Am. Zool.*, **33**, 94-103.
- Margoliash, D. (2001). Neuroscience. The song does not remain the same. *Science*, **291**, 2559-2561.
- Margoliash, D. (1997). Functional organization of forebrain pathways for song production and perception. *J. Neurobiol.*, **33**, 671-693.
- Marler, P. & Peters, S. (1988). Sensitive periods for song acquisition from tape recordings and live tutors in the swamp sparrow, *Melospiza georgiana*. *Ethology*, **77**, 76-84.
- Marler, P. & Peters, S. (1987). A sensitive period for song acquisition in the song sparrow, *Melospiza melodia*: A case of age-limited learning. *Ethology*, **76**, 89-100.
- Marler, P. & Nelson, D. (1994). Neuroselection and song learning in birds: Species universals in a culturally transmitted behavior. *Neurosciences*, **4**, 415-423.
- Marler, P. (1991). The instinct for vocal learning: songbirds. In *Plasticity of Development* (S. E. Brauth, W. S. Hall & R. J. Dooling, eds.). MIT Press; Cambridge, Mass., pp. 107-125.
- Marler, P. (1991). Differences in *Behavioural* development in closely related species: birdsong. In *The Development and Integration of Behaviour. Essays in honour of Robert Hinde* (P. Bateson, ed.). Cambridge University Press, pp. 41-70.
- Marler, P. (1987). Sensitive periods and the role of specific and general sensory stimulation in birdsong learning. In *Imprinting and Cortical Plasticity* (J. P. Rauschecker & P. Marler, eds). Wiley; New York, pp. 99-135.
- Marler, P. & Peters, S. (1988). The role of song phonology and syntax in vocal learning preferences in the song sparrow, *Melospiza melodia*. *Ethology*, **77**, 125-149.
- Marler, P. & Nelson, D. A. (1993). Action based learning: a new form of developmental plasticity in bird song. *Neth. J. Zool.*, **43**, 91-103.
- Marler, P. & Nelson, D. A. (1992). Neuroselection and song learning in birds: species universals in a culturally-transmitted behavior. *Seminars in Neurosciences*, **4**, 415-423.
- Marler, P. (1997). Three models of song learning: Evidence from behavior. *J. Neurobiol.*, **33**, 501-516.
- Marler, P. (1999). On innateness: Are sparrow songs 'learned' or 'innate'? In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 293-318.
- Marler, P. & Doupe, A. J. (2000). Singing in the brain. *Proc. Natl. Acad. Sci. USA*, **97**, 2965-2967.
- Marsh, R. H., MacDougall-Shackleton, S. A. & Hahn, T. P. (1999). Seasonal changes in brain GnRH and song-control nuclei in a late-summer breeding songbird. *Soc. Neurosci. Abstr.*, **25**, 864.
- Martens, J. & Nazarenko, A. A. (1993). Microevolution of eastern palearctic grey tits as indicated by their vocalizations (*Parus Poecile*, Paridae, Aves). I. *Parus montanus*. *Z. Zool. Syst. Evolutionsforsch.*, **31**, 127-143.
- Martens, J. & Geduldig, G. (1988). Acoustic adaptations of birds living close to Himalayan torrents. *Proc. Int.*

- 100 DO-G meeting, *Current Topics Avian Biol., Bonn*, pp. 123-131.
- Martens, J. & Nazarenko, A. A. (1993). Microevolution of eastern palearctic grey tits as indicated by their vocalizations (*Parus [Poecile]: Paridae, Aves*). I. *Parus montanus*. Contributions to the fauna of the Far East, no. 2. *Z. Zool. Syst. Evolutionsforsch.*, **31**, 127-143.
- Martens, J. & Eck, S. (1995). Towards an ornithology of the Himalayas. Systematics, ecology and vocalizations of Nepal birds. *Bonner Zool. Monogr.*, **38**, 1-445.
- Martens, J. (1996). Vocalizations and speciation in Palearctic birds. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 221-240.
- Martens, J. (1993). Sound utterances of songbirds and the evolution of new species. *Forschungsmagazin Univ. Mainz*, **9**, 34-44 (German).
- Martens, J., Ernst, S. & Petri, B. (1995). Territorial songs and intraspecific evolution of East Asian willow tits (*Parus montanus*). *J. Ornithol.*, **136**, 367-388 (German).
- Martens, J. (1994). Vocalizations and microevolution of Eurasian willow tits *Parus montanus*. *J. Ornithol.*, **135** (Sonderheft), 165.
- Martens, J. & Steil, B. (1997). Territorial songs and species differentiation in the lesser whitethroat superspecies *Sylvia [curruca]*. *J. Orn.*, **138**, 1-23 (German).
- Martens, J., Petri, B., Nazarenko, A. A. & Valtchuk, O. (1994). Great tit vocalizations in the Amur hybrid zone. *J. Ornithol.*, **135** (Sonderheft), 166.
- Martens, J. & Kessler, P. (2000). Territorial song and song neighbourhoods in scarlet rosefinch *Carpodacus erythrinus*. *J. Avian Biol.*, **31**, 399-411.
- Martens, J., Boehner, J. & Hammerschmidt, K. (2000). Calls of the jungle crow (*Corvus macrorhynchos* s.l.) as a taxonomic character. *J. Ornithol.*, **141**, 275-284.
- Martens, J. & Gebauer, A. (1993). Remarks on biology, vocalizations and relationships of the white-browed tit *Parus superciliosus* (Aves, Passeriformes, Paridae). *Zool. Abh. (Dres.)*, **47**, 213-222 (German).
- Martens, J. & Geduldig, G. (1990). Acoustic adaptations of birds living close to Himalayan torrents. *Proc. 100th Int. Meeting Deutschen Ornithologen-Gesellschaft, Bonn*, pp. 123-131.
- Martin, P. R., Fotheringham, J. R. & Robertson, R. J. (1995). A prairie warbler with a conspecific and heterospecific song repertoire. *Auk*, **112**, 770-774.
- Martin, D. J. (1993). Song similarity in populations of fox sparrows: a rejection of Naugler's and Smith's conclusions. *Condor*, **95**, 1057-1059.
- Martin, P. R. & Martin, T. E. (2001). Behavioral interactions between coexisting species: Song playback experiments with wood warblers. *Ecology*, **82**, 207-218.
- Martin, P. R., Fotheringham, J. R., Ratcliffe, L. & Robertson, R. J. (1996). Response of American redstarts (suborder Passeri) and least flycatchers (suborder Tyranni) to heterospecific playback: the role of song in aggressive interactions and interference competition. *Behav. Ecol. Sociobiol.*, **39**, 227-235.
- Matessi, G., Pilastro, A. & Marin, G. (2000). Variation in quantitative properties of song among European populations of reed bunting (*Emberiza schoeniclus*) with respect to bill morphology. *Can. J. Zool.*, **78**, 428-437.
- Matessi, G., Grapputo, A., Pilastro, A. & Marin, G. (1997). Song repertoire variability in the reed bunting *Emberiza schoeniclus*. *Bioacoustics*, **8**, 269.
- Matessi, G., Dabelsteen, T. & Pilastro, A. (2000). Responses to playback of different subspecies songs in the reed bunting *Emberiza schoeniclus*. *J. Avian Biol.*, **31**, 96-101.
- Matessi, G., Grapputo, A., Pilastro, A. & Marin, G. (1997). Song variation in relation to subspecies group in the reed bunting. *Avocetta*, **21**, 81.
- Mathevon, N. & Aubin, T. (1997). Reaction to conspecific degraded song by the wren *Troglodytes troglodytes*: Territorial response and choice of song post. *Behav. Processes*, **39**, 77-84.
- Mathevon, N., Aubin, T. & Bremond, J.-C. (1997). Propagation of bird acoustic signals: comparative study of starling and blackbird distress calls. *Compt. Rendus Acad. Sci. Ser. III, Sci. Vie*, **320**, 869-876.
- Mathevon, N. (1998). Degraded temporal sound features as a function of distance and potential as cues for ranging in birds. *Bioacoustics*, **9**, 17-33.
- Mathevon, N. (1996). Avian communication in acoustically extreme environments: degradation of sound signals and adaptive strategies in unfavourable conditions for propagation. Ph.D. thesis. University of Lyon I, France (French).
- Mathevon, N. & Aubin, T. (2001). Sound-based species-specific recognition in the blackcap *Sylvia atricapilla* shows high tolerance to signal modifications. *Behaviour*, **138**, 511-524.
- Mathevon, N., Aubin, T. & Dabelsteen, T. (1996). Song degradation during propagation: importance of song post for the wren *Troglodytes troglodytes*. *Ethology*, **102**, 397-412.
- Mathevon, N. (1996). Song degradation during propagation: importance of song posts and reaction to degraded signal in the wren *Troglodytes troglodytes*. *Bioacoustics*, **6**, 301.

- Mathews, G. A. & Arnold, A. P. (1990). Antiestrogens fail to prevent masculine ontogeny of the zebra finch song system. *Gen. Comp. Endocrinol.*, **80**, 48-58.
- Matthysen, E. (1997). Geographic variation in the occurrence of song types in nuthatch *Sitta europaea* populations. *Ibis*, **139**, 102-106.
- Matyjasiak, P. (2000). Song recognition by interspecifically territorial male blackcaps. *Biol. Bull. Poznan*, **37**, 173-174.
- McCracken, K. G. & Sheldon, F. H. (1997). Avian vocalizations and phylogenetic signal. *Proc. Natl. Acad. Sci. USA*, **94**, 3833-3836.
- McDonald, P. G. (2001). The function of vocalisations and aggressive behaviour used by male rufous whistlers, *Pachycephala rufiventris*. *Emu*, **101**, 65-72.
- McElroy, D. B. & Ritchison, G. (1996). Effect of mate removal on singing behavior and movement patterns of female northern cardinals. *Wilson Bull.*, **108**, 550-555.
- McGregor, P. K. (1994). Sound cues to distance: the perception of range. In *Perception and Motor Control in Birds* (M. Davies & P. R. Green, eds.). Springer; Berlin, pp. 74-94.
- McGregor, P. K. (1988). Pro-active memory interference in neighbour recognition by a songbird. *Proc. XIX Int. Ornithol. Congr.* (H. Ouellet, ed.), pp. 1391-1397.
- McGregor, P. K. & Dabelsteen, T. (1996). Communication networks. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 409-425.
- McGregor, P. K., Holland, J. & Shepherd, M. (1996). The ecology of corn bunting *Miliaria calandra* song dialects and their potential use in conservation. In *The Ecology and Conservation of Corn Buntings Miliaria calandra* (P. F. Donald & N. J. Aebischer, eds.). Joint Nature Conservation Committee; Peterborough (UK Nature Conservation, No. 13).
- McGregor, P. K. (1989). Pro-active memory interference in neighbour recognition by a songbird. *Acta Congr. Int. Ornithol.*, **19**, 1391-1397.
- McGregor, P. K. & Peake, T. M. (1998). The role of individual identification in conservation biology. In *Behavioral Ecology and Conservation Biology* (T. M. Caro, ed.). Oxford University Press; Oxford.
- McGregor, P. K., Anderson, C. M., Harris, J., Seal, J. R. & Soul, J. M. (1995). Individual differences in songs of fan-tailed warblers *Cisticola juncidis* in Portugal. *Airo*, **5**, 17-21.
- McGregor, P. K., Dabelsteen, T. & Holland, J. (1997). Eavesdropping in a territorial songbird communication network: preliminary results. *Bioacoustics*, **8**, 253-254.
- McGregor, P. K., Dabelsteen, T., Clark, C. W., Bower, J. L., Tavares, J. P. & Holland, J. (1997). Accuracy of a passive acoustic location system: empirical studies in terrestrial habitats. *Ethol. Ecol. Evol.*, **9**, 269-286.
- McGregor, P. K., Peake, T. M. & Gilbert, G. (2000). Communication behaviour and conservation: the application of sound science. In *Animal Behaviour and Conservation* (W. J. Sutherland, M. Gosling and M. Avery, eds.). Cambridge University Press; Cambridge.
- McGregor, P. K. (1995). Signalling in the real world: bird song and communication networks. *Bioacoustics*, **6**, 218.
- McGregor, P. K., Tavares, J., Langemann, U., Peake, T. M. & Latruffe, C. (1997). Acoustic communication in territorial bird networks: corn buntings and corn crakes. *Adv. Ethol.*, **32**, 126.
- McGuire, M. (1996). Dialects of the chowchilla *Orthonyx spaldingii* in upland rainforest of north-eastern Australia. *Emu*, **96**, 174-180.
- McIlraith, A. L. & Card, H. C. (1997). Bird song identification using artificial neural networks and statistical analysis. *CCECE '97. Canadian Conference on Electrical and Computer Engineering. Engineering Innovation: Voyage of Discovery. Conference Proceedings, Vol. 1*, pp. 63-66.
- McIlraith, A. L. & Card, H. C. (1995). Birdsong recognition with DSP and neural networks. *IEEE WESCANEX95. Communications, Power, and Computing, Conference Proceedings, Vol. 2.*, pp. 409-414.
- McIlraith, A. L. & Card, H. C. (1997). A comparison of back propagation and statistical classifiers for bird identification. *1997 IEEE Int. Conf. Neural Networks, Vol. 1*, pp. 100-104.
- McIlraith, A. L. & Card, H. C. (1997). Birdsong recognition using backpropagation and multivariate statistics. *IEEE Trans. Signal Process.*, **45**, 2740-2748.
- McLaren, M. A. & Cadman, M. D. (1999). Can novice volunteers provide credible data for bird surveys requiring song identification? *J. Field-Ornithol.*, **70**, 481-490.
- McShea, W. J. & Rappole, J. H. (1997). Variable song rates in three species of passerines and implications for estimating bird populations. *J. Field Ornithol.*, **68**, 367-375.
- McSween, A., McNeil, R. & Lachapelle, P. (2000). Daybreak songs and their relationship with retinal sensitivity in four species of diurnal birds. *IOVS*, **41**, S940.
- Meade, C. A., Bottjer, S. W., Cuthbertson, S. L. & Reiner, A. (2000). Neurons in area X of male zebra finch

- basal ganglia that project to DLM of thalamus show pallidal traits. *Soc. Neurosci. Abstr.*, **26**.
- Medvin, M. B., Stoddard, P. K. & Beecher, M. D. (1993). Signals for parent-offspring recognition: a comparative analysis of the begging calls of cliff swallows and barn swallows. *Anim. Behav.*, **45**, 841-850.
- Meir, V. Van, Van der Linden, A., Verhoye, M., Tindemans, I., Eens, M., Absil, P. & Balthazart, J. (2001). New sex differences in the oscine song control system identified by in vivo magnetic resonance imaging. *Soc. Neurosci. Abstr.*, **27**, 1709.
- Mello, C. V. & Clayton, D. F. (1994). Song-induced ZENK gene expression in auditory pathways of songbird brain and its relation to the song control system. *J. Neurosci.*, **14**, 6652-6666.
- Mello, C. V. & Rebeiro, S. (1998). ZENK protein regulation by song in the brain of songbirds. *J. Comp. Neurol.*, **383**, 426-438.
- Mello, C. V., Scharff, C., Nottebohm, F. & Denisenko-Nehrbass, N. (2000). Activity of a retinoic acid synthesizing enzyme in song nucleus HVC is involved in normal song maturation in zebra finches. *Soc. Neurosci. Abstr.*, **26**.
- Mello, C. V. & Clayton, D. F. (1995). Differential induction of the ZENK gene in the avian forebrain and song control circuit after metrazole-induced depolarization. *J. Neurobiol.*, **26**, 145-161.
- Mello, C., Nottebohm, F. & Clayton, D. (1995). Repeated exposure to one song leads to a rapid and persistent decline in an immediate early gene's response to that song in zebra finch telencephalon. *J. Neurosci.*, **15**, 6919-6925.
- Mello, C. V., Vates, G. E., Okuhata, S. & Nottebohm, F. (1998). Descending auditory pathways in the adult male zebra finch (*Taeniopygia guttata*). *J. Comp. Neurol.*, **395**, 137-160.
- Mello, C. V., Nottebohm, F. & Clayton, D. F. (1992). Expression of an immediate early gene in songbird brain anatomy, connections and effective stimuli. *Soc. Neurosci. Abstr.*, **18**, 529.
- Mello, C. V. (1993). *Analysis of immediate early gene expression in the songbird brain following song presentation*. Doctoral Dissertation, The Rockefeller University, New York, N.Y.
- Melman, D. S. & Searcy, W. A. (1999). Microgeographic song discrimination in a nonterritorial passerine, the boat-tailed grackle. *Condor*, **101**, 845-848.
- Mennill, D. J., Ratcliffe, L. M. & Boag, P. T. (2002). Female eavesdropping on male song contests in songbirds. *Science*, **296**, 873.
- Mennill, D. J. (2001). Song characteristics and singing behavior of the mangrove warbler (*Dendroica petechia bryanti*). *J. Field Ornithol.*, **72**, 327-337.
- Mennill, D. J. & Ratcliffe, L. M. (2000). A field test of 'SYRINX' sound analysis software in interactive playback. *Bioacoustics*, **11**, 77-86.
- Merilae, J. & Sorjonen, J. (1994). Seasonal and diurnal patterns of singing and song-flight activity in bluethroats (*Luscinia svecica*). *Auk*, **111**, 556-562.
- Merten, M. D. P. & Stocker-Buschina, S. (1995). Fadrozole induces delayed-effects on neurons in the zebra finch song system. *Brain Res.*, **671**, 317-320.
- Metzdorf, R., Gahr, M. & Fusani, L. (1999). The distribution of aromatase-, estrogen receptor- and androgen receptor-mRNA in the forebrain of songbirds and non songbirds. *J. Comp. Neurol.*, **405**, 1-15.
- Mills, H. (2000). Geographically distributed acoustical monitoring of migrating birds. *J. Acoust. Soc. Am.*, **108**, 2582.
- Miyasato, L. E. & Baker, M. C. (1999). Discrimination of gargle calls by black-capped chickadees (*Poecile atricapillus*). *Bird Behav.*, **13**, 9-14.
- Miyasato, L. E. & Baker, M. C. (1999). Black-capped chickadee call dialects along a continuous habitat corridor. *Anim. Behav.*, **57**, 1311-1318.
- Moeller, A. P. (1988). False alarm calls as a means of resource usurpation in the great tit *Parus major*. *Ethology*, **79**, 25-30.
- Moeller, A. P., Henry, P.-Y. & Erritsoe, J. (2000). The evolution of song repertoires and immune defence in birds. *Proc. Roy. Soc. Lond. B.*, **267**, 165-169.
- Moeller, A. P. (1988). Spatial and temporal distribution of song in the yellowhammer *Emberiza citrinella*. *Ethology*, **78**, 321-331.
- Moeller, A. P. (1986). On song post selection and the timing of song in the corn bunting (*Miliaria calandra*). *Oekol. Vogel*, **8**, 57-66.
- Moeller, A. P., Saino, N., Taramino, G., Galeotti, P. & Ferrario, S. (1998). Paternity and multiple signaling: Effects of a secondary sexual character and song on paternity in the barn swallow. *Am. Nat.*, **151**, 236-242.
- Molles, L. E. & Vehrencamp, S. L. (2001). Songbird cheaters pay a retaliation cost: evidence for auditory conventional signals. *Proc. Roy. Soc. Lond. B.*, **268**, 2013-2019.
- Molles, L. E. & Vehrencamp, S. L. (2001). Neighbour recognition by resident males in the banded wren, *Thryothorus pleurostictus*, a tropical songbird with high song type sharing. *Anim. Behav.*, **61**, 119-

- Molles, L. E. & Vehrencamp, S. L. (1999). Repertoire size, repertoire overlap, and singing modes in the banded wren, *Thryothorus pleurostictus*. *Auk*, **116**, 677-689.
- Momose, H. (2000). Neighbour-stranger recognition based on song in the Japanese bush warbler (*Cettia diphone*). *Mem. Fac. Sci. Kyoto Univ., Ser. Biol.*, **17**, 25-32.
- Momose, H. (1999). Structure of territorial songs in the Japanese bush warbler (*Cettia diphone*). *Mem. Fac. Sci. Kyoto Univ. Ser. Biol.*, **16**, 55-65.
- Monk, D. S. & Koenig, W. D. (1997). Individual, brood, and sex variation in begging calls of western bluebirds. *Wilson Bull.*, **109**, 328-332.
- Montgomerie, R. D. & Kikkawa, J. (1989). Why do silvereyes sing at dawn? *Abstract XXI Int. Ethol. Conf., Utrecht, The Netherlands*.
- Montgomerie, R. & Weatherhead, P. J. (1997). How robins find worms. *Anim. Behav.*, **54**, 134-151.
- Mooney, R. (1999). Sensitive periods and circuits for learned birdsong. *Curr. Opin. Neurobiol.*, **9**, 121-127.
- Mooney, R. (2000). Erratum: Different subthreshold mechanisms underlie song selectivity in identified HVC neurons of the zebra finch. *J. Neurosci.*, **20**, x.
- Mooney, R. (1999). Intracellular analysis of song-selective auditory responses in identified HVC neurons. *Soc. Neurosci. Abstr.*, **25**, 623.
- Mooney, R., Hoese, W. & Nowicki, S. (2001). Auditory representation of the vocal repertoire in a songbird with multiple song types. *Proc. Natl. Acad. Sci. USA*, **98**, 12778-12783.
- Mooney, R. & Rosen, M. J. (2000). Subthreshold mechanisms of note combination sensitivity in identified zebra finch HVC neurons. *Soc. Neurosci. Abstr.*, **26**.
- Mooney, R. & Doupe, A. J. (1991). Neurobiology of birdsong: circuits, synapses and development. *Discuss. Neurosci.*, **7**, 100-111.
- Mooney, R. (2000). Different subthreshold mechanisms underlie song selectivity in identified HVC neurons of the zebra finch. *J. Neurosci.*, **20**, 5420-5436.
- Morrison, R. G. (1991). *Neural correlates of sensitive periods for song learning in zebra finches*. Doctoral Dissertation, The Rockefeller University, New York, N.Y.
- Morrison, R. G. & Nottebohm, F. (1993). Role of a telencephalic nucleus in the delayed song learning of socially isolated zebra finches. *J. Neurobiol.*, **24**, 1045-1064.
- Morton, E. S. (1996). Why songbirds learn songs: an arms race over ranging? *Poultry Avian Biol. Rev.*, **7**, 65-71.
- Morton, E. S. & Young, K. (1986). A previously undescribed method of song matching in a species with a single song type, the Kentucky warbler (*Oporornis formosus*). *Ethology*, **73**, 334-342.
- Morton, E. S. (1998). Degradation and signal ranging in birds: memory matters. *Behav. Ecol. Sociobiol.*, **42**, 135-137.
- Morton, E. S. & Derrickson, K. C. (1996). Song ranging by the dusky antbird, *Cercomacra tyrannina*: ranging without song learning. *Behav. Ecol. Sociobiol.*, **39**, 195-201.
- Morton, E. S. (2000). An evolutionary view of the origins and functions of avian vocal communication. *Jap. J. Ornithol.*, **49**, 69-78.
- Morton, E. S. (1998). Reply to Naguib and Wiley. *Behav. Ecol. Sociobiol.*, **42**, 147-148.
- Morton, E. S. (1996). A comparison of vocal behavior among tropical and temperate passerine birds. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 258-268.
- Mota, P. G. & Cardoso, G. C. (2001). Song organisation and patterns of variation in the serin (*Serinus serinus*). *Acta Ethol.*, **3**, 141-150.
- Mota, P. G. (1999). The functions of song in the serin. *Ethology*, **105**, 137-148.
- Mota, P. G. (1997). The functions of the song in the serin. *Adv. Ethol.*, **32**, 127.
- Motis, A. (1996). The whistled songs of the European starling *Sturnus vulgaris* and the spotless starling *Sturnus unicolor* in north-east Spain. *Bioacoustics*, **7**, 119-141.
- Mountjoy, D. J. & Lemon, R. E. (1997). Male song complexity and parental care in the European starling. *Behaviour*, **134**, 661-675.
- Mountjoy, D. J. & Lemon, R. E. (1990). Song as an attractant for male and female European starlings, and the influence of song complexity on their response. *Behav. Ecol. Sociobiol.*, **28**, 97-100.
- Mountjoy, D. & Lemon, R. E. (1996). Female choice for complex song in the European starling: a field experiment. *Behav. Ecol. Sociobiol.*, **38**, 65-71.
- Mountjoy, D. J. (1994). *Male song and sexual selection in the European starling*. Ph.D. thesis. McGill University; Montreal.
- Mountjoy, D. J. & Lemon, R. E. (1995). Extended song learning in wild European starlings. *Anim. Behav.*, **49**, 357-366.
- Mountjoy, D. J. & Leger, D. W. (2001). Vireo song repertoires and migratory distance: Three sexual selection hypotheses fail to explain the correlation. *Behav. Ecol.*, **12**, 98-102.

- Mueller-Broese, M. & Todt, D. (1991). Locomotory activity of nightingales (*Luscinia megarhynchos*) during auditory stimulation with species song in the sensitive age period. *Verh. Dtsch. Zool. Ges.*, **84**, 476-477 (German).
- Mullie, A. (1991). *Song of the Lapland longspur (Calcarius lapponicus): social factors contributing to dialect stability*. M.Sc. thesis, Queen's University.
- Mundinger, P. C. (1999). Genetics of canary song learning: Innate mechanisms and other neurobiological considerations. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 369-389.
- Mundinger, P. C. (1988). Conceptual errors, different perspectives, and genetic analysis of song ontogeny. *Behav. Brain Sci.*, **11**, 643-644.
- Mundinger, P. C. (1995). Behaviour-genetic analysis of canary song: inter-strain differences in sensory learning, and epigenetic rules. *Anim. Behav.*, **50**, 1491-1511.
- Mundry, R., Hau, B. & Boehner, J. (1994). Individual and song type specific use of the kit element in the song of chaffinches (*Fringilla coelebs*). *J. Ornithol.*, **135**, 223-231 (German).
- Mundry, R. (1993). Differences between the vocalizations of the nightingale *Luscinia megarhynchos* and the thrush nightingale *Luscinia luscinia*. *Limicola*, **7**, 77-86 (German).
- Nagata, H. (1986). Female choice in Middendorff's grasshopper warbler (*Locustella ochotensis*). *Auk*, **103**, 694-700.
- Nagle, L. & Kreutzer, M. L. (1997). Adult female domesticated canaries can modify their song preferences. *Can. J. Zool.*, **75**, 1346-1350.
- Nagle, L. & Couroux, C. (2000). The influence of song mode on responses of male American redstarts. *Ethology*, **106**, 1049-1055.
- Nagle, L., Kreutzer, M. & Vallet, E. M. (1993). Obtaining copulation solicitation displays in female canaries without estradiol implants. *Experientia*, **49**, 1022-1023.
- Nagle, L. & Kreutzer, M. L. (1997). Song tutoring influences female song preferences in domesticated canaries. *Behaviour*, **134**, 89-104.
- Naguib, M. & Todt, D. (1997). Effects of dyadic vocal interactions on other conspecific receivers in nightingales. *Anim. Behav.*, **54**, 1535-1543.
- Naguib, M., Altenkamp, R. & Griessmann, B. (2001). Nightingales in space: Song and extra-territorial forays of radio tagged song birds. *J. Ornithol.*, **142**, 306-312.
- Naguib, M. & Fichtel, C. (1997). Information gathering by attending to conspecifics' interactions in nightingales. *Adv. Ethol.*, **32**, 127.
- Naguib, M., Altenkamp, R. & Griessmann, B. (2001). Spatial behavior of a territorial song bird: A radio-tracking study. *Zoology (Jena)*, **103**, Suppl. 3, 48.
- Naguib, M., Hammerschmidt, K. & Wirth, J. (2001). Microgeographic variation, habitat effects and individual signature cues in calls of chiffchaffs *Phylloscopus collybita canarensis*. *Ethology*, **107**, 341-355.
- Naguib, M. (1998). Perception of degradation in acoustic signals and its implications for ranging. *Behav. Ecol. Sociobiol.*, **42**, 139-142.
- Naguib, M. (1999). Effects of song overlapping and alternating on nocturnally singing nightingales. *Anim. Behav.*, **58**, 1061-1067.
- Naguib, M. & Todt, D. (1998). Recognition of neighbors' song in a species with large and complex song repertoires: the thrush nightingale. *J. Avian Biol.*, **29**, 155-160.
- Naguib, M., Fichtel, C. & Todt, D. (1999). Nightingales respond more strongly to vocal leaders of simulated dyadic interactions. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **266**, 537-542.
- Naguib, M., Mundry, R., Ostreiher, R., Hultsch, H., Schrader, L. & Todt, D. (1999). Cooperatively breeding Arabian babblers call differently when mobbing in different predator induced situations. *Behav. Ecol.*, **10**, 636-640.
- Naguib, M. (1997). Ranging by songs in Carolina wrens: effects of familiarity with the song type on use of different cues. *Behav. Ecol. Sociobiol.*, **41**, 203-204.
- Naguib, M. (1997). Use of song amplitude for ranging in Carolina wrens, *Thryothorus ludovicianus*. *Ethology*, **103**, 723-731.
- Naguib, M. (1997). Ranging by song in Carolina wrens: effects of familiarity with the song type on use of different cues. *Behav. Ecol. Sociobiol.*, **40**, 385-393.
- Naguib, M. (1995). *Perception of auditory distance in song birds and its implications for long range communication*. Ph.D. dissertation. University of North Carolina; Chapel Hill.
- Naguib, M. (1995). Auditory distance assessment of singing conspecifics in Carolina wrens: the role of reverberation and frequency-dependent attenuation. *Anim. Behav.*, **50**, 1297-1307.
- Naguib, M., Klump, G. M., Hillmann, E., Griessmann, B. & Teige, T. (2000). Assessment of auditory distance in a territorial songbird: accurate feat or rule of thumb? *Anim. Behav.*, **59**, 715-721.
- Naguib, M., Kolb, H. & Hultsch, H. (1991). Hierarchical structures in bird song. *Verh. Dtsch. Zool. Ges.*, **84**, 377

- (German).
- Naguib, M. (1996). Ranging by song in Carolina wrens *Thryothorus ludovicianus*: effects of environmental acoustics and strength of song degradation. *Behaviour*, **133**, 541-559.
- Naguib, M. (1996). Sound degradation and implications for long-distance communication in song birds. *Bioacoustics*, **6**, 302.
- Naguib, M. (1996). Auditory distance estimation in song birds: Implications, methodologies and perspectives. *Behav. Processes*, **38**, 163-168.
- Naguib, M. & Kolb, H. (1992). Comparison of strophe composition and strophe sequence in songs of thrush nightingale (*Luscinia luscinia*) and bluethroat (*Luscinia svecica*). *J. Ornithol.*, **133**, 133-145 (German).
- Naguib, M. & Wiley, R. H. (1994). Perception of auditory distance in song birds: How much information does a listener need? *J. Ornithol.*, **135** (Sonderheft), 167.
- Nakamura, K. & Okanoya, K. (2000). Neural combination selectivity in a voco-auditory nucleus (HVC) correlates with song complexity in Bengalese finches. *Soc. Neurosci. Abstr.*, **26**.
- Nakamura, K. & Okanoya, K. (2001). Specific auditory experiences affect the selectivity responses in the auditory neurons of female Bengalese finches. *Soc. Neurosci. Abstr.*, **27**, 1921.
- Nastiuk, K. L., Mello, C. V., George, J. M. & Clayron, D. F. (1994). Immediate-early gene responses in the avian song control system: Cloning and expression analysis of the canary C-Jun DNA. *Mol. Brain Res.*, **27**, 299-309.
- Nastiuk, K. L. & Clayton, D. F. (1995). The canary androgen receptor mRNA is localized in the song control nuclei of the brain and is rapidly regulated by testosterone. *J. Neurobiol.*, **26**, 213-224.
- Naugler, C. & Ratcliffe, L. (1992). A field test of the sound environment hypothesis of conspecific song recognition in American tree sparrows *Spizella arborea*. *Behaviour*, **123**, 314-324.
- Naugler, C. T. & Smith, P. C. (1993). Similarity breeds confusion: a reply to Martin. *Condor*, **95**, 1059-1060.
- Naugler, C. T. & Ratcliffe, L. (1994). Character release in bird song: a test of the acoustic competition hypothesis using American tree sparrows *Spizella arborea*. *J. Avian Biol.*, **2**, 142-148.
- Naugler, C. T. (1993). Vocalizations of the golden-crowned kinglet in eastern North America. *J. Field Ornithol.*, **64**, 346-351.
- Nealen, P. M. & Schmidt, M. F. (2001). Specificity of auditory responses in nucleus HVc of the song sparrow *Melospiza melodia*. *Soc. Neurosci. Abstr.*, **27**, 842.
- Nealen, P. M. & Perkel, D. J. (2000). Sexual dimorphism in the song system of the Carolina wren *Thryothorus ludovicianus*. *J. Comp. Neurol.*, **418**, 346-360.
- Nelson, D. A., Marler, P. & Palleroni, A. (1995). A comparative approach to vocal learning: intraspecific variation in the learning process. *Anim. Behav.*, **50**, 83-97.
- Nelson, D. A. & Marler, P. (1993). Measurement of song learning behavior in birds. In *Methods in Neurosciences, Vol. 14. Paradigms for the Study of Behavior* (P. M. Conn, ed.). Academic Press; San Diego, pp. 447-465.
- Nelson, D. A. & Marler, P. (1993). Innate recognition of song in white-crowned sparrows: a role in selective vocal learning. *Anim. Behav.*, **46**, 806-808.
- Nelson, B. S. (2000). Avian dependence on sound pressure level as an auditory distance cue. *Anim. Behav.*, **59**, 57-67.
- Nelson, D. A., Marler, P. & Palleroni, A. (1994). Vocal learning mechanisms in sedentary and migratory populations of the white-crowned sparrow. *J. Ornithol.*, **135** (Sonderheft), 167.
- Nelson, D. A., Marler, P. & Morton, M. L. (1996). Overproduction in song development: an evolutionary correlate with migration. *Anim. Behav.*, **51**, 1127-1140.
- Nelson, D. A., Marler, P., Soha, J. A. & Fullerton, A. L. (1997). The timing of song memorization differs in males and females: a new assay for avian vocal learning. *Anim. Behav.*, **54**, 587-597.
- Nelson, D. A. & Marler, P. (1990). The perception of birdsong and an ecological concept of signal space. In *Comparative Perception. Vol. 2* (W. C. Stebbins & M. A. Berkley, eds.). Wiley; New York, pp. 443-478.
- Nelson, D. A. (1992). Song overproduction, song matching and selective attrition during development. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed). Plenum Press; New York, pp. 121-133.
- Nelson, D. A. (1987). Song syllable discrimination by song sparrows (*Melospiza melodia*). *J. Comp. Psychol.*, **101**, 25-32.
- Nelson, D. A. (1989). Song frequency as a cue for recognition of species and individuals in the field sparrow (*Spizella pusilla*). *J. Comp. Psychol.*, **103**, 171-176.
- Nelson, D. A. (2000). A preference for own subspecies' song guides vocal learning in a song bird. *Proc. Natl. Acad. Sci. USA*, **97**, 13348-13353.
- Nelson, D. A. (2000). Song overproduction, selective attrition and song dialects in the white-crowned sparrow.

- Anim. Behav.*, **60**, 887-898.
- Nelson, D. A. (1999). Ecological influences on vocal development in the white-crowned sparrow. *Anim. Behav.*, **58**, 21-36.
- Nelson, D. A. (1998). Geographic variation in song of Gambel's white-crowned sparrow. *Behaviour*, **135**, 321-342.
- Nelson, D. A. (1998). External validity and experimental design: the sensitive phase for song learning. *Anim. Behav.*, **56**, 487-491.
- Nelson, D. A. (1997). Social interaction and sensitive phases for song learning: A critical review. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 7-22.
- Nelson, B. S. & Stoddard, P. K. (1998). Accuracy of auditory distance and azimuth perception by a passerine bird in natural habitat. *Anim. Behav.*, **56**, 467-477.
- Nelson, D. A., Khanna, H. & Marler, P. (2001). Learning by instruction or selection: Implications for patterns of geographic variation in bird song. *Behaviour*, **138**, 1137-1160.
- Nelson, D. A. & Marler, P. (1994). Selection-based learning in bird song development. *Proc. Natl. Acad. Sci. USA*, **91**, 10498-10501.
- Nelson, D. A., Whaling, C. & Marler, P. (1996). The capacity for song memorization varies in populations of the same species. *Anim. Behav.*, **52**, 379-387.
- Nemeth, E. (1994). Individual recognition of song by the female and song activity of the male in the reed bunting (*Emberiza schoeniclus*). *J. Ornithol.*, **135**, 217-222 (German).
- Nemeth, E., Winkler, H. & Dabelsteen, T. (1997). Adaptations in bird songs in a neotropical rainforest. *Adv. Ethol.*, **32**, 119.
- Nemeth, E., Winkler, H. & Dabelsteen, T. (2001). Differential degradation of antbird songs in a neotropical rainforest: adaptation to perch height? *J. Acoust. Soc. Am.*, **110**, 3263-3274.
- Nemeth, E. (1994). Different singing styles of mated and unmated males in the reed bunting *Emberiza schoeniclus*. *Bioacoustics*, **6**, 71.
- Nemeth, E. (1996). Different singing styles in mated and unmated reed buntings *Emberiza schoeniclus*. *Ibis*, **138**, 172-176.
- Nespor, A. A. & Dooling, R. J. (1997). Discrimination among natural and altered motifs of the song of the zebra finch (*Taeniopygia guttata*): a comparative study. *Bird Behaviour*, **12**, 15-28.
- Nespor, A. A. (2000). Comparative neuroendocrine mechanisms mediating sex differences in reproductive and vocal behavior and the related brain regions in songbirds, budgerigars and quail. *Avian Poultry Biol. Rev.*, **11**, 45-62.
- Neubauer, R. L. (1999). Super-normal length song preferences of female zebra finches (*Taeniopygia guttata*) and a theory of the evolution of bird song. *Evol. Ecol.*, **13**, 365-380.
- Neudorf, D. L. & Tarof, S. A. (1998). The role of chip calls in winter territoriality of yellow warblers. *J. Field Ornithol.*, **69**, 30-36.
- Nick, T. A. (2001). Song playback phase-locks ongoing activity during sleep in the birdsong nucleus HVC. *Soc. Neurosci. Abstr.*, **27**, 1921.
- Nick, T. A. & Konishi, M. (2001). Dynamic control of auditory activity during sleep: correlation between song response and EEG. *Proc. Natl. Acad. Sci. USA*, **98**, 14012-14016.
- Nicolai, B. (1992). Song dialect of black redstart (*Phoenicurus ochruros*): Tradition and song learning. *Rudolstaedter Naturhist. Schr.*, **4**, 83-90 (German).
- Nieder, A. & Klump, G. M. (2001). Signal detection in amplitude-modulated maskers. II. Processing in the songbird's auditory forebrain. *Eur. J. Neurosci.*, **13**, 1033-1044.
- Nielsen, B. M. B. & Vehrencamp, S. L. (1995). Responses of song sparrows to song-type matching via interactive playback. *Behav. Ecol. Sociobiol.*, **37**, 109-117.
- Nieminen, M. T., Suhonen, J. & Raetti, O. (1997). Intraspecific alarm call responses in willow tit (*Parus montanus*) flocks. *Adv. Ethol.*, **32**, 128.
- Nixdorf-Bergweiler, B. E., Wallhaeusser-Franke, E. & DeVoogd, T. J. (1995). Regressive development in neuronal structure during song learning in birds. *J. Neurobiol.*, **27**, 204-215.
- Nixdorf-Bergweiler, B. E. (1998). Enlargement of neuronal somata in the IMAN coincides with the onset of sensorimotor learning for song. *Neurobiol. Learn. Mem.*, **69**, 258-273.
- Nixdorf-Bergweiler, B. E., Lips, M. & Heinemann, U. (1993). Neuronal connections on in vitro slice preparation of zebra finch song control areas visualized by rhodamine-dextranamine. *Pfluegers Arch.*, **419** (Suppl. 1), R77.
- Nixdorf, B. E. & DeVoogd, T. J. (1989). Developmental changes in nucleus magnocellularis of the anterior neostriatum (MAN) in zebra finches before and during song acquisition. In *Dynamics and Plasticity in Neuronal Systems. Proceedings of the 17th Goettingen Neurobiology Conference* (N. Elsner & W. Singer, eds.). Thieme-Verlag; Stuttgart, p. 121.

- Nixdorf-Bergweiler, B. E. (1993). Sexual dimorphism in the development of synapses in a song control region in birds: a quantitative electron microscopic analysis. *Soc. Neurosci. Abstr.*, **19**, 808.
- Nixdorf-Bergweiler, B. E., Bindrich, A., Freyer, C. & Hintz, V. (1999). Neuronal and behavioral effects of deprivation of memory formation for song are multifaceted. *Soc. Neurosci. Abstr.*, **25**, 1892.
- Nixdorf-Bergweiler, B. E., Hintz, V., Kreck, G., Schuetze, H. & Schneeweisz, U. (2000). Investigation of postsynaptic density in IMAN in social and song deprived zebra finches. *Soc. Neurosci. Abstr.*, **26**.
- Njegovan, M., Weisman, R., Ito, S. & Mewhort, D. (1993). How grouping improves the categorisation of frequency in song birds and humans and why song birds do it better. *Canad. Acoustics*, **21**, 87-88.
- Njegovan, M., Ito, S., Mewhort, D. & Weisman, R. (1995). Classification of frequencies into ranges by songbirds and humans. *J. Exp. Psychol.: Anim. Behav. Proc.*, **21**, 33-42.
- Norberg, R. A. (1991). The flappet lark *Mirafra ruficinnamomea* doubles its wingbeat rate to 24 Hz in wing-clap display flight: a sexually selected feat. *J. Exp. Biol.*, **159**, 515-529.
- Nordby, J. C., Campbell, S. E., Burt, J. M. & Beecher, M. D. (2000). Social influences during song development in the song sparrow: a laboratory experiment simulating field conditions. *Anim. Behav.*, **59**, 1187-1197.
- Nordby, J. C., Campbell, S. E. & Beecher, M. D. (2002). Adult song sparrows do not alter their song repertoires. *Ethology*, **108**, 39-50.
- Nordby, J. C., Campbell, S. E. & Beecher, M. D. (2001). Late song learning in song sparrows. *Anim. Behav.*, **61**, 835-846.
- Nordby, J. C., Campbell, S. E. & Beecher, M. D. (1999). Ecological correlates of song learning in song sparrows. *Behav. Ecol.*, **10**, 287-297.
- Nordeen, E. J., Singh, T. D., Bruns, M., Sohrabji, F. & Nordeen, K. W. (1999). Sex and age-related differences in BDNF mRNA expression in song control nuclei. *Soc. Neurosci. Abstr.*, **25**, 1368.
- Nordeen, E. J., Voelkel, L. & Nordeen, K. W. (1998). Fibroblast growth factor-2 stimulates cell proliferation and decreases sexually dimorphic cell death in an avian song control nucleus. *J. Neurobiol.*, **37**, 573-581.
- Nordeen, E. J. & Nordeen, K. W. (1996). Sex difference among nonneural cells precedes sexually dimorphic neuron growth and survival in an avian song control nucleus. *J. Neurobiol.*, **30**, 531-542.
- Nordeen, K. W. & Nordeen, E. J. (1993). Long-term maintenance of song in adult zebra finches is not affected by lesions of a forebrain region involved in song learning. *Behav. Neural Biol.*, **59**, 79-82.
- Norstrom, E., Soderstrom, K. & Johnson, F. (1999). Expression of BDNF during zebra finch song development. *Soc. Neurosci. Abstr.*, **25**, 1368.
- Nottebohm, F. (1987). Plasticity in adult avian central nervous system: Possible relation between hormones, learning, and brain repair. In *Handbook of Physiology* (F. Plum, ed.). American Physiological Society; Wash. D. C., pp. 85-108.
- Nottebohm, F. (1999). The anatomy and timing of vocal learning in birds. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 63-110.
- Nottebohm, F. (1993). The search for neural mechanisms that define the sensitive period for song learning in birds. *Neth. J. Zool.*, **43**, 193-234.
- Nottebohm, F. (1988). Hormonal regulation of synapses and cell number in the adult canary brain and its relevance to theories of long-term memory storage. In *Neural Control of Reproductive Function* (J. M. Lakoski, J. R. Perez-Pole & D. K. Rassin, eds.). Alan R. Liss, Inc.
- Nottebohm, F. & Crane, L. A. (1986). Developmental and seasonal changes in canary song and their relation to changes in the anatomy of song-control nuclei. *Behav. Neural Biol.*, **47**, 197-211.
- Nottebohm, F., O'Loughlin, B., Gould, K., Yohay, K. & Alvarez-Buylla, A. (1994). The life span of new neurons in a song control nucleus of the adult canary brain depends on time of year when these cells are born. *Proc. Natl. Acad. Sci. USA*, **91**, 7849-7853.
- Nottebohm, F., Nottebohm, M. E. & Crane, L. (1986). Developmental and seasonal changes in canary song and their relation to changes in the anatomy of song-control nuclei. *Behav. Neural Biol.*, **46**, 445-471.
- Nowicki, S., Peters, S. & Podos, J. (1998). Song learning, early nutrition and sexual selection in songbirds. *Amer. Zool.*, **38**, 179-190.
- Nowicki, S., Westneat, M. W. & Hoese, W. (1992). Birdsong: motor function and the evolution of communication. *Semin. Neurosci.*, **4**, 385-390.
- Nowicki, S., Peters, S., Clayton, C. & Searcy, W. A. (1995). Influence of song type variation on song learning in sparrows. *Am. Zool.*, **35**, 86A.
- Nowicki, S. & Podos, J. (1993). Complexity, coupling and contingency in the production of birdsong. In *Perspectives in Ethology*, Vol. 10 (P. P. G. Bateson, P. Klopfer & N. Thompson, eds.). Plenum Press; New York, pp. 159-186.
- Nowicki, S., Peters, S., Searcy, W. A. & Clayton, C. (1999). The development of within-song type variation in song sparrows. *Anim. Behav.*, **57**, 1257-1264.

- Nowicki, S., Searcy, W. A. & Hughes, M. (1998). The territory defense function of song in song sparrows: A test with the speaker occupation design. *Behaviour*, **135**, 615-628.
- Nowicki, S. & Nelson, D. (1990). Defining natural categories in acoustic signals: comparison of three methods applied to "chick-a-dee" call notes. *Ethology*, **86**, 89-101.
- Nowicki, S., Podos, J. & Valdes, F. (1994). Temporal patterning of within-song type and between-song type variation in song repertoires. *Behav. Ecol. Sociobiol.*, **34**, 329-335.
- Nowicki, S. & Marler, P. (1988). How do birds sing? *Music Perception*, **5**, 391-426.
- Nowicki, S., Searcy, W. A., Hughes, M. & Podos, J. (2001). The evolution of bird song: male and female response to song innovation in swamp sparrows. *Anim. Behav.*, **62**, 1189-1195.
- Nowicki, S., Searcy, W. A., Hughes, M. & Podos, J. (1999). Sexual selection limits evolutionary innovation in birdsong. *Am. Zool.*, **39**, 112A.
- Nowicki, S., Hasselquist, D., Bensch, S. & Peters, S. (2000). Nestling growth and song repertoire size in great reed warblers: Evidence for song learning as an indicator mechanism in mate choice. *Proc. Roy. Soc. Lond. B.*, **267**, 2419-2424.
- Nowicki, S., Peters, S., Wu, D., & Whitley, K. (1992). Role of learning in the ontogeny of vocal tract function in birdsong. *Am. Zool.*, **32**, 6A.
- Nuttall, R. J. (1994). Vocal behaviour of the quail finch *Ortygospiza atricollis*. *Ostrich*, **64**, 97-104.
- Nystroem, K. G. K. (1997). Food density, song rate, and body condition in territory-establishing willow warblers (*Phylloscopus trochilus*). *Can. J. Zool.*, **75**, 47-58.
- O'Loghlen, A. L. & Rothstein, S. I. (1993). An extreme example of delayed vocal development: song learning in a population of wild brown-headed cowbirds. *Anim. Behav.*, **46**, 293-304.
- O'Loghlen, A. L. & Beecher, M. D. (1997). Sexual preferences for mate song types in female song sparrows. *Anim. Behav.*, **53**, 835-841.
- O'Loghlen, A. L. & Rothstein, S. I. (2002). Ecological effects on song learning: delayed development is widespread in wild populations of brown-headed cowbirds. *Anim. Behav.*, **63**, 475-486.
- O'Loghlen, A. L. (1993). *Vocal ontogeny and the maintenance of dialects in wild populations of brown-headed cowbirds*. Ph.D. dissertation. University of California; Santa Barbara.
- O'Loghlen, A. L. (1995). Delayed access to local songs prolongs vocal development in dialect populations of brown-headed cowbirds. *Condor*, **97**, 402-414.
- O'Loghlen, A. L. & Beecher, M. D. (1999). Mate, neighbour and stranger songs: a female song sparrow perspective. *Anim. Behav.*, **58**, 13-20.
- O'Loghlen, A. L. & Rothstein, S. I. (1995). Culturally correct song dialects are correlated with male age and female song preferences in wild populations of brown-headed cowbirds. *Behav. Ecol. Sociobiol.*, **36**, 251-259.
- Oberweger, K. & Goller, F. (2001). The metabolic cost of birdsong production. *J. Exp. Biol.*, **204**, 3379-3388.
- Okanoya, K. & Dooling, R. J. (1990). Detection of gaps in noise by budgerigars (*Melopsittacus undulatus*) and zebra finches (*Poephila guttata*). *Hear. Res.*, **50**, 185-192.
- Okanoya, K., Yoneda, T. & Kimura, T. (1993). Acoustical variations in sexually dimorphic features of distance calls in domesticated zebra finches *Taeniopygia guttata castanotis*. *J. Ethol.*, **11**, 29-36.
- Okanoya, K. & Dooling, R. J. (1987). Strain differences in auditory thresholds in the canary (*Serinus canarius*). *J. Comp. Psychol.*, **101**, 213-215.
- Okanoya, K. & Dooling, R. J. (1990). Temporal integration in zebra finches (*Poephila guttata*). *J. Acoust. Soc. Am.*, **87**, 2782-2784.
- Okanoya, K. (2000). Perception of missing fundamentals in zebra finches and Bengalese finches. *J. Acoust. Soc. Japan*, **21**, 63-68.
- Okanoya, K. (2000). Sexual selection for song complexity and modifications of brain structures in songbirds. *Jap. J. Ornithol.*, **49**, 79-85.
- Okanoya, K. & Ikebuchi, M. (2000). Sex differences in song perception in Bengalese finches and zebra finches as measured by the cardiac response. *Soc. Neurosci. Abstr.*, **26**.
- Okanoya, K. & Yamaguchi, A. (1997). Adult Bengalese finches (*Lonchura striata* var. *domestica*) require real-time auditory feedback to produce normal song syntax. *J. Neurobiol.*, **33**, 343-356.
- Okanoya, K., Ikebuchi, M., Uno, H. & Watanabe, S. (2001). Left-side dominance for song discrimination in Bengalese finches (*Lonchura striata* var. *domestica*). *Anim. Cogn.*, **4**, 241-245.
- Okanoya, K., Nakamura, K. & Hirata, N. (2001). Auditory and motor characteristics of the nucleus RA in Bengalese finches. *Soc. Neurosci. Abstr.*, **27**, 842.
- Okanoya, K., Tsumaki, S. & Honda, E. (2000). Perception of temporal properties in self-generated songs by Bengalese finches (*Lonchura striata* var. *domestica*). *J. Comp. Psychol.*, **114**, 239-245.
- Okuhata, S. & Nottebohm, F. (1992). Nucleus UVA might be part of a feedback circuit for song processing. *Soc. Neurosci. Abstr.*, **18**, 527.
- Osiejuk, T. S. (2001). Acoustic communication in territorial ortolan bunting males. *Adv. Ethol.*, **36**, 233.

- Osiejuk, T. S. & Kuczynski, L. (2000). Mixed and atypical singers among treecreepers *Certhia brachydactyla* and *C. familiaris*: A review and preliminary data from western Poland. *Biol. Bull. Poznan*, **37**, 83-94.
- Osiejuk, T. S. & Kuczynski, L. (2000). Song functions and territoriality in Eurasian treecreeper *Certhia familiaris* and short-toed treecreeper *Certhia brachydactyla*. *Acta Ornithol.* (Warsaw), **35**, 109-116.
- Osiejuk, T. S. (2000). Recognition of individuals by song, using cross-correlation of sonograms of ortolan buntings *Emberiza hortulana*. *Biol. Bull. Poznan*, **37**, 95-106.
- Osiejuk, T. S. & Kuczynski, L. (1997). Factors affecting song-rate in treecreepers *Certhia* spp. *Adv. Ethol.*, **32**, 129.
- Otter, K., McGregor, P. K., Terry, A. M. R., Burford, F. R. L., Peake, T. M. & Dabelsteen, T. (1999). Do female great tits (*Parus major*) assess males by eavesdropping? A field study using interactive playback. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **266**, 1305-1309.
- Otter, K. (1993). *Intersexual selection and song in the black-capped chickadee, Parus atricapillus*. M.S. thesis, Queen's University; Kingston, Canada.
- Otter, K., Chruszcz, B. & Ratcliff, L. (1997). Honest advertisement and song output during the dawn chorus of black-capped chickadees. *Behav. Ecol.*, **8**, 167-173.
- Otter, K. A., Ratcliffe, L., Njegovan, M. & Fotheringham, J. (2002). Importance of frequency and temporal song matching in black-capped chickadees: Evidence from interactive playback. *Ethology*, **108**, 181-191.
- Otter, K. & Ratcliffe, L. (1993). Changes in singing behaviour of male black-capped chickadees (*Parus atricapillus*) following mate removal. *Behav. Ecol. Sociobiol.*, **33**, 409-414.
- Otter, K. & Ratcliffe, L. (1994). Changes in singing behavior of male black-capped chickadees (*Parus atricapillus*) following mate removal. *Behav. Ecol. Sociobiol.*, **33**, 409-414.
- Paeckert, M., Martens, J. & Hofmeister, T. (2001). Vocalizations of firecrests from the islands of Madeira and Mallorca (*Regulus ignicapillus madeirensis*, *R. i. balearicus*). *J. Ornithol.*, **142**, 16-29.
- Palacios, M. G. & Tubaro, P. L. (2000). Does beak size affect acoustic frequencies in woodcreepers? *Condor*, **102**, 553-560.
- Palestrini, C. & Rolando, A. (1996). Differential calls by carrion and hooded crows (*Corvus corone corone* and *C. c. cornix*) in the alpine hybrid zone. *Bird Study*, **43**, 364-370.
- Parisot, M., Vallet, E., Nagle, L. & Kreutzer, M. (2002). Male canaries discriminate among songs: Call rate is a reliable measure. *Behaviour*, **139**, 55-63.
- Park, S.-R. & Park, D. (2000). Song type for intrasexual interactions in the bush warbler. *Auk*, **117**, 228-231.
- Park, K. H., Clayton, D. F. & Ivanco, T. (2001). Contextual modulation of the ZENK gene response to sound in the zebra finch caudomedial neostriatum (NCM). *Soc. Neurosci. Abstr.*, **27**, 844.
- Park, S.-R., Han, E.-D. & Sung, H.-C. (1999). Definition and function of two song types of the bush warbler (*Cettia diphone borealis*). *Korean J. Biol. Sci.*, **3**, 149-151.
- Pavey, C. R. & Smyth, A. K. (1998). Effects of avian mobbing on roost use and diet of powerful owls, *Ninox strenua*. *Anim. Behav.*, **55**, 313-318.
- Payne, R. B. (1996). Song traditions in indigo buntings: Origin, improvisation, dispersal, and extinction in cultural evolution. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 198-220.
- Payne, R. B. & Payne, L. L. (1996). Demography, dispersal and song dialects and the persistence of partnerships in indigo buntings. In *Partnerships in Birds: The Study of Monogamy* (J. M. Black, ed.). Oxford University Press; Oxford, pp. 305-320.
- Payne, R. B., Woods, J. L., Siddall, M. E. & Parr, C. S. (2000). Randomization analyses: Mimicry, geographic variation and cultural evolution of song in brood-parasitic straw-tailed whydahs, *Vidua fischeri*. *Ethology*, **106**, 261-282.
- Payne, R. B. & Payne, L. L. (1995). Song mimicry and association of brood-parasitic indigobirds (*Vidua*) with Dybowski's twinspace (*Eustichospiza dybowskii*). *Auk*, **112**, 649-658.
- Payne, R. B. (1986). Bird songs and avian systematics. *Curr. Ornithol.*, **87**, 126.
- Payne, R. B., Payne, L. L. & Woods, J. L. (1998). Song learning in brood-parasitic indigobirds *Vidua chalybeata*: song mimicry of the host species. *Anim. Behav.*, **55**, 1537-1553.
- Payne, R. B. & Payne, L. L. (1994). Song mimicry and species status of the indigobirds *Vidua*: Associations with quail-finch *Ortygospiza atricollis*, goldbreast *Amandava subflava* and brown twinspace *Clytospiza monteiri*. *Ibis*, **136**, 291-304.
- Payne, R. B. & Payne, L. L. (1997). Field observations, experimental design, at the time and place of learning bird songs. In *Social Influences on Vocal Development* (C. T. Snowdon & M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 57-84.
- Payne, R. B. & Payne, L. L. (1993). Song copying and cultural transmission in indigo buntings. *Anim. Behav.*, **46**, 1045-1065.
- Payne, R. B., Payne, L. L., Woods, J. L. & Sorenson, M. D. (2000). Imprinting and the origin of parasite-host

- species associations in brood-parasitic indigobirds, *Vidua chalybeata*. *Anim. Behav.*, **59**, 69-81.
- Peake, T. M., Terry, A. M. R., McGregor, P. K. & Dabelsteen, T. (2001). Investigating eavesdropping in male great tits: A two speaker approach. *Adv. Ethol.*, **36**, 94.
- Peake, T. M., Terry, A. M., McGregor, P. K. & Dabelsteen, T. (2001). Male great tits eavesdrop on simulated male-to-male vocal interactions. *Proc. Roy. Soc. Lond. B.*, **268**, 1183-1187.
- Pearson, F. D., Mann, N. I. & Slater, P. J. B. (1999). Does leg-ring colour affect song tutor choice in zebra finches? *Anim. Behav.*, **57**, 173-180.
- Pepperberg, I. M. & Neapolitan, D. M. (1988). Second language acquisition: A framework for studying the importance of input and interaction in exceptional song acquisition. *Ethology*, **77**, 150-168.
- Pepperberg, I. M. (1992). What studies on song learning can teach us about playback experiments. In *Playback and Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 45-57.
- Pepperberg, I. M. (1988). The importance of social interaction and observation in the acquisition of communicative competence: possible parallels between avian and human learning. In *Social Learning: A Comparative Approach* (T. T. Zentall & B. G. Galef, Jr., eds.). Erlbaum; Hillsdale, N. J., pp. 279-299.
- Perez-Villafana, M., de Silva G., H. G. & DeSucre-Medrano, A. (1999). Sexual dimorphism in the song of Sumichrast's wren. *Wilson Bull.*, **111**, 128-130.
- Perkel, D. J., Farries, M. A., Luo, M. & Ding, L. (2002). Electrophysiological analysis of a songbird basal ganglia circuit essential for vocal plasticity. *Brain Res. Bull.*, **57**, 529-532.
- Perkel, D. J. & Ferries, M. A. (2000). Complementary 'bottom up' and 'top-down' approaches to basal ganglia function. *Curr. Opin. Neurobiol.*, **10**, 725-731.
- Perkel, D. J. (1995). Differential modulation of excitatory synaptic transmission by norepinephrine and baclofen in zebra finch nucleus RA. *Soc. Neurosci. Abstr.*, **20**, 165.
- Peter, J. M. (1993). Vocal mimicry of native species of song thrush *Turdus philomelos*. *Austral. Bird Watcher*, **15**, 92-93.
- Peters, S., Searcy, W. A., Beecher, M. D. & Nowicki, S. (2000). Geographic variation in the organization of song sparrow repertoires. *Auk*, **117**, 936-942.
- Peters, S. & Nowicki, S. (1996). Development of tonal quality in birdsong: Further evidence from song sparrows. *Ethology*, **102**, 323-335.
- Petersen, B. R., Ball, G. F. & Ritters, L. V. (2000). Met-enkephalin immunoreactive fiber density within the medial preoptic area is positively correlated with song expression in the male european starling. *Soc. Neurosci. Abstr.*, **26**.
- Petrinovich, L. (1988). The role of social factors in white-crowned sparrow song development. In *Social learning: Psychological and biological perspectives* (T. R. Zentall & B. G. Galef, eds.). Erlbaum; Hillsdale, N.J., pp. 255-278.
- Pfister, U. (1995). *Raven communication*. Ph.D. thesis. University of Bern (German).
- Pfister, U. (1997). Communication in ravens *Corvus corax*: again new aspects of an old problem. *Bioacoustics*, **8**, 256.
- Phillmore, L. S., Sturdy, C. B., Turyk, M.-R. M. & Weisman, R. G. (2002). Discrimination of individual vocalizations by black-capped chickadees (*Poecile atricapilla*). *Anim. Learn. Behav.*, **30**, 43-52.
- Phillmore, L. S., Sturdy, C. B., Ramsay, S. M. & Weisman, R. G. (1998). Discrimination of auditory distance cues by blackcapped chickadees (*Poecile atricapillus*) and zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **112**, 282-291.
- Pinxten, R. & Eens, M. (1998). Male starlings sing most in the late morning, following egg-laying: A strategy to protect their paternity? *Behaviour*, **135**, 1197-1211.
- Pinxten, R., Eens, M. & de Ridder, E. (1997). Effects of testosterone on social dominance, song activity, mate attraction behaviour and factors affecting survival in captive male European starlings. *Adv. Ethol.*, **32**, 65.
- Pizo, M. A. & Aleixo, A. (1998). Lek behavior of the gray-hooded flycatcher. *Condor*, **100**, 726-731.
- Plummer, T. K. (2001). A motor-guided model of vocal imitation. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Podos, J., Sherer, J. K., Peters, S. & Nowicki, S. (1995). Ontogeny of vocal tract movements during song production in song sparrows. *Anim. Behav.*, **50**, 1287-1296.
- Podos, J. (2001). Correlated evolution of morphology and vocal signal structure in Darwin's finches. *Nature*, **409**, 185-188.
- Podos, J., Nowicki, S. & Peters, S. (1999). Permissiveness in the learning and development of song syntax in swamp sparrows. *Anim. Behav.*, **58**, 93-103.
- Podos, J. (1997). A performance constraint on the evolution of trilled vocalizations in a songbird family (Passeriformes: Emberizidae). *Evolution*, **51**, 537-551.
- Podos, J. (1996). Motor constraints on vocal development in a songbird. *Anim. Behav.*, **51**, 1061-1070.

- Podos, J. (1996). Performance limits on vocal evolution in swamp sparrows. *Am. Zool.*, **36**, 92A.
- Poesel, A. & Dabelsteen, T. (2001). Making yourself heard: A study of masking effects on blue tit *Parus caeruleus* singing interactions. *Adv. Ethol.*, **36**, 240.
- Poesel, A., Foerster, K. & Kempenaers, B. (2001). The dawn song of the blue tit *Parus caeruleus* and its role in sexual selection. *Ethology*, **107**, 521-531.
- Poirier, C., Henry, L., Mathelier, M. & Hausberger, M. (2001). Effect of social experience on song development in starling (*Sturnus vulgaris*). *Adv. Ethol.*, **36**, 241.
- Pomeroy, D. E. (1993). Song in the lives of three common birds in Uganda (*Streptopelia semitorquata*, *Turdus pelios*, *Camaroptera brachyura*). In *Koninklijk Museum voor Midden Afrika Tervuren Belgie Annalen Zoologische Wetenschappen, Vol. 268. Birds and the African Environment* (R. T. Wilson, ed). Royal Museum for Central Afrika; Tervuren, Belgium, pp. 447-452.
- Popp, J. W. (1989). Temporal aspects of singing interactions among territorial ovenbirds (*Seiurus aurocapillus*). *Ethology*, **82**, 127-133.
- Price, J. & Wiley, R. H. (2000). Duets and drawls. *Natural History*, **3/2000**, 50-53
- Price, J. J. (1999). Recognition of family-specific calls in stripe-backed wrens. *Anim. Behav.*, **57**, 483-492.
- Price, K. (1998). Benefits of begging for yellow-headed blackbird nestlings. *Anim. Behav.*, **56**, 571-577.
- Price, J. J. (1998). Family- and sex-specific vocal traditions in a cooperatively breeding songbird. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 497-502.
- Prum, R. O. (1998). Sexual selection and the evolution of mechanical sound production in manakins (Aves: Pipridae). *Anim. Behav.*, **55**, 977-994.
- Prum, R. O. (1993). Phylogeny, biogeography, and evolution of the broadbills (Eurylaimidae) and asities (Philepittidae) based on morphology. *Auk*, **110**, 304-324.
- Prum, R. O. (1992). Syringeal morphology, phylogeny, and evolution of the neotropical manakins (Aves: Pipridae). *Am. Mus. Novit.*, **3043**, 1-65.
- Pytte, C. L. (1997). Song organization of house finches at the edge of an expanding range. *Condor*, **99**, 942-954.
- Pytte, C. L. & Suthers, R. A. (1999). A bird's own song contributes to conspecific song perception. *NeuroReport*, **10**, 1773-1778.
- Pytte, C. L. & Kirn, J. R. (2001). Neurogenesis may promote song stability in the adult zebra finch. *Soc. Neurosci. Abstr.*, **27**, 1709.
- Pytte, C. L. & Suthers, R. A. (1999). Juvenile vocal experience contributes to adult song perception. *Soc. Neurosci. Abstr.*, **25**, 624.
- Pytte, C. L. & Suthers, R. A. (2000). Sensitive period for sensorimotor integration during vocal motor learning. *J. Neurobiol.*, **42**, 172-189.
- Quaglino, A. E., Craig-Veit, C. B., Viant, M. R., Erichsen, A. L., Fry, D. M. & Millam, J. R. (2002). Oral estrogen masculinizes female zebra finch song system. *Horm. Behav.*, **41**, 236-241.
- Radesaeter, T. S. & Jakobson, S. (1988). Intra- and intersexual functions of song in the willow warbler (*Phylloscopus trochilus*). *Proc. XIX Int. Ornithol. Congr.*, pp. 1382-1390.
- Raetti, O. & Alatalo, R. V. (1993). Determinants of the mating success of polyterritorial pied flycatcher males. *Ethology*, **94**, 137-146.
- Rappole, J. H., McShea, W. J. & Vega-Rivera, J. (1993). Evaluation of two survey methods in upland avian breeding communities. *J. Field Ornithol.*, **64**, 55-70.
- Rashotte, M. E., Sedunova, E. V., Johnson, F. & Pastukhov, I. F. (2001). Influence of food and water availability on undirected singing and energetic status in adult male zebra finches (*Taeniopygia guttata*). *Physiol. Behav.*, **74**, 533-541.
- Rasika, S., Nottebohm, F. & Alvarez-Buylla, A. (1994). Testosterone increases the recruitment and/or survival of new high vocal center neurons in adult female canaries. *Proc. Natl. Acad. Sci. USA*, **91**, 7854-7858.
- Rasmussen, R. (1997). Song repertoire in blackbirds (*Turdus merula*): individuality and song-type sharing. *Adv. Ethol.*, **32**, 130.
- Ratcliffe, L. & Weisman, R. G. (1986). Song sequence discrimination in the black-capped chickadee (*Parus atricapillus*). *J. Comp. Psychol.*, **100**, 361-367.
- Ratcliffe, L. & Weisman, R. G. (1992). Pitch processing strategies in birds: A comparison of laboratory and field studies. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 211-223.
- Ratcliffe, L. & Otter, K. (1996). Sex differences in song recognition. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 339-355.
- Ratti, O. & Siikamaki, P. (1993). Female attraction behaviour of radio tagged polyterritorial pied flycatcher males. *Behaviour*, **127**, 279-288.
- Rauske, P. L. & Margoliash, D. (1999). Does behavioral state modulate sensorimotor properties in HVC? *Soc. Neurosci. Abstr.*, **25**, 624.

- Rauske, P. L., Dave, A. S. & Margoliash, D. (2001). Sleep in adult zebra finches functionally rewires the song system nucleus RA. *Soc. Neurosci. Abstr.*, **27**, 841.
- Read, M. L. (1987). Costliness and reliability in the singing vigour of Ipswich sparrows. *Anim. Behav.*, **35**, 1735-1743.
- Rebeiro, S., Cecchi, G. A., Magnasco, M. O. & Mello, C. V. (1998). Toward a song code: Evidence for a syllabic representation in the canary brain. *Neuron*, **21**, 359-371.
- Redondo, T. & Castro, F. (1992). The increase in risk of predation with begging activity in broods of magpies *Pica pica*. *Ibis*, **134**, 180-187.
- Redondo, T. (1999). Manipulative begging by parasitic cuckoo nestlings and paradoxical host behaviour. *Trends Ecol. Evol.*, **14**, 107.
- Reeves, B. J., Brenowitz, E. A. & Beecher, M. D. (2001). Seasonal changes in avian song control circuits do not cause seasonal changes in song perception. *Soc. Neurosci. Abstr.*, **27**, 1707.
- Regelski, D. J. & Moldenhauer, R. R. (1996). Discrimination between regional song forms in the northern parula. *Wilson Bull.*, **108**, 335-341.
- Rehsteiner, U., Geisser, H. & Reyer, H.-U. (1998). Singing and mating success in water pipits: one specific song element makes all the difference. *Anim. Behav.*, **55**, 1471-1481.
- Repentigny, Y. de, Ouellet, H. & McNeil, R. (2000). Song versus plumage in some North American oscines: Testing Darwin's hypothesis. *Ecoscience*, **7**, 137-148.
- Revilla, V., Revilla, R. & Fernandez-Lopez, A. (1999). A comparative study of the beta-adrenoceptors in higher song nuclei of birds. *Neurosci. Lett.*, **271**, 9-12.
- Ribeiro, S., Pinaud, R. & Mello, C. V. (1999). Noradrenergic modulation of song-induced ZENK expression in the zebra finch brain. *Soc. Neurosci. Abstr.*, **25**, 865.
- Rich, S. L., Goller, F. & Sengelaub, D. R. (1992). A volumetric study of the song control nuclei of male and female starlings. *Soc. Neurosci. Abstr.*, **18**, 528.
- Riebel, K. & Slater, P. J. B. (1998). Testing female chaffinch song preferences by operant conditioning. *Anim. Behav.*, **56**, 1443-1453.
- Riebel, K. & Slater, P. J. B. (1999). Do male chaffinches *Fringilla coelebs* copy song sequencing and bout length from their tutors? *Ibis*, **141**, 680-686.
- Riebel, K. & Slater, P. J. B. (1997). Song type switching in the chaffinch *Fringilla coelebs*. *Adv. Ethol.*, **32**, 120.
- Riebel, K. & Slater, P. J. B. (1998). Male chaffinches (*Fringilla coelebs*) can copy calls from a tape tutor. *J. Orn.*, **139**, 353-355.
- Riebel, K. & Slater, P. J. B. (1999). Song type switching in the chaffinch, *Fringilla coelebs*: timing or counting? *Anim. Behav.*, **57**, 655-661.
- Riebel, K. & Todt, D. (1997). Light flash stimulation alters the nightingale's singing style: Implications for song control mechanisms. *Behaviour*, **134**, 789-808.
- Riebel, K. (2000). Early exposure leads to repeatable preferences for male song in female zebra finches. *Proc. Roy. Soc. Lond. B.*, **267**, 2553-2558.
- Riebel, K. & Slater, P. J. B. (2000). Testing the flexibility of song type bout duration in the chaffinch, *Fringilla coelebs*. *Anim. Behav.*, **59**, 1135-1142.
- Riebel, K., Smallegange, I. M., Terpstra, N. J. & Bolhuis, J. J. (2002). Sexual equality in zebra finch song preference: evidence for a dissociation between song recognition and production learning. *Proc. Roy. Soc. Lond. B.*, **269**, 729-733.
- Riebel, K., Smallegange, I., Terpstra, N. J. & Bolhuis, J. J. (2001). Female and male zebra finch siblings do not differ in their adult preferences for the father's song. *Adv. Ethol.*, **36**, 251.
- Rimmer, C. C., Atwood, J. L., McFarland, K. P. & Nagy, L. R. (1996). Population density, vocal behavior, and recommended survey methods for Bicknell's thrush. *Wilson Bull.*, **108**, 639-649.
- Rinden, H., Lampe, H. M., Slagsvold, T. & Espmark, Y. O. (2000). Song quality does not indicate male parental abilities in the pied flycatcher *Ficedula hypoleuca*. *Behaviour*, **137**, 809-823.
- Ritchison, G. (1995). Characteristics, use and possible functions of the perch songs and chatter calls of male common yellowthroats. *Condor*, **97**, 27-38.
- Ritchison, G. (1986). The singing behavior of female northern cardinals. *Condor*, **88**, 156-159.
- Riters, L. V. & Ball, G. F. (1999). Lesions to the medial preoptic area affect singing in the male European starling (*Sturnus vulgaris*). *Horm. Behav.*, **36**, 276-286.
- Riters, L. V. & Ball, G. F. (2002). Sex differences in the densities of alpha(2)-adrenergic receptors in the song control system, but not the medial preoptic nucleus in zebra finches. *J. Chem. Neuroanat.*, **23**, 269-277.
- Riters, L. V., Eens, M., Pinxten, R., Duffy, D. L., Balthazart, J. & Ball, G. F. (2000). Seasonal changes in courtship song and the medial preoptic area in male European starlings (*Sturnus vulgaris*). *Horm. Behav.*, **38**, 250-261.
- Riters, L. V., Eens, M., Pinxten, R. & Ball, G. F. (2002). Seasonal changes in the densities of alpha2-

- noradrenergic receptors are inversely related to changes in testosterone and the volumes of song control nuclei in male European starlings. *J. Comp. Neurol.*, **444**, 63-74.
- Riters, L. V., Eens, M., Pinxten, R., Duffy, D. L., Balthazart, J. & Ball, G. F. (2000). Seasonal variation in singing and the medial preoptic area in male European starlings. *Soc. Neurosci. Abstr.*, **26**.
- Rivers, J. W. & Kroodsma, D. E. (2000). Singing behavior of the hermit thrush. *J. Field Ornithol.*, **71**, 467-471.
- Robertson, B. C. (1996). Vocal mate recognition in a monogamous, flock-forming bird, the silvereye, *Zosterops lateralis*. *Anim. Behav.*, **51**, 303-311.
- Robinson, F. N. & Curtis, H. S. (1996). The vocal displays of the lyrebirds (Menuridae). *Emu*, **96**, 258-275.
- Rodrigues, M. (1996). Song activity in the chiffchaff: territorial defence or mate guarding? *Anim. Behav.*, **51**, 709-716.
- Rogers, C. (1995). High resolution analysis of bird sounds. *1995 International Conference on Acoustics, Speech, and Signal Processing, Conference Proceedings, Vol. 5*, pp. 3011-3014.
- Rosado, R., Espino, G. G., Rosenfield, D. B. & Helekar, S. A. (2001). Experience-dependent changes in cytochrome oxidase staining patterns in zebra finch song nuclei. *Soc. Neurosci. Abstr.*, **27**, 1425.
- Rosen, M. J. & Mooney, R. (2000). Intrinsic and extrinsic contributions to auditory selectivity in a song nucleus critical for vocal plasticity. *J. Neurosci.*, **20**, 5437-5448.
- Rosen, M. J. & Mooney, R. (2000). Erratum: Intrinsic and extrinsic contributions to auditory selectivity in a song nucleus critical for vocal plasticity. *J. Neurosci.*, **20**, x
- Rosen, M. J. & Mooney, R. (2000). Local and extrinsic contributions to song-selectivity in the zebra finch song nucleus HVc. *Soc. Neurosci. Abstr.*, **26**.
- Rosen, M. J. & Mooney, R. (2001). Sources of song-evoked inhibition in the zebra finch song nucleus HVc. *Soc. Neurosci. Abstr.*, **27**, 841.
- Rosen, M. J. & Mooney, R. (1999). The contribution of local circuitry to refinement of song-selective responses in a song learning pathway. *Soc. Neurosci. Abstr.*, **25**, 623.
- Rosenfield, D. B., Espino, G., Botas, A., Viswanath, N. & Helekar, S. A. (1999). Distinctive song features in zebra finches producing song syllable repetitions. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Rossell, C. R., Jr. (2001). Song perch characteristics of golden-winged warblers in a mountain wetland. *Wilson Bull.*, **113**, 246-248.
- Rost, R. (1987). *Origin, maintenance and function of song dialects in the marsh tit Parus palustris - a test of models*. Hartung-Gorre Verlag; Konstanz (German).
- Rost, R. (1989). Song dialects of the marsh tit (*Parus palustris*) and their functional significance: a test of models. In *Current Topics in Avian Biology* (R. van den Elzen, K. L. Schuchmann & K. Schmidt-Koenig, eds). Proc. Int. 100 Deutschen Ornithologen-Gesellschaft Meeting, 1988, Bonn, Germany, pp. 111-122.
- Rothstein, S. I., Yokel, D. A. & Fleischer, R. C. (1986). Social dominance, mating and spacing systems, female fecundity, and vocal dialects in captive and free-living brown-headed cowbirds. *Curr. Ornithol.*, **3**, 127-185.
- Roulin, A. (2001). Screaming as a strategy to reduce the predation risk incurred by begging? *Behaviour*, **138**, 615-627.
- Roulin, A. (2001). On the cost of begging vocalization: Implications of vigilance. *Behav. Ecol.*, **12**, 506-512.
- Rui, L. & Hironobu, S. (1999). Auditory-vocal-cholinergic pathway in the zebra finch brain. *Comp. Biochem. Physiol. A.*, **124**, Suppl., S99.
- Rusun, L., Quing, Y. & Fumin, L. (1998). Vocalization of the barred laughing-thrush *Garrulax lunulatus* (Timalidae) in China - a preliminary study. *Acta Ornithologica*, **33**, 127-133.
- Ryals, B. M., Dooling, R. J., Westbrook, E., Dent, M. L., MacKenzie, A. & Larsen, O. N. (1999). Avian species differences in susceptibility to noise exposure. *Hear. Res.*, **131**, 71-88.
- Ryan, M. J. (2001). Food, song and speciation. *Nature*, **409**, 139-140.
- Sacchi, R., Saino, N. & Galeotti, P. (2002). Features of begging calls reveal general condition and need of food of barn swallow (*Hirundo rustica*) nestlings. *Behav. Ecol.*, **13**, 268-273.
- Saino, N., Galeotti, P., Sacchi, R. & Moeller, A. P. (1997). Song and immunological condition in male barn swallows (*Hirundo rustica*). *Behav. Ecol.*, **8**, 364-371.
- Saino, N. & Moeller, A. P. (1995). Testosterone correlates of mate guarding, singing and aggressive behaviour in male barn swallows, *Hirundo rustica*. *Anim. Behav.*, **49**, 465-472.
- Saito, N. & Maekawa, M. (1993). Birdsong: the interface with human language. *Brain Dev.*, **15**, 31-40.
- Sakaguchi, H. (1996). Sex differences in the developmental changes of GABAergic neurons in zebra finch song control nuclei. *Exp. Brain Res.*, **108**, 62-68.
- Sakaguchi, H. & Yamaguchi, A. (1997). Early deafening affects PKC activity during bird song learning. *Neurosci. Res.*, **27-29**, S170.
- Sakaguchi, H., Wada, K., Maekawa, M., Watsuji, T. & Hagiwara, M. (1999). Song-induced phosphorylation of cAMP response element binding protein in the songbird brain. *J. Neurosci.*, **19**, 3973-3981.

- Sakaguchi, H., Kubota, M. & Saito, N. (1992). In vitro release of glutamate and aspartate from zebra finch song control nuclei. *Exp. Brain Res.*, **88**, 560-562.
- Sakaguchi, H., Wada, K. & Hagiwara, M. (1999). Song-induced CREB phosphorylation during avian song learning. *Soc. Neurosci. Abstr.*, **25**, 625.
- Sakaguchi, H., Li, R. & Taniguchi, I. (2000). Sex differences in the ventral paleostriatum of the zebra finch: Origin of the cholinergic innervation of the song control nuclei. *NeuroReport*, **11**, 2727-2731.
- Saldanha, C. J., Schultz, J. D., London, S. E. & Schlinger, B. A. (2000). Telencephalic aromatase but not a song circuit in a sub-oscine passerine: the golden collared manakin (*Manacus vitellinus*). *Brain Behav. Evol.*, **56**, 29-37.
- Salgado-Commissariat, D., Rosenfield, D. B. & Helekar, S. A. (2001). Metabotropic glutamate receptor-mediated modulation of synaptic responses in a song nucleus of zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1425.
- Sanderson, K. & Crouch, H. (1993). Vocal repertoire of the Australian magpie *Gymnorhina tibicen* in South Australia. *Austral. Bird Watcher*, **15**, 162-164.
- Sartor, J. J. & Ball, G. F. (2001). Song output following manipulation of social factors and effects on song control nuclei in European starlings. *Soc. Neurosci. Abstr.*, **27**, 1709.
- Sartor, J. J., Bentley, G. E. & Ball, G. F. (2000). Exogenous melatonin treatment decreases song output and is associated with a decrease in the volume of HVC in European starlings. *Soc. Neurosci. Abstr.*, **26**.
- Saur, B., Maciejok, J. & Bergmann, H.-H. (1996). Where to sing and where to call. Vocalizations of chaffinches *Fringilla coelebs* inside and outside their territories. *Bioacoustics*, **6**, 273-279.
- Scharff, C., Nottebohm, F. & Cynx, J. (1998). Conspecific and heterospecific song discrimination in male zebra finches with lesions in the anterior forebrain pathway. *J. Neurobiol.*, **36**, 81-90.
- Scharff, C., Ramos, J., Garcia-Verdugo, J. M. & Nottebohm, F. (2000). 3-D reconstruction of neuronal clusters in HVC of male zebra finches. *Soc. Neurosci. Abstr.*, **26**.
- Scharff, C., Kirn, J. R., Grosman, M., Macklis, J. D. & Nottebohm, F. (2000). Targeted neuronal death affects neuronal replacement and vocal behavior in adult songbirds. *Neuron*, **25**, 481-492.
- Schaub, M., Schwilch, R. & Jenni, L. (1999). Does tape-luring of migrating Eurasian reed-warblers increase number of recruits or capture probability? *Auk*, **116**, 1047-1053.
- Scheiber, I. B. R. (2001). Song influences female choice in the house wren. *Adv. Ethol.*, **36**, 258.
- Scheich, H. (1990). Representational geometries of telencephalic auditory maps in birds and mammals. In *The Neocortex* (B. L. Finlay, ed.). Plenum Press; New York, pp. 119-136.
- Schekkerman, H. (1999). Sex bias and seasonal patterns in tape-lured samples of migrating skylarks *Alauda arvensis*. *Ringing & Migration*, **19**, 299-305.
- Schimmel, K. L. & Wasserman, F. E. (1994). Individual and species preference in two passerine birds: Auditory and visual cues. *Auk*, **111**, 634-642.
- Schleuss, F. & Hultsch, H. (1998). Vocal ontogeny and the role of song rehearsal in nightingales. *Ostrich*, **69**, 267.
- Schleuss, F. & Hultsch, H. (2001). The development of discontinuous singing in nightingales: Is it based on instruction? *Adv. Ethol.*, **36**, 259.
- Schlinger, B. A. (1994). Estrogens to song: picograms to sonograms. *Horm. Behav.*, **28**, 191-198.
- Schlinger, B. A. & Arnold, A. P. (1992). Plasma sex steroids and tissue aromatization in hatchling zebra finches: implications for the sexual differentiation of singing behavior. *Endocrinol.*, **130**, 289-299.
- Schlinger, B. A. & Arnold, A. P. (1993). Estrogen synthesis in vivo in the adult zebra finch: additional evidence that circulating estrogens can originate in brain. *Endocrinology*, **133**, 2610-2616.
- Schlinger, B. A. (1994). Estrogens and song: Products of the songbird brain. *Bioscience*, **44**, 605-612.
- Schlinger, B. A. (1997). Sex steroids and their actions on the birdsong system. *J. Neurobiol.*, **33**, 619-631.
- Schmidt, V., Schaefer, H. M. & Leisler, B. (1999). Song behaviour and range use in the polygamous aquatic warbler *Acrocephalus paludicola*. *Acta Ornithologica*, **34**, 209-213.
- Schmidt, M. F. & Konishi, M. (1998). Gating of auditory responses in the vocal control system of awake songbirds. *Nature Neurosci.*, **1**, 513-518.
- Schoen, R. (1989). *Dialects, individuality and song learning in the yellowhammer (Emberiza citrinella L.)*. Dissertation. University of Vienna.
- Schottler, B. (1995). Songs of blue tits *Parus caeruleus* palmensis from La Palma (Canary Islands) - a test of hypotheses. *Bioacoustics*, **6**, 135-152.
- Schottler, B. (1993). *The vocalizations of the blue tit (Parus caeruleus) on Canary Islands: Variation, geographical differentiation and history of spreading*. Dissertation, University of Mainz. Hartung Gorre Verlag; Konstanz (German).
- Scott, L. L., Nordeen, E. J. & Nordeen, K. W. (2000). The relationship between rates of Hvc neuron addition and vocal plasticity in adult songbirds. *J. Neurobiol.*, **43**, 79-88.
- Scott, L. L., Nordeen, E. J. & Nordeen, K. W. (2001). NR2B mRNA expression declines in HVC and RA during

- avian song learning. *Soc. Neurosci. Abstr.*, **27**, 1425.
- Searcy, W. A. (1990). Species recognition of song by female red-winged blackbirds. *Anim. Behav.*, **40**, 1119-1127.
- Searcy, W. A., Nowicki, S. & Hughes, M. (1997). The response of male and female song sparrows to geographic variation in song. *Condor*, **99**, 651-657.
- Searcy, W. A. & Yasukawa, K. (1996). Song and female choice. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 454-473.
- Searcy, W. A., Coffman, S. & Raikow, D. F. (1994). Habituation, recovery and the similarity of song types within repertoires in red-winged blackbirds (*Agelaius phoeniceus*) (Aves, Emberizidae). *Ethology*, **98**, 38-49.
- Searcy, W. A. (1988). Song development from evolutionary and ecological perspectives. *Behav. Brain Sci.*, **11**, 647-648.
- Searcy, W. A. (1996). Sound-pressure levels and song preferences in female red-winged blackbirds (*Agelaius phoeniceus*) (Aves, Emberizidae). *Ethology*, **102**, 187-196.
- Searcy, W. A. (1988). Dual intersexual and intrasexual functions of song in red-winged blackbirds. *Proc. XIX Int. Congr. Ornithol.*, 1373-1381.
- Searcy, W. A. (1992). Measuring responses of female birds to male song. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 175-189.
- Searcy, W. A. & Capp, M. S. (1997). Estradiol dosage and the solicitation display assay in red-winged blackbirds. *Condor*, **99**, 826-828.
- Searcy, W. A., Podos, J., Peters, S. & Nowicki, S. (1995). Discrimination of song types and variants in song sparrows. *Anim. Behav.*, **49**, 1219-1226.
- Searcy, W. A., Nowicki, S. & Peters, S. (1999). Song types as fundamental units in vocal repertoires. *Anim. Behav.*, **58**, 37-44.
- Searcy, W. A. & Nowicki, S. (1999). Functions of song variation in song sparrows. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 577-595.
- Searcy, W. A. & Nowicki, S. (2000). Male-male competition and female choice in the evolution of vocal signalling. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, pp. 301-315.
- Searcy, W. A., Nowicki, S. & Hogan, C. (2000). Song type variants and aggressive context. *Behav. Ecol. Sociobiol.*, **48**, 358-363.
- Searcy, W. A., Nowicki, S., Hughes, M. & Peters, S. (2002). Geographic song discrimination in relation to dispersal distances in song sparrows. *Am. Natur.*, **159**, 221-230.
- Secondi, J., Faivre, B. & Kreuzer, M. (1999). Maintenance of male reaction to congeneric song in the *Hippolais warbler* hybrid zone. *Behav. Process.*, **46**, 151-158.
- Sedgwick, J. A. (2001). Geographic variation in the song of willow flycatchers: Differentiation between *Empidonax trailli adustus* and *E. t. extimus*. *Auk*, **118**, 366-379.
- Seibt, U. & Wickler, W. (2000). 'Sympathetic song': the silent and the overt vocal repertoire, exemplified with a duetting pair of the African slate-coloured boubou, *Laniarius funebris*. *Ethology*, **106**, 795-809.
- Sellix, M. T. & Johnson, F. (1999). Reorganization of a motor cortical region during song learning in the zebra finch. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Sen, K., Theunissen, F. E. & Doupe, A. J. (2001). Feature analysis of natural sounds in the songbird auditory forebrain. *J. Neurophysiol.*, **86**, 1445-1458.
- Severinghaus, L. L. (2000). Territoriality and the significance of calling in the Lanyu scops owl *Otus elegans botolensis*. *Ibis*, **142**, 297-304.
- Shackleton, S. A. (1991). *The singing behaviour of the black-capped chickadee (Parus atricapillus)*. Master's Thesis, Queen's University; Kingston, Ontario.
- Shackleton, S. A. & Ratcliffe, L. (1994). Matched counter-singing signals and escalation of aggression in black-capped chickadees *Parus atricapillus*. *J. Ornithol.*, **135** (Sonderheft), 168.
- Shackleton, S. A. & Ratcliffe, L. (1993). Development of song in hand-reared black-capped chickadees. *Wilson Bull.*, **105**, 637-644.
- Shackleton, S. A. & Ratcliffe, L. (1994). Matched counter-singing signals escalation of aggression in black-capped chickadees (*Parus atricapillus*). *Ethology*, **97**, 310-316.
- Shaevitz, S. S. & Theunissen, F. E. (2001). Functional connectivity between field L and Hvc in the male zebra finch. *Soc. Neurosci. Abstr.*, **27**, 1921.
- Shanahan, D. (1992). Notes on calls of breeding Connecticut warblers. *Ont. Birds*, **10**, 115-116.
- Sharman, M. Y., Robertson, R. J. & Ratcliffe, L. M. (1994). Vocalizations of the tree swallow (*Tachycineta*

- bicolor*) during prelaying period: A structural and contextual analysis. *Am. Midl. Nat.*, **132**, 264-274.
- Shea, S. D., Rauske, P. L. & Margoliash, D. (2001). Identification of HVc projection neurons in extracellular records by antidromic stimulation. *Soc. Neurosci. Abstr.*, **27**, 842.
- Shea, S. D. & Margoliash, D. (1999). Multiple neuromodulators may gate auditory responses in the song motor system. *Soc. Neurosci. Abstr.*, **25**, 624.
- Sheldon, B. C. (1994). Song rate and fertility in the chaffinch. *Anim. Behav.*, **47**, 986-987.
- Shy, E. & Morton, E. S. (1986). Adaptation of amplitude structure of songs to propagation in field habitat in song sparrows. *Z. Tierpsychol.*, **72**, 177-184.
- Silva G., H. G. de (1997). Comparative analysis of the vocalizations of *Hylorchilus* wrens. *Condor*, **99**, 981-984.
- Silva, M. L. da, Piqueira, J. R. C. & Vielliard, J. M. E. (2000). Using Shannon entropy on measuring the individual variability in the rufous-bellied thrush *Turdus rufiventris* vocal communication. *J. Theor. Biol.*, **207**, 57-64.
- Silverin, B., Baillien, M., Foidart, A. & Balthazart, J. (2000). Distribution of aromatase activity in the brain and peripheral tissues of passerine and nonpasserine avian species. *Gen. Comp. Endocrinol.*, **117**, 34-53.
- Simpson, H. B. & Vicario, D. S. (1992). Young male songbirds imitate the male typical vocalizations of singing mothers. *Soc. Neurosci. Abstr.*, **18**, 529.
- Simpson, H. B. & Vicario, D. S. (1996). Male zebra finches can learn male-typical vocalizations from hormone-treated female tutors. *Anim. Behav.*, **52**, 1119-1127.
- Singh, T. D., Basham, M. E., Nordeen, E. J. & Nordeen, K. W. (2000). Early sensory and hormonal experience modulate age-related changes in NR2B mRNA within a forebrain region controlling avian vocal learning. *J. Neurobiol.*, **44**, 82-94.
- Singh, T., Heinrich, J., Wissman, A., Brenowitz, E., Nordeen, E. & Nordeen, K. (2001). Seasonal variation in NMDA receptor subunit mRNA in adult canary IMAN. *Soc. Neurosci. Abstr.*, **27**, 1424.
- Skiba, R. (2000). Possible 'rain call' selection in the chaffinch (*Fringilla coelebs*) by noise intensity - an investigation of a hypothesis. *J. Ornithol.*, **141**, 160-167 (German).
- Slabbekoorn, H. & Smith, T. B. (2002). Bird song, ecology and speciation. *Phil. Trans. Roy. Soc. Lond. B.*, **357**, 493-503.
- Slabbekoorn, H. & Smith, T. B. (2000). Does bill size polymorphism affect courtship song characteristics in the African finch *Pyrenestes ostrinus*? *Biol. J. Linn. Soc.*, **71**, 737-753.
- Slagsvold, T., Dale, S. & Saetre, G.-P. (1994). Dawn singing in the great tit (*Parus major*): Mate attraction, mate guarding, or territorial defence? *Behaviour*, **131**, 115-138.
- Slagsvold, T. (1996). Dawn and dusk singing of male American robins in relation to female behavior. *Wilson Bull.*, **108**, 507-515.
- Slater, P. J. B. & Jones, A. E. (1995). The timing of song and distance call learning in zebra finches. *Anim. Behav.*, **49**, 548-550.
- Slater, P. J. B. (1995). Social influences on song learning in zebra finches. *Bioacoustics*, **6**, 217.
- Slater, P. J. (1994). Variation in the calls of migratory and sedentary subspecies of silvereye. *Corella*, **18**, 14-20.
- Slater, P. J. B., Jones, A. & ten Cate, C. (1993). Can lack of experience delay the end of the sensitive phase for song learning? *Neth. J. Zool.*, **43**, 80-90.
- Slater, P. J. B., Richards, C. & Mann, I. (1991). Song learning in zebra finches exposed to a series of tutors during the sensitive phase. *Ethology*, **88**, 163-171.
- Slater, P. J. (1993). The relationship between individual variation in song and ecology in the capricorn silvereye. *Emu*, **93**, 145-155.
- Slater, P. J. B. (1997). Vocal learning in songbirds: origin and maintenance. *Adv. Ethol.*, **32**, 31.
- Slater, P. J. B. & Jones, A. E. (1997). Lessons in bird song. *Biologist*, **44**, 301-303.
- Slater, P. J. B. & Mann, N. I. (1991). Early experience and song learning in zebra finches *Taeniopygia guttata*. *Acta XX Congr. Int. Ornithol.*, 1074-1080.
- Slater, P. J. B. & Jones, A. E. (1998). Practice and song development in zebra finches. *Behaviour*, **135**, 1125-1136.
- Slater, P. J. B. (2001). Is innovation in bird song adaptive? *Adv. Ethol.*, **36**, 38.
- Slater, P. J. B., Lachlan, R. F. & Riebel, K. (2000). The significance of song learning in signal development: The curious case of the chaffinch. In *Animal Signals: Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen & G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, Norway, pp. 341-352.
- Smith, G. T., Brenowitz, E. A., Beecher, M. D. & Wingfield, J. C. (1997). Seasonal changes in testosterone, neural attributes of song control nuclei, and song structure in wild songbirds. *J. Neurosci.*, **17**, 6001-6010.
- Smith, G. T., Brenowitz, E. A., Wingfield, J. C. & Baptista, L. F. (1995). Seasonal changes in song nuclei and song behavior in Gambel's white-crowned sparrows. *J. Neurobiol.*, **28**, 114-125.
- Smith, G. T., Brenowitz, E. A., Beecher, M. D., Campbell, S. E. & Wingfield, J. C. (1995). Hormonal and

- behavioral correlates of seasonal plasticity in the song nuclei of a wild songbird. *Soc. Neurosci. Abstr.*, **21**, 962.
- Smith, W. J. (1996). Using interactive playback to study how songs and singing contribute to communication about behavior. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 377-397.
- Smith, J. I. & Yu, H.-T. (1990). The association between vocal characteristics and habitat type in Taiwanese passerines. *Zool. Sci.*, **9**, 659-664.
- Smith, W. J. & Smith, A. M. (1996). Playback interactions with great crested flycatchers, *Myiarchus crinitus* (Aves, Tyrannidae). *Ethology*, **102**, 724-735.
- Smith, W. J. & Smith, A. M. (1996). Vocal signalling of the great crested flycatcher, *Myiarchus crinitus* (Aves, Tyrannidae). *Ethology*, **102**, 705-723.
- Smith, W. J. & Smith, A. M. (1996). Information about behaviour provided by Louisiana waterthrush, *Seiurus motacilla* (Parulinae), songs. *Anim. Behav.*, **51**, 785-799.
- Smith, G. T., Brenowitz, E. A. & Wingfield, J. C. (1997). Seasonal changes in the size of the avian song control nucleus HVC defined by multiple histological markers. *J. Comp. Neurol.*, **381**, 253-261.
- Smith, V. A., King, A. P. & West, M. J. (2000). A role of her own: female cowbirds, *Molothrus ater*, influence the development and outcome of song learning. *Anim. Behav.*, **60**, 599-609.
- Smith, V. A., King, A. P. & West, M. J. (2002). The context of social learning: association patterns in a captive flock of brown-headed cowbirds. *Anim. Behav.*, **63**, 23-35.
- Smith, G. T., Brenowitz, E. A. & Wingfield, J. C. (1997). Roles of photoperiod and testosterone in seasonal plasticity of the avian song control system. *J. Neurobiol.*, **32**, 426-442.
- Soderstrom, K. (2000). CB1 cannabinoid receptor expression in brain regions associated with zebra finch song control. *Brain Res.*, **857**, 151-157.
- Soderstrom, K. & Johnson, F. (2001). Zebra finch vocal development is impaired by daily cannabinoid exposure. *Soc. Neurosci. Abstr.*, **27**, 1427.
- Sogge, M. K. (1997). Primary song by a juvenile willow flycatcher. *J. Field Ornithol.*, **68**, 630-631.
- Soha, J. A., Shimizu, T. & Doupe, A. J. (1996). Development of the catecholaminergic innervation of the song system of the male zebra finch. *J. Neurobiol.*, **29**, 473-489.
- Soha, J. A. & Marler, P. (2001). Cues for early discrimination of conspecific song in the white-crowned sparrow (*Zonotrichia leucophrys*). *Ethology*, **107**, 813-826.
- Soha, J. A. & Marler, P. (2001). Vocal syntax development in the white-crowned sparrow (*Zonotrichia leucophrys*). *J. Comp. Psychol.*, **115**, 172-180.
- Soha, J. A. & Marler, P. (2000). A species-specific acoustic cue for selective song learning in the white-crowned sparrow. *Anim. Behav.*, **60**, 297-306.
- Sohrabji, F., Nordeen, E. J. & Nordeen, K. W. (1993). Characterization of neurons born and incorporated into a vocal control nucleus during avian song learning. *Brain Res.*, **620**, 335-338.
- Solis, M. M. & Doupe, A. J. (1999). Contributions of both tutor and bird's own song experience to neural selectivity in the songbird anterior forebrain. *J. Neurosci.*, **19**, 4559-4584.
- Solis, M. M. & Doupe, A. J. (1997). Anterior forebrain neurons develop selectivity by an intermediate stage of birdsong learning. *J. Neurosci.*, **17**, 6447-6462.
- Solis, M. M. (2000). Adult neurogenesis in songbirds: A tale of two neurons. *Neuron*, **25**, 256.
- Solis, M. M. & Doupe, A. J. (2000). Compromised neural selectivity for song in birds with impaired sensorimotor learning. *Neuron*, **25**, 109-122.
- Solis, M. M., Brainard, M. S., Hessler, N. A. & Doupe, A. J. (2000). Song selectivity and sensorimotor signals in vocal learning and production. *Proc. Natl. Acad. Sci. USA*, **97**, 11836-11842.
- Soma, K. K., Hartman, V. N., Wingfield, J. C. & Brenowitz, E. A. (1999). Seasonal changes in androgen receptor immunoreactivity in the song nucleus HVC of a wild bird. *J. Comp. Neurol.*, **409**, 224-236.
- Soma, K. K., Wissman, A. M., Brenowitz, E. A. & Wingfield, J. C. (2002). Dehydroepiandrosterone (DHEA) increases territorial song and the size of an associated brain region in a male songbird. *Horm. Behav.*, **41**, 203-212.
- Sommer, C., Mundry, R. & Ostreher, R. (2001). Why do cooperatively breeding Arabian babblers utter far-ranging calls at their nest? *Adv. Ethol.*, **36**, 264.
- Sorjonen, J. (1986). Mixed singing and interspecific territoriality - consequences of secondary contact of two ecologically and morphologically similar nightingale species in Europe. *Ornis Scand.*, **17**, 53-67.
- Sorjonen, J. (1986). *Singing strategies in Northern European passerines*. Univ. Joensuu Public. Sc., **9**, 1-21.
- Sorjonen, J. & Merila, J. (2000). Response of male bluethroats *Luscinia svecica* to song playback: Evidence of territorial function of song and song flights. *Ornis Fennica*, **77**, 43-47.
- Sorjonen, J. (2001). Long-term constancy of two rain-call dialects of the chaffinch *Fringilla coelebs* in Finnish and Russian Karelia: a consequence of site-fidelity? *Ornis Fennica*, **78**, 73-82.

- Spector, D. A. (1992). Wood-warbler song systems: a review of paruline singing behaviors. *Curr. Ornithol.*, **9**, 199-238.
- Spiro, J. E. & Mooney, R. (1999). An intracellular study of auditory responses in the zebra finch song nucleus RA. *Soc. Neurosci. Abstr.*, **25**, 624.
- Spiro, J. E., Dalva, M. B. & Mooney, R. (1999). Long-range inhibition within the zebra finch song nucleus RA can coordinate the firing of multiple projection neurons. *J. Neurophysiol.*, **81**, 3007-3020.
- Staicer, C. A. (1996). Acoustical features of song categories of the Adelaide's warbler (*Dendroica adelaidae*). *Auk*, **113**, 771-783.
- Staicer, C. A., Spector, D. A. & Horn, A. G. (1996). The dawn chorus and other diel patterns in acoustic signaling. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 426-453.
- Staicer, C. A. (1996). Honest advertisement of pairing status: evidence from a tropical resident wood-warbler. *Anim. Behav.*, **51**, 375-390.
- Staicer, C. A. (1991). *The role of male song in the socioecology of the tropical resident Adelaide's warbler (Dendroica adelaidae)*. Ph.D. thesis, University of Massachusetts.
- Stark, L. L. & Perkel, D. J. (1999). Two-stage, input-specific synaptic maturation in a nucleus essential for vocal production in the zebra finch. *J. Neurosci.*, **19**, 9107-9116.
- Stark, L. L. & Perkel, D. J. (1999). Two-stage, input specific synaptic maturation in a nucleus essential for vocal production in the zebra finch. *J. Neurosci.*, **19**, 9107-9116.
- Steidel, G. (1996). Dialect systems of micro-populations in scarlet rosefinches *Carpodacus erythrinus*. *Bioacoustics*, **6**, 308.
- Stelte, W. & Sossinka, R. (1996). Significance of perches in the marsh warbler (*Acrocephalus palustris*) in its breeding habitat. *Vogelwarte*, **38**, 188-193 (German).
- Steve, E., Messenger, E. & Yasukawa, K. (1999). Do red-winged blackbird parents and their nestlings recognize each other? *J. Field Ornithol.*, **70**, 297-309.
- Stoddard, P. K. (1996). Vocal recognition of neighbors by territorial passerines. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 356-376.
- Stoddard, P. K., Beecher, M. D., Loesche, P. & Campbell, S. E. (1992). Memory does not constrain individual recognition in a bird with song repertoires. *Behaviour*, **122**, 274-287.
- Stoddard, P. K. (1989). *Song repertoire use and perception by male song sparrows (Melospiza melodia) in the Puget Sound region*. Ph.D. dissertation. University of Washington.
- Stoehr, A. M. & Hill, G. E. (2000). Testosterone and the allocation of reproductive effort in male house finches (*Carpodacus mexicanus*). *Behav. Ecol. Sociobiol.*, **48**, 407-411.
- Stranek, R. J. (1999). A vocalization of the pale-breasted spintail, *Synallaxis albescens* (Aves, Furnariidae) is similar to the mechanical warning sound of the rattlesnake, *Crotalus durissus terrificus* (Serpentes, Crotalidae). *Rev. Mus. Argent. Cienc. Natur. Nueva Serie*, **1**, 115-119.
- Streidter, G. (1994). The vocal control pathways in budgerigars differ from those in songbirds. *J. Comp. Neurol.*, **343**, 35-56.
- Stripling, R. M., Milewski, L., Kruse, A. A. & Clayton, D. F. (2001). Rapidly learned song discrimination without behavioral reinforcement in adult male zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Stripling, R., Kruse, A. A. & Clayton, D. F. (2001). Development of song responses in the zebra finch caudomedial neostriatum: Role of genomic and electrophysiological activities. *J. Neurobiol.*, **48**, 163-180.
- Strote, J. & Nowicki, S. (1996). Responses to songs with altered tonal quality by adult song sparrows (*Melospiza melodia*). *Behaviour*, **133**, 161-172.
- Sturdy, C. B., Phillmore, L. S., Price, J. L. & Weisman, R. G. (1999). Song note discriminations in zebra finches (*Taeniopygia guttata*): Categories and pseudocategories. *J. Comp. Psychol.*, **113**, 204-212.
- Sturdy, C. B., Phillmore, L. S. & Weisman, R. G. (1999). Note types, harmonic structure, and note order in the songs of zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **113**, 194-203.
- Sturdy, C. B., Phillmore, L. S., Sartor, J. J. & Weisman, R. G. (2001). Reduced social contact causes auditory perceptual deficits in zebra finches, *Taeniopygia guttata*. *Anim. Behav.*, **62**, 1207-1218.
- Sturdy, C. M., Wild, J. M. & Mooney, R. (2000). Intrinsic electrophysiological properties and synaptic connections of zebra finch vocal motor neurons. *Soc. Neurosci. Abstr.*, **26**.
- Sturdy, C. B., Phillmore, L. S. & Weisman, R. G. (2000). Call-note discriminations in black-capped chickadees (*Poecile atricapillus*). *J. Comp. Psychol.*, **114**, 357-364.
- Sundberg, K. A., Newman, S. W., Buki, J. & DeVoogd, T. J. (2001). Female songbirds that differ in song experience or quality of song discrimination also differ in the IEG response to hearing song. *Soc. Neurosci. Abstr.*, **27**, 843.

- Suthers, R. A. (1997). Peripheral control and lateralization of birdsong. *J. Neurobiol.*, **33**, 632-652.
- Suthers, R. A. & Goller, F. (1997). Motor correlates of vocal diversity in song birds. In *Current Ornithology*, Vol. 14 (V. Nolan, E. Ketterson and C. Thompson, eds.). Plenum Press; New York, pp. 235-288.
- Suthers, R. A., Goller, F. & Pytte, C. (1999). The neuromuscular control of birdsong. *Phil. Trans. Roy. Soc., B.*, **354**, 927-939.
- Suthers, R. A., Goller, F. & Hartley, R. S. (1994). Motor dynamics of song production by mimic thrushes. *J. Neurobiol.*, **25**, 917-936.
- Suthers, R. A. (1994). Variable asymmetry and resonance in the avian vocal tract: a structural basis for individually distinct vocalizations. *J. Comp. Physiol., A.*, **175**, 457-466.
- Suthers, R. A., Goller, F. & Hartley, R. S. (1996). Motor stereotypy and diversity in songs of mimic thrushes. *J. Neurobiol.*, **30**, 213-245.
- Suthers, R. A. (1992). Lateralization of sound production and motor action on the left and right sides of the syrinx during bird song. *Proc. Int. Congr. Acoustics, 14, Beijing, Vol. II-5*, pp. 1-2.
- Suthers, R. A. (1999). The motor basis of vocal performance in songbirds. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 37-62.
- Suthers, R. A. (2001). Peripheral vocal mechanisms in birds: Are songbirds special? *Neth. J. Zool.*, **51**, 217-242.
- Suthers, R. A. (2001). Peripheral vocal mechanisms in birds: Are songbirds special? *J. Morphol.*, **248**, 289-290.
- Suthers, R. A. & Wild, J. M. (2000). Real-time modulation of the syringeal motor program in response to externally imposed respiratory perturbations in adult songbirds. *Soc. Neurosci. Abstr.*, **26**.
- Suthers, R. A., Goller, F. & Wild, J. M. (2002). Somatosensory feedback modulates the respiratory motor program of crystallized birdsong. *Proc. Natl. Acad. Sci. USA*, **99**, 5680-5685.
- Sutter, M. L. & Margoliash, D. (1994). Global synchronous response to autogenous song in zebra finch HVC. *J. Neurophysiol.*, **72**, 2105-2123.
- Szekely, T., Catchpole, C. K., DeVoogd, A., Marchl, Z. & DeVoogd, T. (1996). Evolutionary changes in a song control area of the brain (HVC) are associated with evolutionary changes in song repertoire among European warblers (Sylviidae). *Proc. R. Soc. Lond., Ser. B.*, **263**, 607-610.
- Tamura, M. & Ueda, K. (2000). Female song in the Siberian blue robin *Luscinia cyane*. *J. Yamashina Inst. Ornithol.*, **32**, 86-90.
- Tavares, J., Langemann, U. & McGregor, P. K. (1997). Responses of great tits, *Parus major*, to alternating vs overlapping interactive playback: effects of song matching. *Adv. Ethol.*, **32**, 121.
- Tchernichovski, O., Schwabl, H. & Nottebohm, F. (1998). Context determines the sex appeal of male zebra finch song. *Anim. Behav.*, **55**, 1003-1010.
- Tchernichovski, O. & Nottebohm, F. (1998). Social inhibition of song imitation among sibling male zebra finches. *Proc. Natl. Acad. Sci. USA*, **95**, 8951-8956.
- Tchernichovski, O. & Nottebohm, F. (2001). Dynamics of the vocal imitation process: how a zebra finch learns its song. *Science*, **291**, 2564-2569.
- Tchernichovski, O., Lints, T., Mitra, P. P. & Nottebohm, F. (1999). Vocal imitation in zebra finches is inversely related to model abundance. *Proc. Natl. Acad. Sci. USA*, **96**, 12901-12904.
- Tchernichovski, O., Lintz, T. & Nottebohm, F. (1999). Frequent exposure to a song model induces selective imitation by zebra finches. *Soc. Neurosci. Abstr.*, **25**, 1366.
- Tchernichovski, O., Mitra, P. P., Lints, T. & Nottebohm, F. (2000). The process of vocal imitation. *Soc. Neurosci. Abstr.*, **26**.
- Tchernichovski, O., Nottebohm, F., Ho, C. E., Pesaran, B. & Mitra, P. P. (2000). A procedure for an automated measurement of song similarity. *Anim. Behav.*, **59**, 1167-1176.
- Tchernichovski, O., Schmidt, M. & Mitra, P. P. (2001). Combined acoustic and neural measurements of the song imitation process. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Tennhardt, T. & Fischer, S. (1993). New cases of mixed singing *Phylloscopus* warblers in Berlin. *Berliner Orn. Ber.*, **3**, 31-37 (German).
- Terry, A. M. R., McGregor, P. K. & Peake, T. M. (2001). A comparison of some techniques used to assess vocal individuality. *Bioacoustics*, **11**, 169-188.
- Terry, A. & McGregor, P. (2001). Finding faces in the crowd: Neural networks used to count and monitor populations of calling birds. *Adv. Ethol.*, **36**, 274.
- Teti, J., Borland, M., Lopez, A. & McLaren, G. (2001). Digital recording and analysis of female redwing blackbird (*Agelaius phoeniceus*) vocalizations collected in the field. *Ohio J. Sci.*, **101**, A.
- Thielcke, G. (1986). Constant proportions of mixed singers in treecreeper populations (*Certhia familiaris*). *Z. Tierpsychol.*, **72**, 154-164.
- Thoenen, W. & Fujimaki, Y. (1995). Song divergence in the Japanese willow tit. *Res. Bull. Obihiro Univ.*, **19**, 171-177.
- Thoenen, W. (1996). On the geographic variation in the song of *Parus montanus*. *Orn. Beob.*, **93**, 1-34

(German).

- Thomas, R. J. (1999). The effect of variability in the food supply on the daily singing routines of European robins: a test of a stochastic dynamic programming model. *Anim. Behav.*, **57**, 365-369.
- Thomas, R. J. (1999). Two tests of a stochastic dynamic programming model of daily singing routines in birds. *Anim. Behav.*, **57**, 277-284.
- Thomas, R. J. (1997). The functions of daily singing routines in birds. D.Phil. thesis. University of Sussex.
- Thomas, R. J. (2002). The costs of singing in nightingales. *Anim. Behav.*, **63**, 959-966.
- Thomas, R. J. & Cuthill, I. C. (2002). Body mass regulation and the daily singing routines of European robins. *Anim. Behav.*, **63**, 285-295.
- Thomas, R. J., Szekely, T., Cuthill, I. C., Harper, D. G. C., Newson, S. E., Frayling, T. D. & Wallis, P. D. (2002). Eye size in birds and the timing of song at dawn. *Proc. Roy. Soc. Lond. B.*, **269**, 831-837.
- Thompson, A. D. Jr. & Baker, M. C. (1993). Song dialect recognition by male white-crowned sparrows: effects of manipulated song components. *Condor*, **95**, 414-421.
- Thompson, N. S., LeDoux, K. & Moody, K. (1994). A system for describing bird song units. *Bioacoustics*, **5**, 267-279.
- Thompson, N. S., Abbey, E., Wapner, J., Logan, C., Merritt, P. G. & Pooth, A. (2000). Variation in the bout structure of northern mockingbird (*Mimus polyglottus*) singing. *Bird Behavior*, **13**, 93-98.
- Thompson, B. E., Freking, F., Pho, V., Schlinger, B. A. & Cherry, J. A. (2000). Cyclic AMP phosphodiesterases in the zebra finch: distribution, cloning and characterization of a PDE4B homolog. *Mol. Brain Res.*, **83**, 94-106.
- Titus, R. C., Ketterson, E. D. & Nolan, V. (1997). High testosterone prior to song crystallization inhibits singing behavior in captive yearling dark-eyed juncos (*Junco hyemalis*). *Horm. Behav.*, **32**, 133-140.
- Titus, R. C. (1998). Short-range and long-range songs: Use of two acoustically distinct song classes by dark-eyed juncos. *Auk*, **115**, 386-393.
- Titus, R. C., Chandler, C. R., Ketterson, E. D. & Nolan Jr., V. (1997). Song rates of dark-eyed juncos do not increase when females are fertile. *Behav. Ecol. Sociobiol.*, **41**, 165-170.
- Tobias, J. & Seddon, N. (2000). Territoriality as a paternity guard in the European robin, *Erithacus rubecula*. *Anim. Behav.*, **60**, 165-173.
- Todt, D. & Hultsch, H. (1996). Acquisition and performance of song repertoires: Ways of coping with diversity and versatility. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 79-96.
- Todt, D. & Hultsch, H. (1998). How songbirds deal with large amounts of serial information: retrieval rules suggest a hierarchical song memory. *Biol. Cybernet.*, **79**, 487-500.
- Todt, D. & Boehner, J. (1994). Former experience can modify social selectivity during song learning in the nightingale (*Luscinia megarhynchos*). *Ethology*, **97**, 169-176.
- Todt, D. & Hultsch, H. (1998). Hierarchical learning, development and representation of song. In *Animal Cognition in Nature* (R. P. Balda, I. M. Pepperberg and A. C. Kamil, eds.). Academic Press; San Diego, pp. 275-303.
- Todt, D., Cirillo, J., Geberzahn, N. & Schleuss, F. (2001). The role of hierarchy levels in vocal imitations of songbirds. *Cybernetics and Systems*, **32**, 257-283.
- Todt, D. (2001). Studies of STM properties in animals may help us better understand the nature of our own storage limitations: The case of birdsong acquisition. *Behav. Brain Sci.*, **24**, 149-150.
- Tracy, T. T. & Baker, M. C. (1999). Geographic variation in syllables of house finch songs. *Auk*, **116**, 666-676.
- Trainer, J. M. (1989). Cultural evolution in song dialects of yellow-rumped caciques in Panama. *Ethology*, **80**, 190-204.
- Trainer, J. M. & McDonald, D. B. (1995). Singing performance, frequency matching and courtship success of long-tailed manakins (*Chiroxiphia linearis*). *Behav. Ecol. Sociobiol.*, **37**, 249-254.
- Trainer, J. M. & Peltz, B. S. (1996). Song repertoire of the bobolink: a reassessment. *Ethology*, **102**, 50-62.
- Trainer, J. M. & McDonald, D. B. (1993). Vocal repertoire of the long-tailed manakin and its relation to male-male cooperation. *Condor*, **95**, 769-781.
- Trainer, J. M., McDonald, D. B. & Learn, W. A. (2002). The development of coordinated singing in cooperatively displaying long-tailed manakins. *Behav. Ecol.*, **13**, 65-69.
- Tramer, E. J. (1994). Feeder access: deceptive use of alarm calls by a white-breasted nuthatch. *Wilson Bull.*, **106**, 573.
- Tramontin, A. D. & Brenowitz, E. A. (1999). A field study of seasonal neuronal incorporation into the song control system of a songbird that lacks adult song learning. *J. Neurobiol.*, **40**, 316-326.
- Tramontin, A. D., Wingfield, J. C. & Brenowitz, E. A. (1999). Contributions of social cues and photoperiod to seasonal plasticity in the adult avian song control system. *J. Neurosci.*, **19**, 476-483.
- Tramontin, A. D. & Brenowitz, E. A. (2000). Seasonal plasticity in the adult brain. *Trends Neurosci.*, **23**, 251-

- Tramontin, A. D., Hartman, V. N. & Brenowitz, E. A. (1999). Rapid and sequential growth of adult avian song nuclei in response to seasonal cues. *Soc. Neurosci. Abstr.*, **25**, 864.
- Tramontin, A. D., Hartman, V. N. & Brenowitz, E. A. (2000). Breeding conditions induce rapid and sequential growth in adult avian song control circuits: A model of seasonal plasticity in the brain. *J. Neurosci.*, **20**, 854-861.
- Tramontin, A. D., Perfito, N., Wingfield, J. C. & Brenowitz, E. A. (2001). Seasonal growth of song control nuclei precedes seasonal reproductive development in wild adult song sparrows. *Gen. Comp. Endocrinol.*, **122**, 1-9.
- Tretzel, E. (1997). Learning of nonspecific sounds and musicality of birds: imitation and variation of a music scale by Shamas *Copsychus malabaricus*. *J. Orn.*, **138**, 505-530 (German).
- Tretzel, E. (1998). Learning of nonspecific sounds and "musicality" of birds: imitation and variation of a music scale by shamas *Copsychus malabaricus*. *J. Orn.*, **138**, 505-530 (German).
- Trouilhet, J.-F., Nadaud, S., Vincent, F. & Ricci, J.-C. (1998). Presentation of a methodology for classification of biological signals: Application to the recognition of thrush calls. *Bull. Soc. Zool. France*, **123**, 279-292 (French).
- Troyer, T. & Doupe, A. J. (2000). An associational model of birdsong sensorimotor learning. II. Temporal hierarchies and the learning of song sequence. *J. Neurophysiol.*, **84**, 1224-1239.
- Troyer, T. W. & Bottjer, S. W. (2001). Birdsong: models and mechanisms. *Curr. Opin. Neurobiol.*, **11**, 721-726.
- Troyer, T. & Doupe, A. J. (2000). An associational model of birdsong sensorimotor learning. I. Efference copy and the learning of song syllables. *J. Neurophysiol.*, **84**, 1204-1223.
- Tryjanowski, P. (1997). Song sites of the buntings *Emberiza citrinella*, *E. hortulana* and *Miliaria calandra* in farmland: microhabitat differences. *Adv. Ethol.*, **32**, 174.
- Tryjanowski, P. (2000). Ground song of the skylark *Alauda arvensis*: Frequency, temporal distribution and habitat dependence. *Vogelwelt*, **121**, 49-50.
- Tryjanowski, P. & Osiejuk, T. S. (2000). Female song in birds: Moving from a temperate zone bias towards a unisexual theory of song. *Biol. Bull. Poznan*, **37**, 59-67.
- Tubaro, P. L. & Segura, E. T. (1994). Dialect differences in the song of *Zonotrichia capensis* in the Southern Pampas: A test of the acoustic adaptation hypothesis. *Condor*, **96**, 1084-1088.
- Tubaro, P. L. & Segura, E. T. (1992). A case of vocal mimicry in the rufous-collared sparrow. *Hornero*, **13**, 232-234.
- Tubaro, P. L. & Segura, E. T. (1995). Geographical, ecological and subspecific variation in the song of the rufous-browed pepper shrike (*Cyclarhis gujanensis*). *Condor*, **97**, 792-803.
- Tubaro, P. L., Segura, E. T. & Handford, P. (1993). Geographic variation in the song of the rufous-collared sparrow in eastern Argentina. *Condor*, **95**, 588-595.
- Tubaro, P. L. & Segura, E. T. (1993). A comparative analysis of perched song in the white-browed and the red-breasted blackbird. *Bioacoustics*, **4**, 287-291.
- Tulloch, M. & Roberts, F. J. (1995). Unusual song of common whitethroat. *Brit. Birds*, **88**, 425.
- Uno, H. & Maekawa, M. (1997). Song discrimination ability relates to the bird's own songs. *Neurosci. Res.*, **27-29**, S215.
- Uno, H., Maekawa, M. & Kaneko, H. (1997). Strategies for harmonic structure discrimination by zebra finches. *Behav. Brain Res.*, **89**, 225-228.
- Uno, H. & Okanoya, K. (2000). Context-dependent responses of auditory neurons in the vocal control nucleus HVC of the Bengalese finches. *Neurosci. Res. Suppl.*, **24**, S156.
- Vallet, E., Beme, I. & Kreutzer, M. (1998). Two-note syllables in canary songs elicit high levels of sexual display. *Anim. Behav.*, **55**, 291-297.
- Vallet, E. & Kreutzer, M. (1995). Female canaries are sexually responsive to special song phrases. *Anim. Behav.*, **49**, 1603-1610.
- Vallet, E., Kreutzer, M. & Gahr, M. (1996). Testosterone induces sexual release quality in the song of female canaries. *Ethology*, **102**, 617-628.
- Vallet, E., Kreutzer, M., Bemé, I & Kiosseva, L. (1997). Sexy syllables in male canary songs: honest signals of motor constraints on male vocal production? *Adv. Ethol.*, **32**, 132.
- Valone, T. J. (1996). Food-associated calls as public information about patch quality. *Oikos*, **77**, 153-157.
- Vates, G. E. & Nottebohm, F. (1995). Feedback circuitry within a song learning pathway. *Proc. Natl. Acad. Sci. USA*, **92**, 5139-5143.
- Vates, G. E., Broome, B. M., Mello, C. V. & Nottebohm, F. (1996). Auditory pathways of caudal telencephalon and their relation to the song system of adult male zebra finches (*Taeniopygia guttata*). *J. Comp. Neurol.*, **366**, 613-642.
- Veerman, P. A. (1992). Vocal mimicry of larger honeyeaters by the regent honeyeater *Xanthomyza phrygia*. *Austral. Bird Watcher*, **14**, 180-189.

- Vehrencamp, S. L. (2001). Is song-type matching a conventional signal of aggressive intentions? *Proc. Roy. Soc. Lond. B.*, **268**, 1637-1642.
- Vehrencamp, S. L. (2001). Erratum: Is song-type matching a conventional signal of aggressive intentions? *Proc. Roy. Soc. Lond. B.*, **268**, 2618.
- Vehrencamp, S. L. (2000). Handicap, index, and conventional signal elements of bird song. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Publishers; Trondheim, pp. 277-300.
- Vicario, D. F., Nottebohm, F. & Chew, S. J. (1995). Physiological evidence for a selective neuronal learning process in songbird auditory forebrain. *Soc. Neurosci. Abstr.*, **21**, 959.
- Vicario, D. S. & Nottebohm, F. (1990). Organization of the zebra finch song control system. I. Representation of syringeal muscles in the hypoglossal nucleus. *J. Comp. Neurol.*, **271**, 346-354.
- Vicario, D. S. (1991). Neural mechanisms of song production in songbirds. *Curr. Opin. Neurobiol.*, **1**, 595-600.
- Vicario, D. S. (1994). Motor mechanisms relevant to auditory-vocal interactions in songbirds. *Brain Behav. Evol.*, **44**, 265-278.
- Vicario, D. S. & Simpson, H. B. (1995). Electrical stimulation in forebrain nuclei elicits learned vocal patterns in songbirds. *J. Neurophysiol.*, **73**, 2602-2607.
- Vicario, D. S. & Yohay, K. H. (1993). Song selective auditory input to a forebrain vocal control nucleus in the zebra finch. *J. Neurobiol.*, **24**, 488-505.
- Vicario, D. S. & Williams, H. (1992). Nucleus uvulaeformis contributes to the temporal pattern of vocal production in songbirds. *Soc. Neurosci. Abstr.*, **18**, 528.
- Vicario, D. S. (1993). A new brain stem pathway for vocal control in the zebra finch song system. *NeuroReport*, **4**, 983-986.
- Vicario, D. S. (2001). Long-lasting behavioral memory for individual female calls in male zebra finches. *Soc. Neurosci. Abstr.*, **27**, 843.
- Vicario, D. S. & Naqvi, N. H. (1997). Vive la difference: gender preferences in zebra finch calling behavior. *Soc. Neurosci. Abstr.*, **23**, 795.
- Vicario, D. S. & Raksin, J. N. (1999). Possible roles for GABAergic inhibition in the vocal control system of the zebra finch. *Soc. Neurosci. Abstr.*, **25**, 1368.
- Vicario, D. S. & Raksin, J. N. (2000). Possible roles for GABAergic inhibition in the vocal control system of the zebra finch. *NeuroReport*, **11**, 3631-3635.
- Vicario, D. S., Naqvi, N. H. & Raksin, J. N. (2001). Sex differences in discrimination of vocal communication signals in a songbird. *Anim. Behav.*, **61**, 805-817.
- Vicario, D. S., Naqvi, N. H. & Raksin, J. N. (2001). Behavioral discrimination of sexually dimorphic calls by male zebra finches requires an intact vocal motor pathway. *J. Neurobiol.*, **47**, 109-120.
- Vielliard, J. M. E. (1995). The use of bioacoustics for the phylogenetic study of neotropical birds. *Abstracts V Congreso de Ornitología Neotropical, Asuncion* (Sociedad de Biología del Paraguay, ed.); Asuncion, Paraguay, p. 55.
- Vielliard, J. (1995). Phylogeny of bioacoustic parameters in birds. *Bioacoustics*, **6**, 171-174.
- Vielliard, J. M. E. (1996). The current state of bioacoustical phylogeny. *Bioacoustics*, **6**, 310-311.
- Voigt, C., Gahr, M. & Kempnaers, B. (1997). Song structure and plumage coloration of the male wild canary (*Serinus canaria*) and their importance for reproductive success. *Adv. Ethol.*, **32**, 133.
- Voigt, C., Gahr, M. L. & Wickler, W. (2001). Sexual dimorphism of the song control region HVC in a duetting songbird, the white-browed sparrowweaver (*Plocepasser mahali*). *Soc. Neurosci. Abstr.*, **27**, 1709.
- Volman, S. F. & Khanna, H. (1995). Convergence of untutored song in group-reared zebra finches (*Taeniopygia guttata*). *J. Comp. Psychol.*, **109**, 211-221.
- Volman, S. F. (1993). Development of neural selectivity for birdsong during vocal learning. *J. Neurosci.*, **13**, 4737-4747.
- Vu, E., Mazurek, E. & Kuo, Y.-C. (1994). Identification of a forebrain motor programming network for the learned song of zebra finches. *J. Neurosci.*, **14**, 6924-6934.
- Vu, E. T. & Coleman, M. J. (2001). Song recovery by adult zebra finches following unilateral Uva lesion requires nucleus m-MAN. *Soc. Neurosci. Abstr.*, **27**, 1426.
- Wade, J. & Arnold, A. P. (1996). Functional testicular tissue does not masculinize development of the zebra finch song system. *Proc. Natl. Acad. Sci. USA*, **93**, 5264-5268.
- Wade, J. & Arnold, A. P. (1994). Post-hatching inhibition of aromatase activity does not alter sexual differentiation of the zebra finch song system. *Brain Res.*, **639**, 347-350.
- Wade, J. & Arnold, A. P. (1994). Presence of a testis is not sufficient for masculine differentiation of the neural song system in zebra finches. *Soc. Neurosci. Abstr.*, **18**, 230.
- Wade, J., Springer, M. L., Wingfield, J. C. & Arnold, A. P. (1996). Neither testicular androgens nor embryonic aromatase activity alters morphology of the neural song system in zebra finches. *Biol. Reprod.*, **55**, 1126-1132.

- Wade, J., Swender, D. A. & McElhinny, T. L. (1999). Sexual differentiation in the zebra finch song system parallels genetic, not gonadal, sex. *Horm. Behav.*, **36**, 141-152.
- Wade, J. (2001). Zebra finch sexual differentiation: The aromatization hypothesis revisited. *Microsc. Res. Techn.*, **54**, 354-363.
- Wade, J. & Buhlman, L. (2000). Lateralization and effects of adult androgen in a sexually dimorphic neuromuscular system controlling song in zebra finches. *J. Comp. Neurol.*, **426**, 154-164.
- Wade, J., Buhlman, L. & Swender, D. (2002). Post-hatching hormonal modulation of a sexually dimorphic neuromuscular system controlling song in zebra finches. *Brain Res.*, **929**, 191-201.
- Wade, J. (2000). TrkB-like immunoreactivity in the song system of developing zebra finches. *J. Chem. Neuroanat.*, **19**, 33-39.
- Wald, B. C., Nordeen, E. J. & Nordeen, K. W. (2001). Anatomical and ontogenetic factors producing variation in HVC neuron number in zebra finches. *Brain Res.*, **904**, 318-326.
- Wallhaeuser-Franke, E., Nixdorf-Bergweiler, B. E. & DeVoogd, T. J. (1995). Song isolation is associated with maintaining high spike frequencies on zebra finch IMAN neurons. *Neurobiol. Learn. Mem.*, **64**, 25-35.
- Wallhaeuser-Franke, E., Collins, C. E. & DeVoogd, T. J. (1995). Developmental changes in distribution of NADPH-Diaphorase-containing neurons in telencephalic nuclei of the zebra finch song system. *J. Comp. Neurol.*, **356**, 345-354.
- Wallschlaeger, D. (1994). On the song of *Sylvia curruca*, *Sylvia nana* and *Sylvia communis* in Mongolia. *Bioacoustics*, **6**, 80.
- Walters, M. J., McEwen, B. S. & Harding, C. F. (1988). Estrogen receptor levels in hypothalamic and vocal control nuclei in the male zebra finch. *Brain Res.*, **459**, 37-43.
- Wang, N., Aviram, R. & Kirn, J. R. (1999). Deafening alters neuron turnover within the telencephalic motor pathway for song control in adult zebra finches. *J. Neurosci.*, **19**, 10554-10561.
- Wang, J., Sakaguchi, H. & Sokabe, M. (1999). Sex differences in the vocal motor pathway of the zebra finch revealed by real-time optical imaging technique. *NeuroReport*, **10**, 2487-2492.
- Wang, J., Sokabe, M. & Sakaguchi, H. (2001). Functional connections between the HVC and the shelf of the zebra finch revealed by real-time optical imaging technique. *NeuroReport*, **12**, 215-221.
- Wang, N., Hurley, P. & Kirn, J. R. (2001). The longterm incorporation of vocal control neurons decreases with age in the adult zebra finch. *Soc. Neurosci. Abstr.*, **27**, 1710.
- Ward, B., Nordeen, E. & Nordeen, K. (1998). Individual variation in neuron number predicts differences in the propensity for avian vocal imitation. *Proc. Natl. Acad. Sci. USA*, **95**, 1277-1282.
- Ward, B. S., Nordeen, E. J. & Nordeen, K. W. (2001). Anatomical and ontogenetic factors producing variation in HVC neuron number in zebra finches. *Brain Res.*, **904**, 318-326.
- Ward, B. C., Nordeen, E. J. & Nordeen, K. W. (2000). An investigation of anatomical and ontogenetic factors producing variation in HVC neuron number in zebra finches. *Soc. Neurosci. Abstr.*, **26**.
- Warren, P. S. (2002). Geographic variation and dialects in song of the bronzed cowbird (*Molothrus aeneus*). *Auk*, **119**, 349-361.
- Wass, J. R. (1988). Song pitch-habitat relationships in white-throated sparrows: cracks in acoustic windows? *Can. J. Zool.*, **66**, 2578-2581.
- Watanabe, S. & Nemoto, M. (1998). Reinforcing property of music in Java sparrows (*Padda oryzivora*). *Behav. Process.*, **43**, 211-218.
- Watanabe, S. & Sato, K. (1999). Discriminative stimulus properties of music in Java sparrows. *Behav. Process.*, **47**, 53-57.
- Watanabe, T. & Jian, T. (1993). Visual and auditory cues in conspecific discrimination learning in Bengalese finches. *J. Ethol.*, **11**, 111-116.
- Watanabe, A., Kimura, T. & Sakaguchi, H. (2002). Expression of protein kinase C in song control nuclei of deafened adult male Bengalese finches. *NeuroReport*, **13**, 127-132.
- Watanabe, A., Kimura, T. & Sakaguchi, H. (2001). The expression of protein kinase C in the song control nuclei of deafened adult male Bengalese finches *Lonchura striata* var. *domestica*. *Zool. Sci. (Tokyo)*, **18**, Suppl., 119.
- Weary, D. M. (1988). *Experimental studies on the song of the great tit*. D. Phil. dissertation. University of Oxford; Oxford.
- Weary, D. M., Lemon, R. E. & Perreault, S. (1994). Male yellow warblers vary use of song types depending on pairing status and distance from nest. *Auk*, **111**, 727-729.
- Weary, D. M., Lemon, R. E. & Date, E. M. (1986). Acoustic features used in song discrimination by the veery. *Ethology*, **72**, 199-203.
- Weary, D. M., Lemon, R. E. & Perreault, S. (1994). Different responses to different song types in American redstarts. *Auk*, **111**, 730-734.
- Weatherhead, P. J., Metz, K. J., Bennett, G. F. & Irwin, R. E. (1993). Parasite faunas, testosterone and secondary sexual traits in male red-winged blackbirds. *Behav. Ecol. Sociobiol.*, **33**, 13-23.

- Weichel, K., Schwager, G., Heid, P., Guettinger, H. R. & Pesch, A. (1986). Sex differences in plasma steroid concentrations and singing behaviour during ontogeny in canaries (*Serinus canaria*). *Ethology*, **73**, 281-294.
- Weisleder, P., Lu, Y. & Park, T. J. (1996). Anatomical basis of a congenital hearing impairment: basilar papilla displasia in the Belgian waterslager canary. *J. Comp. Neurol.*, **369**, 292-301.
- Weisman, R., Njegovan, M., Sturdy, C., Phillmore, L., Coyle, J. & Mewhort, D. (1998). Frequency-range discriminations: Special and general abilities in zebra finches (*Taeniopygia guttata*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **112**, 244-257.
- Weisman, R., Brownlie, L., Olthof, A., Njegovan, M., Sturdy, C. & Mewhort, D. (1999). Timing and classifying brief acoustic stimuli by songbirds and humans. *J. Exp. Psychol., Anim. Behav. Proc.*, **25**, 139-152.
- Weisman, R. G. & Ratcliffe, L. M. (1992). The perception of pitch constancy in bird song. In *Cognitive Aspects of Stimulus Control* (W. K. Honig & J. G. Fetterman, eds.). Erlbaum; Hillsdale, N. J., pp. 243-261.
- Weisman, R., Njegovan, M. & Ito, S. (1994). Frequency ratio discrimination by zebra finches *Taeniopygia guttata* and humans *Homo sapiens*. *J. Comp. Psychol.*, **108**, 363-372.
- Weller, A.-A. (1995). Attraction of migrating blackcaps, *Sylvia atricapilla*, to conspecific song in spring. *Gerfaut*, **85**, 95-98.
- Welling, P., Rytkoenen, S. O., Koivula, K. T. & Orell, M. I. (1997). Song rate correlates with paternal care and survival in willow tits: advertisement of male quality? *Behaviour*, **134**, 891-904.
- Welling, P., Koivula, K. & Orell, M. (1997). Dawn chorus and female behaviour in the willow tit *Parus montanus*. *Ibis*, **139**, 1-3.
- Welling, P., Koivula, K. & Lahti, K. (1995). The dawn chorus is linked with female fertility in the willow tit *Parus montanus*. *J. Avian Biol.*, **26**, 241-246.
- Wells, J. V. & Vickery, P. D. (1994). Extended flight-songs of vesper sparrows. *Wilson Bull.*, **106**, 696-702.
- Wendtlandt, S. & Todt, D. (1996). Ontogeny of time structure in nightingale song. *Bioacoustics*, **6**, 322-323.
- Wennstrom, K. L., Reeves, B. J., Diaz, J. & Brenowitz, E. (2000). Metabolic capacity of adult avian song control nuclei is increased by testosterone treatment. *Soc. Neurosci. Abstr.*, **26**.
- Wennstrom, K. L., Reeves, B. J. & Brenowitz, E. A. (2001). Testosterone treatment increases the metabolic capacity of adult avian song control nuclei. *J. Neurobiol.*, **48**, 256-264.
- West, M. J., King, A. P. & Freeberg, T. M. (1997). Building a social agenda for the study of birdsong. In *Social Influences on Vocal Development* (C. T. Snowdon & M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 41-56.
- West, M. J. & King, A. P. (1988). Ontogenetic programs underlying geographic variation in cowbird song. In *Proc. XIX Int. Ornithol. Congr.* (H. Ouellet, ed.). National Museum of Natural Science, University of Ottawa Press; Ottawa, pp. 1598-1605.
- West, M. J., King, A. P. & Freeberg, T. M. (1998). Dual signaling during mating in brown-headed cowbirds (*Molothrus ater*; family Emberizidae/Icterinae). *Ethology*, **104**, 250-267.
- West, M. & King, A. (1996). Eco-gen-actics: A systems approach to the ontogeny of avian communication. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 20-38.
- West, M. J. & King, A. P. (1990). Mozart's starling. *Am. Sci.*, **78**, 106-114.
- Westcott, D. A. (1997). Neighbours, strangers and male-male aggression as a determinant of lek size. *Behav. Ecol. Sociobiol.*, **40**, 235-242.
- Westneat, M. W., Long, J. H., Hoese, W. & Nowicki, S. (1993). Kinematics of birdsong: functional correlation of cranial movements and acoustic features in sparrows. *J. Exp. Biol.*, **182**, 147-171.
- Whaling, C., Nelson, D. A. & Marler, P. (1995). Testosterone-induced shortening of the storage phase of song development in birds interferes with vocal learning. *Devl. Psychobiol.*, **28**, 367-376.
- Whaling, C. S., Soha, J. A., Nelson, D. A., Lasley, B. & Marler, P. (1998). Photoperiod and tutor access affect the process of vocal learning. *Anim. Behav.*, **56**, 1075-1082.
- Whaling, C. S., Solis, M. M., Doupe, A. J., Soha, J. A. & Marler, P. (1997). Acoustic and neural bases for innate recognition of song. *Proc. Natl. Acad. Sci. USA*, **94**, 12694-12698.
- White, S. A. & Mooney, R. (1999). Birdsong: Can an old bird change his tune? *Curr. Biol.*, **9**, R688-R690.
- White, D. J., King, A. P., Cole, A. & West, M. J. (2002). Opening the social gateway: Early vocal and social sensitivities in brown-headed cowbirds (*Molothrus ater*). *Ethology*, **108**, 23-37.
- White, D. J., West, M. J. & King, A. P. (2001). Social experience of flockmates influences development of courtship and communication in cowbirds, *Molothrus ater*. *Dev. Psychobiol.*, **38**, 217.
- White, S. A. (2001). Learning to communicate. *Curr. Opin. Neurobiol.*, **11**, 510-520.
- White, S. A. & Mooney, R. (2000). Androgens accelerate NMDA-EPSC development but do not prevent extended learning in zebra finch isolates. *Soc. Neurosci. Abstr.*, **26**.
- White, S. A., Livingston, F. S. & Mooney, R. (1999). Androgens modulate NMDA receptor-mediated EPSCs in the zebra finch song system. *J. Neurophysiol.*, **82**, 2221-2234.

- White, S. A., Livingston, F. S. & Mooney, R. (1999). Auditory and social isolation alters NMDA-EPSCs within LMAN but not in RA, during song development. *Soc. Neurosci. Abstr.*, **25**, 623.
- Whiten, A. & Ham, R. (1992). On the nature and evolution of imitation in the animal kingdom: Reappraisal of a century of research. *Adv. Study Behav.*, **21**, 239-283.
- Whitfield-Rucker, M. & Cassone, V. M. (2000). Photoperiodic regulation of the male house sparrow song control system: Gonadal dependent and independent mechanisms. *Gen. Comp. Endocrinol.*, **118**, 173-183.
- Whitney, B. M. & Pacheco, J. F. (1994). Behavior and vocalizations of *Gyalophylax* and *Megaxenops* (Furnariidae). 2. Little known genera endemic to northeastern Brazil. *Condor*, **96**, 559-565.
- Whitney, B. M. & Rosenberg, G. H. (1993). Behavior, vocalizations and possible relationships of *Xenornis setifrons* (Formicariidae): a little known Choco endemic. *Condor*, **95**, 227-231.
- Whitney, B. M. (1994). Behavior, vocalizations, and possible relationships of four *Myrmotherula* antwrens (Formicariidae) from eastern Ecuador. *Auk*, **111**, 469-475.
- Whitney, O., Soderstrom, K. & Johnson, F. (2000). Post-transcriptional regulation of zenk expression associated with zebra finch vocal development. *Molec. Brain Res.*, **80**, 279-290.
- Whitney, O., Soderstrom, K. & Johnson, F. (2001). Cannabinoid effects on song stimulus induced zenk expression within the songbird auditory telencephalon. *Soc. Neurosci. Abstr.*, **27**, 1427.
- Whitney, O., Soderstrom, K. & Johnson, F. (1999). Developmental regulation of ZENK translation suggests a role in vocal stereotypy. *Soc. Neurosci. Abstr.*, **25**, 1367.
- Whittingham, L. A., Kirk-Connell, A. & Ratcliffe, L. M. (1992). Differences in song and sexual dimorphism between Cuban and North American red-winged blackbirds *Agelaius phoeniceus*. *Auk*, **109**, 928-933.
- Whittingham, L. A., Kirkconnell, A. & Ratcliffe, L. M. (1993). Differences in song and sexual dimorphism between Cuban and North-American red-winged blackbirds (*Agelaius phoeniceus*). *Auk*, **110**, 954-955.
- Whittingham, L. A., Kirkconnell, A. & Ratcliffe, L. M. (1997). The context and function of duet and solo songs in the red-shouldered blackbird. *Wilson Bull.*, **109**, 279-289.
- Wickler, W. & Lunau, L. (1996). How do East African bush shrikes *Laniarius funebris* recognize male and female tutors during gender dialect development? *Naturwissenschaften*, **83**, 579-580.
- Wiebe, M. O. & Lein, M. R. (1999). Use of song types by mountain chickadees (*Poecile gambeli*). *Wilson Bull.*, **111**, 368-375.
- Wiehe, H. (1989). Lesser whitethroat *Sylvia curruca* imitates great reed warbler *Acrocephalus arundinaceus*. *Vogelkundliche Berichte Niedersachsen*, **21**, 27 (German).
- Wilbrecht, L., Crionas, A. & Nottebohm, F. (2002). Experience affects recruitment of new neurons but not adult neuron number. *J. Neurosci.*, **22**, 825-831.
- Wilbrecht, L. E. & Nottebohm, F. N. (2001). Experience affects the dynamics of new neuron recruitment even when final count is unaffected. *Soc. Neurosci. Abstr.*, **27**, 1561.
- Wilczynski, W., Ryan, M. J. & Brenowitz, E. A. (1989). The display of the blue-black grassquit: the acoustic advantage of getting high. *Ethology*, **80**, 218-222.
- Wild, J. M. (1994). The auditory-vocal-respiratory axis in birds. *Brain Behav. Evol.*, **44**, 192-209.
- Wild, J. M. & Williams, M. N. (1999). Rostral wulst of passerine birds: II. Intratelencephalic projections to nuclei associated with the auditory and song systems. *J. Comp. Neurol.*, **413**, 520.
- Wild, J. M. (1993). Descending projections of the songbird nucleus robustus archistriatalis. *J. Comp. Neurol.*, **338**, 225-241.
- Wild, J. M. (1993). The avian nucleus retroambigualis: a nucleus for breathing, singing and calling. *Brain Res.*, **606**, 319-324.
- Wild, J. M. (1994). Visual and somatosensory inputs to the avian song system via nucleus uvulaeformis (uva) and a comparison with projections of a similar thalamic nucleus in a non-songbird, *Columba livia*. *J. Comp. Neurol.*, **349**, 512-535.
- Wild, J. M. (1997). Neural pathways for the control of birdsong production. *J. Neurobiol.*, **33**, 653-670.
- Wild, J. M. (1997). Functional anatomy of neural pathways contributing to the control of song production in birds. *Eur. J. Morphol.*, **35**, 303-325.
- Wild, J. M., Goller, F. & Suthers, R. A. (1998). Inspiratory muscle activity during bird song. *J. Neurobiol.*, **36**, 441-453.
- Wild, J. M., Williams, M. N. & Suthers, R. A. (2000). Neural pathways for bilateral vocal control in songbirds. *J. Comp. Neurol.*, **423**, 413-426.
- Wild, J. M., Williams, M. N. & Suthers, R. A. (2001). Parvalbumin-positive projection neurons characterise the vocal premotor pathway in male, but not female, zebra finches. *Brain Res.*, **917**, 235-252.
- Wiley, R. H. & Godard, R. (1996). Ranging of conspecific songs by Kentucky warblers and its implications for interactions of territorial males. *Behaviour*, **133**, 81-102.
- Wiley, R. H. (1998). Ranging reconsidered. *Behav. Ecol. Sociobiol.*, **42**, 143-146.

- Wiley, R. H., Godard, R. & Thompson, A. D., Jr. (1994). Use of two singing modes by hooded warblers as adaptations for signalling. *Behaviour*, **129**, 243-278.
- Wiley, R. H. & Godard, R. (1992). Ranging of conspecific songs by Kentucky warblers, *Oporornis formosus*, reduces the possibilities for interference in territorial interactions. *IVth Int. Behav. Ecol. Congr. Abstr.*, T54c.
- Wiley, R. H., Tatchwell, B. J. & Davies, N. B. (1991). Recognition of individual males' songs by female dunnocks: a mechanism increasing the number of copulatory partners and reproductive success. *Ethology*, **88**, 145-153.
- Wiley, R. H., Piper, W. H., Archawaranon, M. & Thompson, E. W. (1993). Singing in relation to social dominance and testosterone in white-throated sparrows. *Behaviour*, **127**, 175-190.
- Wiley, R. H. (2000). A new sense of the complexities of bird song. *Auk*, **117**, 861-868.
- Williams, H., Kilander, K. & Sotanski, M. L. (1993). Untutored song, reproductive success and song learning. *Anim. Behav.*, **45**, 695-705.
- Williams, H., Crane, L. A., Hale, T. K., Esposito, M. A. & Nottebohm, F. (1992). Right side dominance for song control in the zebra finch. *Soc. Neurosci. Abstr.*, **18**, 527.
- Williams, H. & Vicario, D. S. (1993). Temporal patterning of song production: participation of nucleus uvaefornis of the thalamus. *J. Neurobiol.*, **24**, 903-912.
- Williams, H. E., Cynx, J. & Nottebohm, F. (1989). Timbre control in zebra finch (*Taeniopygia guttata*) song syllables. *J. Comp. Psychol.*, **103**, 366-380.
- Williams, H. & Mehta, N. (1999). Changes in adult zebra finch song require a forebrain nucleus that is not necessary for song production. *J. Neurobiol.*, **39**, 14-28.
- Williams, J. M. & Slater, P. J. B. (1993). Does chaffinch *Fringilla coelebs* song vary with the habitat in which it is sung. *Ibis*, **135**, 202-208.
- Williams, J. M. (1993). Objective comparison of song syllables: a dynamic programming approach. *J. Theor. Biol.*, **161**, 317-328.
- Williams, H., Cynx, J. & Nottebohm, F. (1989). Timbre control in zebra finch (*Taeniopygia guttata*) song syllables. *J. Comp. Psychol.*, **103**, 366-380.
- Williams, H. (2001). Choreography of song, dance and beak movements in the zebra finch (*Taeniopygia guttata*). *J. Exp. Biol.*, **204**, 3497-3506.
- Wilson, P. L. & Vehrencamp, S. L. (2001). A test of the deceptive mimicry hypothesis in song-sharing song sparrows. *Anim. Behav.*, **62**, 1197-1205.
- Wilson, P. L., Towner, M. C. & Vehrencamp, S. L. (2000). Survival and song-type sharing in a sedentary subspecies of the song sparrow. *Condor*, **102**, 355-363.
- Wingfield, J. C. & Soma, K. K. (2000). Autumn and spring territoriality: Same behavior, different mechanisms. *Am. Zool.*, **40**, 1263.
- Wise, K. K., Conover, M. R. & Knowlton, F. F. (1999). Response of coyotes to avian distress calls: Testing the startle-predator and predator-attraction hypotheses. *Behaviour*, **136**, 935-950.
- Wistel-Wozniak, A. & Hultsch, H. (1993). Constant and age dependent changed song characteristics in hand-reared nightingales (*Luscinia megarhynchos*). *Verh. Dtsch. Zool. Ges.*, **86**, 281 (German).
- Wistel-Wozniak, A. & Boehner, J. (1996). Chaffinch song in western and southern Poland. *Bioacoustics*, **6**, 323-324.
- Wistel-Wozniak, A. & Hultsch, H. (1992). Song performance in nightingales (*Luscinia megarhynchos*) which had been raised without exposure to acoustic learning programmes. *Verh. Dtsch. Zool. Ges.*, **85**, 246.
- Wolley, S. M. N. & Rubel, E. W. (1997). Bengalese finches *Lonchura striata domestica* depend upon auditory feedback in the maintenance of adult song. *J. Neurosci.*, **17**, 6380-6390.
- Woodward, R. (1995). A test of the acoustic adaptation hypothesis using songs of the cerulean warbler. B.Sc. thesis. Queen's University; Kingston, Canada.
- Woolley, S. M. N. & Rubel, E. W. (1999). High-frequency auditory feedback is not required for adult song maintenance in Bengalese finches. *J. Neurosci.*, **19**, 358-371.
- Woolley, S. M. N. & Rubel, E. W. (1999). Hair cell regeneration results in recovery of degraded song in adult Bengalese finches. *Soc. Neurosci. Abstr.*, **25**, 1365.
- Woolley, S. M., Wissman, A. M. & Rubel, E. W. (2001). Hair cell regeneration and recovery of auditory thresholds following aminoglycoside ototoxicity in Bengalese finches. *Hear. Res.*, **153**, 181-195.
- Woolley, S. M. N. & Casseday, J. H. (2001). Tuning properties of auditory midbrain neurons in adult male zebra finches. *Soc. Neurosci. Abstr.*, **27**, 1921.
- Wright, J. (1998). Helpers-at-the-nest have the same provisioning rule as parents: experimental evidence from play-backs of chick begging. *Behav. Ecol. Sociobiol.*, **42**, 423-429.
- Wright, J. & Cotton, P. A. (1994). Song versus food: trade-off decisions in a breeding colony of European starlings *Sturnus vulgaris*. *Bird Study*, **41**, 95-101.
- Wuetrich, B. (1994). Electronic twitchers spot the night birds. *New Scientist*, 2. July, 10.

- Yahner, R. H. & Ross, B. D. (1995). Seasonal response of wood thrushes to taped-playback songs. *Wilson Bull.*, **107**, 738-741.
- Yamaguchi, A. (1999). Auditory experience does not shape sexual preferences for songs in female northern cardinals. *Behaviour*, **136**, 309-330.
- Yamaguchi, A. (1996). Female bird song: function, physiology, and development in the northern cardinal. Ph.D. thesis. University of California at Davis.
- Yamaguchi, A. (1998). Can a sexually dimorphic learned birdsong be used for male-female recognition? *Behaviour*, **135**, 833-844.
- Yamaguchi, A. (1998). A sexually dimorphic learned birdsong in the northern cardinal. *Condor*, **100**, 504-511.
- Yamaguchi, A. (2001). Sex differences in vocal learning in birds. *Nature*, **411**, 257-258.
- Yang, L., Monsivais, P. & Rubel, E. W. (1999). The superior olivary nucleus and its influence on nucleus laminaris: A source of inhibitory feedback for coincidence detection in the avian auditory brainstem. *J. Neurosci.*, **19**, 2313-2325.
- Yokoyama, H. & Nakamura, K. (1993). Aversive response of tree sparrows *Passer montanus* to distress call and the sound of paper flag. *Appl. Entomol. Zool.*, **28**, 359-370.
- Yu, A. C. & Margoliash, D. (1996). Temporal hierarchical control of singing in birds. *Science*, **273**, 1871-1875.
- Zamora, R. (1991). The selection of song perches among high-mountain passerines of Southeastern Spain. *Ecol. Birds*, **13**, 181-185.
- Zann, R. (1997). Vocal learning in wild and domesticated zebra finches: Signature cues for kin recognition or epiphenomena? In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 85-97.
- Zann, R. (1993). Structure, sequence and evolution of song elements in wild Australian zebra finches. *Auk*, **110**, 702-715.
- Zann, R. (1993). Variation in song structure within and among populations of Australian zebra finches. *Auk*, **110**, 716-726.
- Zelano, B., Tarvin, K. A. & Pruett-Jones, S. (2001). Singing in the face of danger: the anomalous type II vocalization of the splendid fairy-wren. *Ethology*, **107**, 201-216.
- Zeng, S.-J., Zuo, M.-X. & Zhang, X.-W. (2001). The mechanism of sexual difference of vocalization in *Lonchura striata swinhoei*. *Zool. Res.*, **22**, 51-57.
- Zeng, S.-J., Zhang, X.-W. & Zuo, M.-X. (2001). Sexual dimorphism of song control nucleus RA in the forebrain of songbird (*Lonchura striata*). *Acta Zool. Sin.*, **47**, 535-541.
- Zevin, J. D., Seidenberg, M. S. & Bottjer, S. W. (2000). Song plasticity in adult zebra finches exposed to white noise. *Soc. Neurosci. Abstr.*, **26**.
- Zimmer, K. J., Whittaker, A. & Stotz, D. F. (1997). Vocalizations, behavior and distribution of the Rio Branco antbird. *Wilson Bull.*, **109**, 663-678.
- Zimmer, K. J. (1999). Behavior and vocalizations of the caura and the yapacana antbirds. *Wilson Bull.*, **111**, 195-209.
- Zimmer, K. J. & Whittaker, A. (2000). Species limits in pale-tipped tyrannulets (*Inezia*: Tyrannidae). *Wilson Bull.*, **112**, 51-66.
- Zimmer, K. J. & Whittaker, A. (2000). The rufous cacholote (Furnariidae: *Pseudoseisura*) is two species. *Condor*, **102**, 409-422.
- Zink, R. M. (1986). Patterns and evolutionary significance of geographic variation in the schistacea group of the fox sparrow (*Passerella iliaca*). *Ornithol. Monogr. No. 40*. American Ornithologists' Union; Washington, DC.
- Ziolkowski, Jr., D. J., Johnson, L. S., Hannam, K. M. & Searcy, W. A. (1997). Coordination of female nest attentiveness with male song output in the cavity-nesting house wren *Troglodytes aedon*. *J. Avian Biol.*, **28**, 9-14.
- Zollinger, S. & Suthers, R. A. (2001). Motor strategies of a vocal mimic: Evidence for syringeal and respiratory motor constraints in birdsong production. *Soc. Neurosci. Abstr.*, **27**, 1427.
- Zuo, M.-X., Zeng, S.-J., Peng, W.-M. & Zhang, X.-W. (2002). Neural development of vocal behavior in striated mannikin (*Lonchura striata swinhoei*). *Acta Zool. Sin.*, **48**, 50-57.
- Aamodt, S. M., Nordeen, E. J. & Nordeen, K. W. (1996). Blockade of NMDA receptors during song model exposure impairs song development in juvenile zebra finches. *Neurobiol. Learn. Memory*, **65**, 91-98.
- Aamodt, S. M., Nordeen, E. J. & Nordeen, K. W. (1995). Early isolation from conspecific song does not affect the normal developmental decline of N-methyl-D-aspartate receptor binding in an avian song nucleus. *J. Neurobiol.*, **27**, 76-84.
- Aamodt, S. M., Kozlowski, M. R., Nordeen, E. J. & Nordeen, K. W. (1992). Distribution and developmental change in [3H]MK-801 binding within zebra finch song nuclei. *J. Neurobiol.*, **23**, 997-1005.
- Aamodt, S. M., Nordeen, E. J. & Nordeen, K. W. (1992). MK801 binding declines steadily with age in a nucleus involved in avian song learning. *Soc. Neurosci. Abstr.*, **18**, 528.

- Aamodt, S. (1999). Singing in the brain: Song learning in adult zebra finches. *Nature Neurosci.*, **2**, 590.
- Aamodt, S. M., Nordeen, E. J. & Nordeen, K. W. (1993). Acute blockade of N-methyl-D-aspartate (NMDA) receptors during song exposure prevents song learning in zebra finches. *Neurosci. Soc. Abst.*, **19**, 1018.
- Aaroe, A. S. & Dabelsteen, T. (2001). Singing activity and investment in parental care in the great tit, *Parus major*. *Adv. Ethol.*, **36**, 112.
- Aastroem, G. & Stolt, B.-O. (1993). Regional song dialects of the ortolan bunting *Emberiza hortulana* L. in Sweden. *Ornis Svecica*, **3**, 1-10.

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- Abraham, C. L. & Evans, R. M. (1999). Metabolic costs of heat solicitation calls in relation to thermal need in embryos of American white pelicans. *Anim. Behav.*, **57**, 967-975.
- Adler, H. J., Kenealy, J. F. X., Dedio, R. M. & Saunders, J. C. (1992). Threshold shift, hair cell loss, and hair bundle stiffness following exposure to 120 and 125 dB pure tones in the neonatal chick. *Acta Otolaryngol.*, **112**, 444-454.
- Alexander, G. D., Houston, D. C. & Campbell, M. (1994). A possible acoustic function for the casque structure in hornbills (Aves, Bucerotidae). *J. Zool.*, **233**, 57-67.
- Ali, N. J., Farabaugh, S. & Dooling, R. (1993). Recognition of contact calls by the budgerigar *Melopsittacus undulatus*. *Bull. Psychon. Soc.*, **31**, 468-470.
- Amagai, S., Dooling, R. J., Formby, C. & Forrest, T. G. (1997). Discrimination of silent temporal gaps in sinusoidal markers by the budgerigar (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **101**, 3124.
- Amagai, S., Dooling, R. J., Shamma, S., Kidd, T. L. & Lohr, B. (1999). Detection of modulation in spectral envelopes and linear-rippled noises by budgerigars (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **105**, 2029-2035.
- Andelt, W. F. & Hopper, S. N. (1996). Effectiveness of alarm-distress calls for frightening herons from a fish rearing facility. *Prog. Fish-Cult.*, **58**, 258-262.
- Anjos, L. dos (1999). Preliminary analysis of sounds and habitat of *Picumnus nebulosus* Sundevall (Aves, Picidae). *Rev. Brasil. Zool.*, **16**, 433-439.
- Apcin, J. & Franck, D. (1994). Acoustic communication between pair mates in the spectacled parrotlet. *J. Ornithol.*, **135** (Sonderheft), 155.
- Appleby, B. M. & Redpath, S. M. (1997). Indicators of male quality in the hoots of tawny owls (*Strix aluco*). *J. Raptor Res.*, **31**, 65-70.
- Appleby, B. M. & Redpath, S. M. (1997). Variation in the male territorial hoot of the tawny owl *Strix aluco* in three English populations. *Ibis*, **139**, 152-158.
- Arrowood, P. C. (1988). Duetting, pair bonding and agonistic display in parakeet pairs. *Behaviour*, **106**, 129-157.
- Ascanio-Echeverria, D. & Davis, W. E., Jr. (2000). Notes on the habitat, behavior and vocalizations of zigzag herons in Venezuela. *Waterbirds*, **23**, 521-523.
- Ashiya, T. & Nakagawa, M. (1993). A proposal of a recognition system for the species of birds receiving birdcalls: an application of recognition systems for environmental sound. *Ieice Trans. Fundam. Electron. Comm. Comput. Sci.*, **E76A**, 1858-1860.
- Aubin, T. & Mathevon, N. (1995). Adaptation to severe conditions of propagation: long-distance distress calls; and courtship calls of a colonial seabird. *Bioacoustics*, **6**, 153-161.
- Aubin, T. & Jouventin, P. (1997). Individual recognition in a noisy environment (penguins). *Adv. Ethol.*, **32**, 27.
- Aubin, T., Jouventin, P. & Hildebrand, C. (2000). Penguins use the two-voice system to recognize each other. *Proc. Roy. Soc. Lond. B.*, **267**, 1081-1087.
- Aubin, T. & Jouventin, P. (1998). Individual recognition in the adelic penguin *Pygoscelis adeliae* and the king penguin *Aptenodytes patagonicus*: two strategies of acoustic communication in a noisy environment. *Bioacoustics*, **9**, 154.
- Aubin, T. & Jouventin, P. (1997). Discrimination of the parental call by the king penguin chick *Aptenodytes patagonicus*: the cocktail-party effect. *Bioacoustics*, **8**, 254-255.
- Aubin, T. & Jouventin, P. (1998). Cocktail-party effect in king penguin colonies. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 1665-1673.
- Aubin, T. & Lengagne, T. (1998). Recognition of the parent call by the chick of the king penguin *Aptenodytes patagonicus* in the noisy colony environment. *Bull. Soc. Zool. France*, **123**, 267-278 (French).
- Baker, M. C. (2000). Cultural diversification in the flight call of the ringneck parrot in western Australia. *Condor*, **102**, 905-910.

- Bala, A. D. S. & Takahashi, T. T. (2000). Pupillary dilation response as an indicator of auditory discrimination in an owl. *J. Comp. Physiol. A.*, **186**, 425-434.
- Balaban, E. (1997). Changes in multiple brain regions underlie species differences in a complex, congenital behavior. *Proc. Natl. Acad. Sci. USA*, **94**, 2001-2006.
- Ball, G. F. (1994). Neurochemical specializations associated with vocal learning and production in songbirds and budgerigars. *Brain Behav. Evol.*, **44**, 234-246.
- Ballintijn, M. R., ten Cate, C., Nuijens, F. & Berkhoudt, H. (1994). Sex differences in the sound producing system of the collared dove. *J. Ornithol.*, **135** (Sonderheft), 156.
- Ballintijn, M. R., ten Cate, C., Nuijens, F. & Berkhoudt, H. (1995). The syrinx of the collared dove (*Streptopelia decaocto*): structure, inter-individual variation and development. *Neth. J. Zool.*, **45**, 45-479.
- Ballintijn, M. R. & ten Cate, C. (1998). Sound production in the collared dove: a test of the "whistle" hypothesis. *J. Exp. Biol.*, **201**, 1637-1649.
- Ballintijn, M. & ten Cate, C. (1999). Acoustic differentiation in the coo-vocalizations of the collared dove. *Bioacoustics*, **10**, 1-17.
- Ballintijn, M. R., ten Cate, C., Nuijens F. & Berkhoudt, H. (1997). Sex differences in the vocalizations and syrinx of the collared dove (*Streptopelia decaocto*). *Auk*, **114**, 22-39.
- Ballintijn, M. R. & ten Cate, C. (1997). Vocal development and its differentiation in a non-songbird: the collared dove (*Streptopelia decaocto*). *Behaviour*, **134**, 595-621.
- Ballintijn, M. R. & ten Cate, C. (1994). Development of cooing in male collared doves. *J. Ornithol.*, **135** (Sonderheft), 156.
- Ballintijn, M. R. & ten Cate, C. (1999). Variation in number of elements in the perch coo vocalization in the collared dove (*Streptopelia decaocto*) and what it may tell about the sender. *Behaviour*, **136**, 847-864.
- Baltz, A. P. & Clark, A. B. (1994). Limited evidence for an audience effect in budgerigars, *Melopsittacus undulatus*. *Anim. Behav.*, **47**, 460-462.
- Banta Lavenex, P. (1999). Vocal production mechanisms in the budgerigar (*Melopsittacus undulatus*): The presence and implications of amplitude modulation. *J. Acoust. Soc. Am.*, **106**, 491-505.
- Baptista, L. F. (1996). Nature and its nurturing in avian vocal development. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 39-60.
- Baptista, L. F. & Gaunt, S. L. L. (1994). Advances in studies of avian sound communication. *Condor*, **96**, 817-830.
- Bartlett, P. (1998). Social aspects of call learning in the zebra finch (*Taeniopygia guttata*) and budgerigar (*Melopsittacus undulatus*). Ph.D. Thesis. University of St Andrews.
- Bartlett, P. & Slater, P. J. B. (1999). The effect of new recruits on the flock specific call of budgerigars (*Melopsittacus undulatus*). *Ethol. Ecol. Evol.*, **11**, 139-147.
- Bate, L. A., Finsten, A. & Crossley, J. G. (1992). Consumption patterns of newly hatched chicks as a consequence of the placement of speakers emitting maternal vocalizations within the pen. *Can. J. Anim. Sci.*, **72**, 1012-1013.
- Baumgarten, L. (1990). Notes on the vocalizations of *Barnardius zonarius semitorquatus* (Quoy and Gaimard). *Zool. Gart. N. F.*, **60**, 369-374 (German).
- Bautista, L. M. & Lane, S. J. (2000). Coal tits increase evening body mass in response to tawny owl calls. *Acta Ethol.*, **2**, 105-110.
- Beani, L. & Dessi-Fulgheri, F. (1995). Mate choice in the grey partridge, *Perdix perdix*: role of physical and Behavioural male traits. *Anim. Behav.*, **49**, 347-356.
- Beani, L., Briganti, F., Campanella, G., Lupo, C. & Dessi-Fulgheri, F. (2000). Effect of androgens on structure and rate of crowing in the Japanese quail (*Coturnix japonica*). *Behaviour*, **137**, 417-435.
- Beani, L. & Fusani, L. (1997). Function and hormonal background of vocal display in non-songbirds. *Adv. Ethol.*, **32**, 31.
- Beani, L., Panzica, G. C., Briganti, F., Persichella, P. & Dessi-Fulgheri, F. (1994). Central and peripheral correlates of courtship calls in the grey partridge (*Perdix perdix*). *Boll. Zool. Suppl.*, **61**, 19.
- Beani, L., Panzica, G., Briganti, F., Persichella, P. & Dessi-Fulgheri, F. (1995). Testosterone-induced changes in call structure, midbrain and syrinx anatomy in partridges. *Physiol. Behav.*, **58**, 1149-1157.
- Beani, L., Panzica, G. C., Briganti, F., Persichella, P. & Dessi-Fulgheri, F. (1993). Testosterone affects the acoustic structure of calls in the grey partridge (*Perdix perdix*): changes at peripheral and central levels. *Proc. Int. Conf. Hormones, Brain and Behaviour, Tours 1993*.
- Beckers, G. J. L. & ten Cate, C. (2001). Perceptual relevance of differences in coo structure in two turtle-dove species. *Adv. Ethol.*, **36**, 120.
- Beckers, G. J. L. & ten Cate, C. (2001). Perceptual relevance of species-specific differences in acoustic signal structure in *Streptopelia* doves. *Anim. Behav.*, **62**, 511-518.
- Beecher, M. D. & Stoddard, P. K. (1990). The role of bird song and calls in individual recognition: contrasting

- field and laboratory perspectives. In *Comparative Perception, Vol. 2.* (W. C. Stebbins & M. A. Berkley, eds). Wiley; New York, pp. 375-408.
- Bergmann, H.-H. & Duettmann, H. (2001). Can testosterone induce the male whistle-shake call in female shelducks *Tadorna tadorna*. *Bioacoustics*, **11**, 265-276.
- Berlin, K. E. & Clark, A. B. (1998). Embryonic calls as care-soliciting signals in budgerigars, *Melopsittacus undulatus*. *Ethology*, **104**, 531-544.
- Berrow, S. D. (2000). The use of acoustics to monitor burrow-nesting white-chinned petrels *Procellaria aequinoctialis* at Bird Island, South Georgia. *Polar Biol.*, **23**, 575-579.
- Bissonnette, J. P. & Fekete, D. M. (1996). Standard atlas of the gross anatomy of the developing inner ear of the chicken. *J. Comp. Neurol.*, **368**, 620-630.
- Blokpoel, H. & Neuman, J. (1997). Sound levels in 3 ring-billed gull colonies of different size. *Colonial Waterbirds*, **20**, 221-226.
- Boal, C. W. & Bibles, B. D. (2001). Responsiveness of elf owls to conspecific and great horned owl calls. *J. Field Ornithol.*, **72**, 66-71.
- Boehner, J. & Hammerschmidt, K. (1996). Computer-aided acoustic analysis of complex bird calls. *Bioacoustics*, **6**, 313-314.
- Bolhuis, J. J. & van Kampen, H. S. (1992). An evaluation of auditory learning in filial imprinting. *Behaviour*, **122**, 195-230.
- Bosakowski, T. & Smith, D. G. (1998). Reponse of a forest raptor community to broadcasts of heterospecific and conspecific calls during the breeding season. *Can. Field-Nat.*, **112**, 198-203.
- Boylan, J. T. (2000). Sonographic analysis of the vocalizations of Chilean and Caribbean flamingos. *Waterbirds*, **23**, 179-184.
- Brackenbury, J. H. (1989). Functions of the syrinx and control of sound production. In *Form and Function in Birds, Vol. 4* (A. S. King & J. McLelland, eds). Academic Press; San Diego, pp. 193-220.
- Bradbury, J. W., Cortopassi, K. A. & Clemmons, J. R. (2001). Geographical variation in the contact calls of orange-fronted parakeets. *Auk*, **118**, 958-972.
- Brainard, M. S. & Knudsen, E. I. (1998). Sensitive periods for visual calibration of the auditory space map in the barn owl optic tectum. *J. Neurosci.*, **18**, 3929-3942.
- Braun, K. (1994). Auditory filial imprinting: Brain circuits and mechanisms of neuronal plasticity. *J. Ornithol.*, **135**, 419.
- Brauth, S. E., Heaton, J. T., Durand, S. E., Liang, W. & Hall, W. S. (1994). Functional anatomy of forebrain auditory pathways in the budgerigar (*Melopsittacus undulatus*). *Brain Behav. Evol.*, **44**, 210-233.
- Brauth, S. E., Liang, W. & Roberts, T. (2000). Vocalization-induced zenk responses in budgerigar vocal control nuclei. *Soc. Neurosci. Abstr.*, **26**.
- Brauth, S. E., Liang, W. & Roberts, T. F. (2001). Projections of the oval nucleus of the hyperstriatum ventrale in the budgerigar: relationships with the auditory system. *J. Comp. Neurol.*, **432**, 481-511.
- Brauth, S., Liang, W., Roberts, T. F., Scott, L. L. & Quinlan, E. M. (2002). Contact call-driven zenk protein induction and habituation in telencephalic auditory pathways in the budgerigar (*Melopsittacus undulatus*): implications for understanding vocal learning processes. *Learn. Mem.*, **9**, 76-88.
- Brauth, S. E., McHale, C. M., Brasher, C. A. & Dooling, R. J. (1987). Auditory pathways in the budgerigar. I. Thalamo-telencephalic projection. *Brain Behav. Evol.*, **30**, 174-199.
- Brenowitz, E. A. & Kroodsma, D. E. (1996). The neuroethology of birdsong. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 285-304.
- Bretagnolle, V., Genevois, F. & Mougeot, F. (1998). Intra- and intersexual functions in the call of a non-passerine bird. *Behaviour*, **135**, 1161-1184.
- Bretagnolle, V. & Lequette, B. (1990). Structural variation in the call of the Cory's shearwater (*Calonectris diomedea*, Aves, Procellariidae). *Ethology*, **85**, 313-323.
- Bretagnolle, V. & Genevois, F. (1997). Geographic variation in the call of the blue petrel: effects of sex and geographical scale. *Condor*, **99**, 985-989.
- Bretagnolle, V. (1996). Acoustic communication in a group of nonpasserine birds, the petrels. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 160-177.
- Bretagnolle, V. (1995). Systematics of the soft-plumaged petrel, *Pterodroma mollis*, complex: new insight from vocalisations. *Ibis*, **137**, 207-218.
- Bretagnolle, V. (1992). Geographical variations in the calls of the west palearctic petrels and suggestions on their taxonomy. *Alauda*, **60**, 251-252 (French).
- Bretagnolle, V. & Thibault, J. C. (1993). Communicative behaviour in breeding ospreys (*Pandion haliaetus*): description and relationship of signals to life history. *Auk*, **110**, 736-751.
- Bried, J. & Jouventin, P. (1997). Morphological and vocal variation among subspecies of the black-faced

- sheathbill. *Condor*, **99**, 818-825.
- Brittan-Powell, E. F., Dooling, R. J., Larsen, O. N. & Heaton, J. T. (1997). Mechanisms of vocal production in budgerigars (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **101**, 578-589.
- Brown, E. D. & Farabaugh, S. M. (1997). What birds with complex social relationships can tell us about vocal learning: Vocal sharing in avian groups. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 98-127.
- Brown, B. T., Mills, G. S., Powels, C., Russell, W. A., Therres, G. D. & Pottie, J. J. (1999). The influence of weapons-testing noise on bald eagle behavior. *J. Raptor Res.*, **33**, 227-232.
- Brown, S. D., Dooling, R. J. & O'Grady, K. (1988). Perceptual organization of acoustic stimuli by budgerigars (*Melopsittacus undulatus*). III. Contact calls. *J. Comp. Psychol.*, **102**, 236-247.
- Brua, R. B., Nuechterlein, G. L. & Buitron, D. (1996). Vocal response of eared grebe embryos to egg cooling and egg turning. *Auk*, **113**, 525-533.
- Brua, R. B. (1996). Impact of embryonic vocalizations on the incubation behaviour of eared grebes. *Behaviour*, **133**, 145-160.
- Brua, R. B. (1993). *Incubation behavior and embryonic vocalizations of eared grebes*. MS thesis. North Dakota State University; Fargo, North Dakota.
- Budde, C. (1999). The vocal repertoire of the grey crowned crane *Balearica regulorum gibbericeps*. II: The unison call. *Bioacoustics*, **10**, 191-201.
- Budde, C. (1999). The vocal repertoire of the grey crowned crane *Balearica regulorum gibbericeps*. I: The tonal and the non-harmonic calls. *Bioacoustics*, **10**, 161-173.
- Budde, C. (1998). The behavior and vocalisations of the grey crowned crane *Balearica regulorum gibbericeps* - a comparison between captive and free-living birds. Ph.D. diss., Univ. Bonn, Bonn, Germany.
- Budde, C. (2001). Ontogeny of calls of a nonpasserine species: the grey crowned crane *Balearica regulorum gibbericeps*. *Afr. J. Ecol.*, **39**, 33-37.
- Bugden, S. C. & Evans, R. M. (1997). Vocal solicitation of heat as an integral component of the developing thermoregulatory system in young domestic chickens. *Can. J. Zool.*, **75**, 1949-1954.
- Bugden, S. C. & Evans, R. M. (1999). The development of a vocal thermoregulatory response to temperature in embryos of the domestic chicken. *Wilson Bull.*, **111**, 188-194.
- Buitron, D. & Nuechterlein, G. L. (1993). Parent-young vocal communication in eared grebes. *Behaviour*, **127**, 1-20.
- Bunting, E. C., Cotanche, D. A., Durham, D. & Girod, D. A. (1996). The role of hyaline cell migration in cochlear hair cell regeneration in chick basilar papilla following severe noise damage. *Assoc. Res. Otol. Abstr.*, **19**, 4.
- Butchart, S. H. M., Seddon, N. & Ekstrom, J. M. M. (1999). Yelling for sex: harem males compete for female access in bronze-winged jacanas. *Anim. Behav.*, **57**, 637-646.
- Butlin, R. K., Guilford, T. & Krebs, J. R., eds. (1993). The evolution and design of animal signalling systems. *Philos. Trans. R. Soc. Lond. B.*, **340**, 161-255.
- Caine, N. G., Addington, R. L. & Windfelder, T. L. (1995). Factors affecting the rate of food calls in the Burmese red junglefowl (*Gallus gallus spadiceus*). *J. Comp. Psychol.*, **106**, 92-96.
- Calladine, J., Buner, F. & Aebischer, N. J. (1999). Temporal variations in the singing activity and the detection of turtle doves *Streptopelia turtur*: Implications for surveys. *Bird Study*, **46**, 74-80.
- Carrier, P. (1995). Vocal communication in peregrine falcons *Falco peregrinus* during breeding. *Ibis*, **137**, 582-585.
- Carlsen, R. & Lickliter, R. (1999). Augmented prenatal tactile and vestibular stimulation alters postnatal auditory and visual responsiveness in bobwhite quail chicks. *Dev. Psychobiol.*, **35**, 215-225.
- Carr, C. E. (1993). Delay line models of sound localization in the barn owl. *Am. Zool.*, **33**, 79-85.
- Carr, C. E. & Konishi, M. (1990). A circuit for detection of interaural time differences in the brainstem of the barn owl. *J. Neurosci.*, **10**, 3227-3246.
- Carr, C. E. (1993). Processing of temporal information in the brain. *Ann. Rev. Neurosci.*, **16**, 223-243.
- Carr, C. E. & Boudreau, R. E. (1993). An axon with a myelinated initial segment in the bird auditory system. *Brain Res.*, **628**, 330-334.
- Cate, C. ten, Ballintijn, M. R. & Adriaanse, I. (1994). Is a coo a dove's song? *J. Ornithol.*, **135** (Sonderheft), 158.
- Cate, C. ten (1994). Perceptual mechanisms in imprinting and song learning. In *Causal Mechanisms of Behavioural Development* (J. A. Hogan & J. J. Bolhuis, eds.). Cambridge University Press; Cambridge, pp. 116-146.
- Cate, C. ten & Ballintijn, M. (1997). Behavioural mechanisms underlying vocal control in birds. *Adv. Ethol.*, **32**, 32.
- Cate, C. ten & Ballintijn, M. R. (1996). Dove coos and flashed lights: the interruptibility of song in a non-songbird. *J. Comp. Psychol.*, **110**, 267-275.
- Ceugniet, M., Aubin, T., Bernard-Laurent, A. & Soyeux, D. (1999). Vocal signatures of the rally call of red-

- legged and rock partridges and of their hybrids. *C. R. Acad. Sci. Paris, Sciences de la Vie*, **322**, 887-895.
- Chappell, M. A., Zuk, M., Kwan, T. H. & Johnsen, T. S. (1995). Energy cost of an avian vocal display: crowing in red junglefowl. *Anim. Behav.*, **49**, 255-257.
- Charrier, I., Mathevon, N., Jouventin, P. & Aubin, T. (2001). Acoustic communication in a black-headed gull colony: How do chicks identify their parents? *Ethology*, **107**, 961-974.
- Chen, L., Trautwein, P. G., Miller, K. & Salvi, R. J. (1995). Effects of kanamycin ototoxicity and hair cell regeneration on the DC endocochlear potential in adult chickens. *Hear. Res.*, **89**, 28-34.
- Chen, L., Salvi, R. J. & Hashino, E. (1993). Recovery of CAP threshold and amplitude in chickens following kanamycin ototoxicity. *Hear. Res.*, **69**, 15-24.
- Cheng, M.-F. & Zuo, M. (1995). Proposed pathways for vocal self-stimulation: met-enkephalinergic projections linking the midbrain vocal nucleus, auditory thalamic regions, and neurosecretory hypothalamus. *J. Neurobiol.*, **25**, 361-379.
- Cheng, M.-F. & Zuo, M. (1992). Connectivities of midbrain vocal control nucleus and hypothalamus: contribution of enkephalinergic pathways. *Soc. Neurosci. Abstr.*, **18**, 527.
- Cheng, M.-F. (1986). Female cooing promotes ovarian development in ring doves. *Physiol. Behav.*, **37**, 371-374.
- Cheng, M.-F., Peng, J. P. & Johnson, P. (1998). Hypothalamic neurons preferentially respond to female nest coo stimulation: demonstration of direct acoustic stimulation of luteinizing hormone release. *J. Neurosci.*, **18**, 5477-5489.
- Cochran, S. L., Stone, J. S., Bermingham-McDonogh, O., Ayers, S. R., Lefcort, F. & Rubel, E. W. (1999). Ontogenetic expression of Trk neurotrophin receptors in the chick auditory system. *J. Comp. Neurol.*, **1999**, 271-288.
- Cohen, Y. E. & Knudsen, E. I. (1995). Binaural tuning of auditory units in the forebrain archistriatal gaze fields of the barn owl: local organization but no space map. *J. Neurosci.*, **15**, 5152-5168.
- Cohon, Y. E. & Knudsen, E. I. (1995). Binaural tuning of auditory units in the forebrain archistriatal gaze fields of the barn owl: Local organization but no space map. *J. Neurosci.*, **15**, 5152-5168.
- Coles, R. B. & Guppy, A. (1988). Directional hearing in the barn owl, *Tyto alba*. *J. Comp. Physiol. A.*, **163**, 117-133.
- Collins, S. A. & Goldsmith, A. R. (1998). Individual and species differences in quail calls (*Coturnix c. japonica*, *C. c. coturnix* and a hybrid). *Ethology*, **104**, 977-990.
- Conway, C. J., Eddleman, W. R., Anderson, S. H. & Hanebury, L. R. (1993). Seasonal changes in Yuma clapper rail vocalization rate and habitat use. *J. Wildl. Manage.*, **57**, 282-290.
- Copi, C. & Vielliard, J. (1990). Phylogeny and biogeography of some Brazilian *Picumnus*, as shown by their bioacoustical characters. In *Acta XX Congr. Int. Ornithol. Suppl.* New Zealand Ornithological Congress Trust Board; Wellington, pp. 478-479.
- Cortopassi, K. A. & Bradbury, J. W. (2000). The comparison of harmonically rich sounds using spectrographic cross-correlation and principal coordinates analysis. *Bioacoustics*, **11**, 89-127.
- Cotanche, D. A. (1987). Regeneration of hair cell stereociliary bundles in the chick cochlea following severe acoustic trauma. *Hear. Res.*, **30**, 181-196.
- Cotanche, D. A., Lee, K. H., Stone, J. S. & Picard, D. A. (1994). Hair cell regeneration in the bird cochlea following noise damage or ototoxic drug damage: a review. *Anat. Embryol.*, **189**, 1-18.
- Cotanche, D. A. (1999). Structural recovery from sound and aminoglycoside damage in the avian cochlea. *Audiol. Neuro-Otol.*, **4**, 271-285.
- Cresswell, W. (1994). The function of alarm calls in redshanks, *Tringa totanus*. *Anim. Behav.*, **47**, 736-738.
- Cruikshank, A. J., Gautier, J. P. & Chappuis, C. (1993). Vocal mimicry in wild African grey parrots *Psittacus erithacus*. *Ibis*, **135**, 293-299.
- Cuisin, M. (2000). Notes on the song of the middle spotted woodpecker *Dendrocopos (=Picoides) medius*. *Alauda*, **68**, 151-153.
- Cynx, J. & Clark, S. (1998). The laboratory use of conditional and natural responses in the study of avian auditory perception. In *Animal Acoustic Communication* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer-Verlag; Berlin, pp. 353-377.
- Dantzker, M. S., Deane, G. B. & Bradbury, J. W. (1999). Directional acoustic radiation in the strut display of male sage grouse *Centrocercus urophasianus*. *J. Exp. Biol.*, **202**, 2893-2910.
- Davies, N. B., Kilner, R. M. & Noble, D. G. (1998). Nestling cuckoos, *Cuculus canorus*, exploit hosts with begging calls that mimic a brood. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 673-678.
- Davis, W. E. (1991). Evolution of distress calls in birds: still an enigma. *Bird. Obs.*, **19**, 187-190.
- Davis, W. E., Jr. & Beehler, B. M. (1993). Dual singing between an adult and fledgling marbled frogmouth. *Corella*, **17**, 111-113.
- Dent, M. L., Larsen, O. N. & Dooling, R. J. (1997). Free-field binaural unmasking in budgerigars (*Melopsittacus undulatus*). *Behav. Neurosci.*, **111**, 590-598.

- Dent, M. L., Dooling, R. J. & Pierce, A. S. (2000). Frequency discrimination in budgerigars (*Melopsittacus undulatus*): Effects of tone duration and tonal context. *J. Acoust. Soc. Am.*, **107**, 2657-2664.
- Dent, M. L., Larsen, O. N. & Dooling, R. J. (1996). Mechanisms underlying binaural phenomena in budgerigars (*Melopsittacus undulatus*). *Soc. Neurosci. Abstr.*, **22**, 153.
- Dent, M. L., Brittan-Powell, E. F., Dooling, R. J. & Pierce, A. (1997). Perception of synthetic /ba/-/wa/ speech continuum by budgerigars (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **102**, 1891-1897.
- Deregnacourt, S., Guyomarc'h, J. & Richard, V. (2001). Classification of hybrid crows in quail using artificial neural networks. *Behav. Process.*, **56**, 103-112.
- Dhondt, A. A., Lambrechts, M. M. & Bijmens, L. (1989). Acoustic communication in birds and its differences from human language. In *Studies of Language Origins* (J. Wind, E. G. Pulleyblank, E. de Grolier & B. H. Bichakjian, eds.). John Benjamins; Amsterdam, pp. 273-281.
- Diamond, J. (2002). Dispersal, mimicry, and geographic variation in northern Melanesian birds. *Pacific Sci.*, **56**, 1-22.
- Dodenhoff, D. J., Stark, R. D. & Johnson, E. V. (2001). Do woodpecker drums encode information for species recognition? *Condor*, **103**, 143-150.
- Dodenhoff, D. J. (1996). Interspecific and intraspecific communication: a quantitative analysis of drumming behavior using four species of California occurring woodpeckers (Family Picidae). M.Sc. Thesis. California Polytechnic St. Univ; San Luis Obispo, CA.
- Dooling, R. J., Best, C. T. & Brown, S. D. (1995). Discrimination of synthetic full-formant and sinewave /ra-la/ continua by budgerigars (*Melopsittacus undulatus*) and zebra finches (*Taeniopygia guttata*). *J. Acoust. Soc. Am.*, **97**, 1839-1846.
- Dooling, R. J. (1991). Hearing in birds. In *The Evolutionary Biology of Hearing* (D. Webster, R. Fay & A. Popper, eds.). Springer Verlag; New York, pp. 545-559.
- Dooling, R. J., Park, T. J., Brown, S. D., Okanoya, K. & Soli, S. D. (1987). Perceptual organization of acoustic stimuli by budgerigars (*Melopsittacus undulatus*). II. Vocal signals. *J. Comp. Psychol.*, **101**, 367-381.
- Dooling, R. J., Ryals, B. M. & Manabe, K. (1997). Recovery of hearing and vocal behavior after hair-cell regeneration. *Proc. Natl. Acad. Sci. USA*, **94**, 14206-14210.
- Dooling, R. J. (1986). Perception of vocal signals by the budgerigar (*Melopsittacus undulatus*). *Exp. Biol.*, **45**, 195-218.
- Dooling, R. J. & Ryals, B. M. (1997). Auditory perception and plasticity in the avian auditory system. *J. Acoust. Soc. Am.*, **101**, 3191.
- Douglas III, H. D. (1998). Response of eastern willets (*Catoptrophorus s. semipalmatus*) to vocalizations of eastern and western willets. *Auk*, **115**, 514-518.
- Douglas III, H. D. & Conner, W. E. (1999). Is there a sound reception window in coastal environments? Evidence from shorebird communication systems. *Naturwissenschaften*, **86**, 228-230.
- Douglas III, H. D. (1996). Communication, evolution and ecology in the willet (*Catoptrophorus semipalmatus*): its implications for shorebirds (Suborder Charadrii). M.S. Thesis. Wake Forest University; Winston-Salem.
- Dowsett-Lemaire, F. & Dowsett, R. J. (1988). Vocalizations of the green turacos (*Tauraco* species) and their systematic status. *Tauraco*, **1**, 64-71.
- Dowsett-Lemaire, F. (1992). On the vocal behaviour and habitat of the maned owl *Jubula lettii* in south western Congo. *Bull. Br. Ornithol. Club*, **112**, 213-218.
- Duckert, L. G. & Rubel, E. W. (1993). Current concepts in hair cell regeneration. *Otolaryngol. Clin. N. Am.*, **26**, 873-901.
- Duckert, L. G. & Rubel, E. W. (1993). Morphological correlates of functional recovery in the chicken inner ear after gentamicin treatment. *J. Comp. Neurol.*, **331**, 75-96.
- Duettmann, H. & Groothuis, T. (1996). Evolutionary origin, proximate causal organization and signal value of the whistle-shake-display of male shelducks (*Tadorna tadorna*). *Behaviour*, **133**, 597-618.
- Duettmann, H. & Sebbel, P. (1994). The whistle-shake display of male shelducks. *J. Ornithol.*, **135** (Sonderheft), 158.
- Duncan, R. K., Eisen, M. D. & Saunders, J. C. (1997). Strings or springs: Insight into the nature of links in chick cochlear hair bundles. *J. Acoust. Soc. Am.*, **101**, 3123.
- Durand, S. E., Brauth, S. E. & Liang, W. (2001). Calcitonin gene-related peptide immunoreactive cells and fibers in forebrain vocal and auditory nuclei of the budgerigar (*Melopsittacus undulatus*). *Brain Behav. Evol.*, **58**, 61-79.
- Durand, S. E., Heaton, J. T., Amateau, S. K. & Brauth, S. E. (1997). Vocal control pathways through the anterior forebrain of a parrot (*Melopsittacus undulatus*). *J. Comp. Neurol.*, **377**, 179-206.
- Dyson, M. L., Klump, G. M. & Gauger, B. (1998). Absolute hearing thresholds and critical masking ratios in the European barn owl: a comparison with other owls. *J. Comp. Physiol. A.*, **182**, 695-702.
- Eberhardt, L. S. (1997). A test of an environmental advertisement hypothesis for the function of drumming in

- yellow-bellied sapsuckers. *Condor*, **99**, 798-803.
- Eda-Fujiwara, H., Ishii, K., Kaibe, M., Kimura, T. & Satoh, R. (2001). Identification of an auditory telencephalic region sensitive to male song repertoires in female budgerigars. *Zool. Sci.* (Tokyo), **18**, Suppl., 119.
- Eda-Fujiwara, H. & Okumura, H. (1992). The temporal pattern of vocalizations in the budgerigar *Melopsittacus undulatus*. *J. Yamashina Inst. Ornithol.*, **24**, 18-31.
- Eda-Fujiwara, H., Ishii, K., Kaibe, M., Satoh, R. & Kimura, T. (2001). Differential neuronal activation by male song repertoires in the forebrain of female budgerigars. *Adv. Ethol.*, **36**, 147.
- Eda-Fujiwara, H., Watanabe, A. & Okumura, H. (1995). Effects of deafening on the temporal pattern of vocalizations in the budgerigar *Melopsittacus undulatus*. *J. Ethol.*, **13**, 145-152.
- Eilam, D., Dayan, T., Ben-Eliyahu, S., Schulman, I., Shefer, G. & Hendrie, C. A. (1999). Differential behavioural and hormonal responses of voles and spiny mice to owl calls. *Anim. Behav.*, **58**, 1085-1093.
- Ellis, P., Ratcliffe, N. & Suddaby, D. (1998). Seasonal variation in diurnal attendance and response to playback by Leach's petrels *Oceanodroma leucorhoa* on Gruney, Shetland. *Ibis*, **140**, 336-339.
- Englaender, W. & Bergmann, H.-H. (1990). On the vocal development in the shelduck. *Voliere*, **13**, 228-232 (German).
- Erasmus, R. P. B. (1992). Notes on the call of the grass owl *Tyto capensis*. *Ostrich*, **63**, 184-185.
- Evans, C. S. & Evans, L. (1999). Chicken food calls are functionally referential. *Anim. Behav.*, **58**, 307-319.
- Evans, C. S. (1993). Recognition of contentment call spectral characteristics by mallard ducklings: evidence for a consistent perceptual process. *Anim. Behav.*, **45**, 1071-1082.
- Evans, R. M. (1988). Embryonic vocalizations as care soliciting signals, with particular reference to the American white pelican. In *Acta XIX Congressus Internationalis Ornithologici* (H. Ouellet, ed.). Ottawa Press; Ottawa, pp. 1465-1475.
- Evans, C. S., Evans, L. & Marler, P. (1993). On the meaning of alarm calls: functional reference in an avian vocal system. *Anim. Behav.*, **46**, 23-38.
- Evans, R. M., Whitaker, A. & Wiebe, M. O. (1994). Development of vocal regulation of temperature by embryos in pipped eggs of ring-billed gulls. *Auk*, **111**, 596-604.
- Evans, R. M. (1994). Cold-induced calling and shivering in young American white pelicans: Honest signalling of offspring need for warmth in a functionally integrated thermoregulatory system. *Behaviour*, **129**, 13-34.
- Evans, C. S. & Marler, P. (1994). Food calling and audience effects in male chickens, *Gallus gallus*: Their relationships to food availability, courtship and social facilitation. *Anim. Behav.*, **47**, 1159-1170.
- Fahn, O., Robbins, M. B., Valenzuela, P. M., Coopmans, P., Ridgely, R. S. & Schuchmann, K.-L. (2000). Status, ecology, and vocalizations of the five-coloured barbet *Capito quinticolor* in Ecuador, with notes on the orange-fronted barbet *C. squamatus*. *Bull. Brit. Ornithol. Club*, **120**, 16-22.
- Fangrath, M. (1994). Analyses of corn crane (*Crex crex*) calls. MSc thesis. University of Osnabrück; Osnabrück (German).
- Farabaugh, S. M. & Wild, J. M. (1997). Reciprocal connections between primary and secondary auditory pathways in the telencephalon of the budgerigar (*Melopsittacus undulatus*). *Brain Res.*, **747**, 18-25.
- Farabaugh, S. M., Linzenbold, A. & Dooling, R. J. (1994). Vocal plasticity in budgerigars (*Melopsittacus undulatus*): evidence for social factors in the learning of contact calls. *J. Comp. Psychol.*, **108**, 81-92.
- Farabaugh, S. M. & Dooling, R. J. (1996). Acoustic communication in parrots: Laboratory and field studies of budgerigars, *Melopsittacus undulatus*. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 97-117.
- Farabaugh, S. M., Dent, M. L. & Dooling, R. J. (1998). Hearing and vocalizations of wild-caught Australian budgerigars (*Melopsittacus undulatus*). *J. Comp. Psychol.*, **112**, 74-81.
- Farquhar, C. C. (1993). Individual and intersexual variation in alarm calls of the white-tailed hawk. *Condor*, **95**, 234-239.
- Ferdinand, L. (1996). Sonographic analysis of redshank *Tringa totanus* calls. *Bioacoustics*, **6**, 299-300.
- Fernandez-Juricic, E., Martella, M. B. & Alvarez, E. V. (1998). Vocalizations of the blue-fronted amazon (*Amazona aestiva*) in the Chancani Reserve, Cordoba, Argentina. *Wilson Bull.*, **110**, 352-361.
- Fernandez-Juricic, E. & Martella, M. B. (2000). Guttural calls of blue-fronted amazons: Structure, context, and their possible role in short range communication. *Wilson Bull.*, **112**, 35-43.
- Ferrari, E. A. M., Faleiros, L., Cerutti, S. M. & Oliveira, A. M. (1999). The functional value of sound and exploratory behaviour in detelencephalated pigeons. *Behav. Brain Res.*, **100**, 93-103.
- Ficken, M. S., Rusch, K. M., Taylor, S. J. & Powers, D. R. (2000). Blue-throated humming bird song: A pinnacle of nonoscine vocalizations. *Auk*, **117**, 120-128.
- Figuerola, J. & Gustamante, L. (1995). Does use of a tape lure bias samples of curlew sandpipers captured with mist nets? *J. Field Ornithol.*, **66**, 497-500.

- Filchagov, A. V. (1999). New data on vocalization in yellow-legged herring gulls from East Europa. *Zool. Zhurnal*, **78**, 349-357.
- Fitch, W. T. (1999). Acoustic exaggeration of size in birds via tracheal elongation: Comparative and theoretical analyses. *J. Zool.*, **248**, 31-48.
- Fitch, W. T. & Kelley, J. P. (2000). Perception of vocal tract resonances by whooping cranes *Grus americana*. *Ethology*, **106**, 559-574.
- Fletcher, N. H. & Tarnopolsky, A. (1999). Acoustics of the avian vocal tract. *J. Acoust. Soc. Am.*, **105**, 35-56.
- Fletcher, N. H. (2000). A class of chaotic bird calls? *J. Acoust. Soc. Am.*, **108**, 821-826.
- Foidart, A. & Balthazart, J. (1995). Sexual differentiation of brain and behavior in quail and zebra finches: Studies with a new aromatase inhibitor, R76713. *J. Steroid Biochem. Mol. Biol.*, **53**, 267-275.
- Ford, N. G., Freeman, K. B., Feltenstein, M. W. & Sufka, K. J. (2001). Dissociation of distress vocalizations and stress-induced analgesia in the chick social-separation-stress procedure. *Soc. Neurosci. Abstr.*, **27**, 1958.
- Fowler, J. A., Hulbert, M. E. & Smith, G. (1986). Sex ratio in a sample of tape-lured storm petrels, *Hydrobates pelagicus*, from Shetland, Scotland. *Seabirds*, **9**, 15-19.
- Freeman, P. L. (2000). Identification of individual barred owls using spectrogram analysis and auditory cues. *J. Raptor Res.*, **34**, 85-92.
- Fullard, J. H., Barclay, R. M. R. & Thomas, D. W. (1993). Echolocation in free-flying swiftlets (*Aerodramus sawtelli*). *Biotropica*, **25**, 334-339.
- Furlow, B., Kimball, R. T. & Marshall, M. C. (1998). Are rooster crows honest signals of fighting ability? *Auk*, **115**, 763-766.
- Fusani, L. (1994). Steroid-sensitive mechanisms of vocal behaviour in the ring dove. Mphil thesis. University of Cambridge.
- Fusani, L., Hutchison, R. E. & Hutchison, J. B. (1997). Vocal-postural co-ordination of a sexually dimorphic display in a monomorphic species: the barbary dove. *Behaviour*, **134**, 321-335.
- Fusani, L., Beani, L. & Dessi-Fulgheri, F. (1994). Testosterone affects the acoustic structure of the male call in the grey partridge (*Perdix perdix*). *Behaviour*, **128**, 301-310.
- Gahr, M. (2000). Neural song control system of hummingbirds: Comparison to swifts, vocal learning (songbirds) and nonlearning (suboscines) passerines, and vocal learning (budgerigars) and nonlearning (dove, owl, gull, quail, chicken) nonpasserines. *J. Comp. Neurol.*, **426**, 182-196.
- Gahr, M., Guettinger, H. R. & Kroodsma, D. E. (1993). Estrogen receptors in the avian brain: survey reveals general distribution and forebrain areas unique to songbirds. *J. Comp. Neurol.*, **327**, 112-122.
- Galeotti, P. & Pavan, G. (1993). Differential responses of territorial tawny owls *Strix aluco* to the hooting of neighbours and strangers. *Ibis*, **135**, 300-304.
- Galeotti, P. R., Appleby, B. M. & Redpath, S. M. (1996). Macro and microgeographical variations in the "hoot" of Italian and English tawny owls (*Strix aluco*). *Ital. J. Zool.*, **63**, 57-64.
- Galeotti, P. (1998). Correlates of hoot rate and structure in male tawny owls *Strix aluco*: implications for male rivalry and female mate choice. *J. Avian Biol.*, **29**, 25-32.
- Galeotti, P. & Sacchi, R. (2001). Turnover of territorial scops owls *Otus scops* as estimated by spectrographic analyses of male hoots. *J. Avian Biol.*, **32**, 256-262.
- Galeotti, P., Paladin, M. & Pavan, G. (1993). Individually distinct hooting in male pygmy owls *Glaucidium passerinum*: a multivariate approach. *Ornis Scand.*, **24**, 15-20.
- Galeotti, P. & Pavan, G. (1993). Differential responses of territorial tawny owls *Strix aluco* to the hooting of neighbours and strangers. *Ibis*, **135**, 300-304.
- Gassick, J. C. le (1993). Call patterns of Eurasian scops owl. *Br. Birds*, **86**, 271.
- Gaunt, S. L. L., Baptista, L. F., Sanchez, J. E. & Hernandez, D. (1994). Song learning as evidenced from song sharing in two hummingbird species (*Colibri coruscans* and *C. thalassinus*). *Auk*, **111**, 87-103.
- Gaunt, A. S. (1986). Interaction of syringeal structure and airflow in avian phonation. *Acta XIX Congr. Int. Ornithol.*, 915-924.
- Gaunt, A. S. (1987). Phonation. In *Bird Respiration* (T. J. Seller, ed.). CRC Press; Boca Raton, Florida, pp. 71-94.
- Gaunt, A. S. (1988). Interaction of syringeal structure and airflow in avian phonation. In *Acta XIX Congressus Internationalis Ornithologici* (H. Ouellet, ed.). Ottawa, Ontario, 1986. National Museum of Natural Science; Ottawa, pp. 915-924.
- Gautier, J.-P., Cruickshank, A. J. & Chappuis, C. (1993). Vocal mimicry in wild African grey parrots *Psittacus erithacus*. In *Koninklijk Museum voor Midden Afrika, Tervuren, Belgie, Annalen Zoologische Wetenschappen, Vol. 268. Birds and the African Environment* (R. T. Wilson, ed.). Royal Museum for Central Africa; Tervuren, Belgium, pp. 453-459.
- Genevois, F. & Bretagnolle, V. (1995). Sexual dimorphism of voice and morphology in thinbilled prions (*Pachyptila belcheri*). *Notornis*, **42**, 1-10.

- Genevois, F. & Bretagnolle, V. (1994). Male blue petrels reveal their body mass when calling. *Ethol. Ecol. Evol.*, **6**, 377-383.
- Gibbs, J. P. & Melvin, S. M. (1993). Call response surveys for monitoring breeding waterbirds. *J. Wildl. Manage.*, **57**, 27-34.
- Gibson, R. M. (1996). Female choice in sage grouse: The roles of attraction and active comparison. *Behav. Ecol. Sociobiol.*, **39**, 55-59.
- Gilbert, G., McGregor, P. K. & Tyler, G. (1994). Vocal individuality as a census tool: Practical considerations illustrated by a study of two rare species. *J. Field Ornithol.*, **65**, 335-348.
- Gilbert, G. (1993). *Vocal individuality as a census and monitoring tool: practical considerations illustrated by a study of the bittern *Botaurus stellaris* and the black-throated diver *Gavia immer**. Unpublished thesis. University of Nottingham.
- Gold, J. I. & Knudsen, E. I. (1999). Hearing impairment induces frequency specific adjustments in auditory spatial tuning in the optic tectum of young owls. *J. Neurophysiol.*, **82**, 2197-2209.
- Goller, F. & Larsen, O. N. (1997). In situ biomechanics of the syrinx and sound generation in pigeons. *J. Exp. Biol.*, **200**, 2165-2176.
- Golubeva, T. B. (1994). Number of stereocilia and frequency tuning of the hair cell in birds inner ear. *J. Ornithol.*, **135** (Sonderheft), 73.
- Gonzalez-Garcia, F. (1995). Reproductive biology and vocalizations of the horned guan *Oreophasis derbianus* in Mexico. *Condor*, **97**, 415-426.
- Goodson, J. L. & Adkins-Regan, E. (1997). Playback of crows of male Japanese quail elicits female phonotaxis. *Condor*, **99**, 990-993.
- Goth, A., Vogel, U. & Curio, E. (1999). The acoustic communication of the Polynesian megapode *Megapodius pritchardii* G. R. Gray. *Zool. Verhandl. (Leiden)*, **327**, 37-51.
- Gottlieb, G., Tomlinson, W. T. & Radell, P. L. (1989). Developmental intersensory interference: Premature visual experience suppresses auditory learning in ducklings. *Infant Behav. Dev.*, **12**, 1-12.
- Grassi, S., Bambagioni, D., Ottaviani, F. & Serafini, G. (1993). Acoustic structure of vocalization and stapedius muscle activity during vocal development in chickens *Gallus gallus*. *J. Comp. Physiol. A.*, **172**, 473-479.
- Gratson, M. W. (1993). Sexual selection for increased male courtship and acoustic signals and against large male size at sharp-tailed grouse leks. *Evolution*, **47**, 691-696.
- Greenlees, T. B. & Duncan, I. J. H. (1993). Effects of enriching the acoustic environment during incubation on hatching of broiler chicks. *Poult. Sci.*, **72**, 114.
- Griffiths, C. S. (1994). Syringeal morphology and the phylogeny of the Falconidae. *Condor*, **96**, 127-140.
- Griswold, D. A., Harrer, M. F., Sladkin, C. Alessandro, D. A. & Gould, J. L. (1995). Intraspecific recognition by laughing gull chicks. *Anim. Behav.*, **50**, 1341-1348.
- Groenstoel, G. B. (1996). Aerobic components in the song-flight display of male lapwings *Vanellus vanellus* as cues in female choice. *Ardea*, **84**, 45-55.
- Groothuis, T. G. G. (1993). The ontogeny of social displays: Form development, form fixation, and change in context. *Adv. Study Behav.*, **22**, 269-322.
- Groothuis, T., Morimando, F. & Hutchison, R. (1994). Ontogeny of vocalizations in two species of non-songbirds. *J. Ornithol.*, **135** (Sonderheft), 160.
- Groothuis, T., Morimando, F. & Hutchison, R. E. (1993). Testosterone and the development of postural and vocal displays in the barbary dove. *Proc. Int. Conf. Hormones, Brain and Behaviour, Tours 1993*.
- Groothuis, T. G. G., Morimando, F., Hutchison, R. & Vos, D. (1997). Aspects of vocal development in doves, gulls, and zebra finches. *Adv. Ethol.*, **32**, 30.
- Gutzwiller, K. J., Wiedenmann, R. T., Clements, K. L. & Anderson, S. H. (1994). Effects of human intrusion on song occurrence and singing consistency in sub-alpine birds. *Auk*, **111**, 28-37.
- Guymarc'h, J.-C. & Guymarc'h, C. (1996). Vocal communication in European quail; comparison with Japanese quail. *Compt. Rendus Acad. Sci. III*, **319**, 827-834.
- Guyomarc'h, J.-C., Aupiais, A. & Guyomarc'h, C. (1998). Individual differences in the long-distance vocalizations used during pair bonding in European quail (*Coturnix coturnix*). *Ethol. Ecol. Evol.*, **10**, 333-346.
- Guyomarc'h, C. & Guyomarc'h, J. C. (1994). Influence of a daily cycle of crowing on mature male Japanese quail. *C. R. Acad. Sci. Paris*, **317**, 621-626.
- Hall, W. S., Cookson, K. K., Heaton, J. T., Roberts, T. F., Shea, S. D., Amateau, S. K. & Brauth, S. E. (1999). Cytoarchitecture of vocal control nuclei in nestling budgerigars: Relationships to call development. *Brain Behav. Evol.*, **53**, 198-226.
- Hall, W. S., Cohen, P. L. & Brauth, S. E. (1993). Auditory projections to the anterior telencephalon in the budgerigar *Melopsittacus undulatus*. *Brain Behav. Evol.*, **41**, 97-116.
- Hall, W. S., Heaton, J. T., Cohen, P. L. & Brauth, S. E. (1992). Effect of forebrain auditory lesions on call

- development in budgerigars. *Soc. Neurosci. Abstr.*, **18**, 530.
- Hampton, N. G., Bolhuis, J. J. & Horn, G. (1995). Induction and development of a filial predisposition in the chick. *Behaviour*, **132**, 451-477.
- Hansch, P. & Wallschlaeger, D. (1996). Vocalisation of curassows (Cracidae). *Bioacoustics*, **6**, 315.
- Hansen, H. M. & Guthery, F. S. (2001). Calling behavior of bobwhite males and the call-count index. *Wildl. Soc. Bull.*, **29**, 145-152.
- Haug, E. A. & Didiuk, A. B. (1993). Use of recorded calls to detect burrowing owls. *J. Field Ornithol.*, **64**, 188-194.
- Hausberger, M., Richard, J. P., Black, J. M. & Quris, R. (1994). A quantitative analysis of individuality in barnacle goose loud calls. *Bioacoustics*, **5**, 247-260.
- Hausler, U. H. L., Sullivan, W. E., Soares, D. & Carr, C. E. (1999). A morphological study of the cochlear nuclei of the pigeon (*Columba livia*). *Brain Behav. Evol.*, **54**, 290-302.
- Heaton, J. T., Farabaugh, S. M. & Brauth, S. E. (1992). The effect of syringeal denervation on call production in the budgerigar. *Soc. Neurosci. Abstr.*, **18**, 530.
- Heaton, J. T., Farabaugh, S. M. & Brauth, S. E. (1995). Effect of syringeal denervation in the budgerigar (*Melopsittacus undulatus*): the role of the syrinx in call production. *Neurobiol. Learn. Memory*, **64**, 68-82.
- Heaton, J. T. & Dooling, R. J. (1993). Effect of deafening on the contact call of adult budgerigars. *Soc. Neurosci. Abstr.*, **19**, 1015.
- Heaton, J. T., Dooling, R. J. & Farabaugh, S. M. (1999). Effects of deafening on the calls and warble song of adult budgerigars (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **105**, 2010-2019.
- Heaton, J. T. & Brauth, S. E. (1999). Effects of deafening on the development of nestling and juvenile vocalizations in budgerigars (*Melopsittacus undulatus*). *J. Comp. Psychol.*, **113**, 314-320.
- Heaton, J. T. & Brauth, S. E. (2000). Telencephalic nuclei control late but not early nestling calls in the budgerigar. *Behav. Brain Res.*, **109**, 129-135.
- Heaton, J. T. & Brauth, S. E. (2000). Effects of lesions of the central nucleus of the anterior archistriatum on contact call and warble song production in the budgerigar (*Melopsittacus undulatus*). *Neurobiol. Learn. Memory*, **73**, 207-242.
- Heidrich, P., Koenig, C. & Wink, M. (1995). Bioacoustics, taxonomy and molecular systematics in American pygmy owls (Strigidae: *Glaucidium* spp.). *Stuttgarter Beitr. Naturk., Ser. A., Nr. 534*, 47 pp. (German).
- Heist, A. (2000). Singing in the brain. *Natural History*, **10/2000**, 14-16.
- Henry, L. (1998). Influence of context on the vocal behaviour of birds. *Bull. Soc. Zool. France*, **123**, 231-238 (French).
- Herting, B. L. & Belthoff, J. R. (2001). Bounce and double trill songs of male and female western screech-owls: Characterization and usefulness for classification of sex. *Auk*, **118**, 1095-1101.
- Heymann, J. & Bergmann, H.-H. (1988). On the development of behaviour in black grouse and capercaillie (*Tetrao tetrix* and *T. urogallus*). *Norddeutsche Naturschutzakad. Ber.*, **1**, 93-97.
- Hicinbothom, G. M. & Miller, D. B. (1999). The influence of social context on the vocalizations of mallard ducklings (*Anas platyrhynchos*). *Bird Behavior*, **13**, 47-57.
- Hienz, R. D. & Sachs, M. B. (1987). Effects of noise on pure-tone thresholds in blackbirds (*Agelaius phoeniceus* and *Molothrus ater*) and pigeons (*Columba livia*). *J. Comp. Psychol.*, **101**, 16-24.
- Hile, A. G. & Striedter, G. F. (2000). Call convergence within groups of female budgerigars (*Melopsittacus undulatus*). *Ethology*, **106**, 1105-1114.
- Hile, A. G., Plummer, T. K. & Striedter, G. F. (2000). Male vocal imitation produces call convergence during pair bonding in budgerigars, *Melopsittacus undulatus*. *Anim. Behav.*, **59**, 1209-1218.
- Hill, F. A. R. & Lill, A. (1998). Vocalizations of the Christmas Island hawk-owl *Ninox natalis*: Individual variation in advertisement calls. *Emu*, **98**, 221-226.
- Hoeglund, J., Johansson, T. & Pelabon, C. (1997). Behaviourally mediated sexual selection: characteristics of successful male black grouse. *Anim. Behav.*, **54**, 255-264.
- Hofstetter, S. H. & Ritchison, G. (1998). The begging behavior of nestling eastern screech-owls. *Wilson Bull.*, **110**, 86-92.
- Honeycutt, H. & Lickliter, R. (2001). Order-dependent timing of unimodal and multimodal stimulation affects prenatal auditory learning in bobwhite quail embryos. *Dev. Psychobiol.*, **38**, 1-10.
- Horn, A. G., Leonard, M. L. & Weary, D. M. (1995). Oxygen consumption during crowing by roosters: talk is cheap. *Anim. Behav.*, **50**, 1171-1175.
- Hovi, M., Alatalo, R. V., Halonen, M. & Lundberg, A. (1997). Responses of male and female black grouse to male vocal display. *Ethology*, **103**, 1032-1041.
- Huelsman, H. (1996). "Water call" of young guillemots (*Uria aalge*) at sea. *Vogelwarte*, **38**, 250-252 (German).
- Hughes, J. M. (1997). Vocal duetting by a mated pair of coral-billed ground-cuckoos (*Carpococcyx renauldi*) at

- the Metro Toronto Zoo. *Zoo Biol.*, **16**, 179-186.
- Ilyichev, V. & Silayeva, O. (1992). *Talking Birds*. John P. Kent, Ballyrichard Farm, Arklow, County Wicklow, Rep. of Ireland.
- Isack, H. A. & Reyer, H.-U. (1989). Honeyguides and honey gatherers: interspecific communication in a symbiotic relationship. *Science*, **243**, 1343-1346.
- Islam, K. & Crawford, J. A. (1996). A comparison of four vocalizations of the genus *Tragopan* (Aves, Phasianidae). *Ethology*, **102**, 481-494.
- Ito, K. & Mori, K. (1999). Dynamic programming matching as a simulation of budgerigar contact call discrimination. *J. Acoust. Soc. Am.*, **105**, 552-559.
- Ito, K., Mori, K. & Iwasaki, S. (1996). Application of dynamic programming matching to classification of budgerigar contact calls. *J. Acoust. Soc. Am.*, **100**, 3947-3956.
- Jarvis, E. D. & Mello, C. V. (2000). Molecular mapping of brain areas involved in parrot vocal communication. *J. Comp. Neurol.*, **419**, 1-31.
- Jarvis, E. D., Ribeiro, S., Silva, M. L. da, Ventura, D., Vielliard, J. & Mello, C. V. (2000). Behaviourally driven gene expression reveals song nuclei in hummingbird brain. *Nature*, **406**, 628-632.
- Joergensen, J. M. & Mathisen, C. (1988). The avian inner ear. Continuous production of hair cells in vestibular sensory organs, but not in the auditory papilla. *Naturwissenschaften*, **73**, 319-320.
- Johnen, A., Wagner, H. & Gaese, B. H. (2001). Spatial attention modulates sound localization in barn owls. *J. Neurophysiol.*, **85**, 1009-1012.
- Jones, K. J. & Hill, W. L. (2001). Auditory perception of hawks and owls for passerine alarm calls. *Ethology*, **107**, 717-726.
- Jones, D. N. & Smith, G. C. (1997). Vocalisations of the marbled frogmouth. II: An assessment of vocal individuality as a potential census technique. *Emu*, **97**, 296-304.
- Jouventin, P., Aubin, T., Lengagne, T. (1999). Finding a parent in a king penguin colony: the acoustic system of individual recognition. *Anim. Behav.*, **57**, 1175-1183.
- Jurisevic, M. A. & Sanderson, K. J. (1998). A comparative analysis of distress call structure in Australian passerine and non-passerine species: influence of size and phylogeny. *J. Avian Biol.*, **29**, 61-71.
- Jurisevic, M. A. (1998). Comparison of vocalisations of Australian falcons and elanine kites. *Emu*, **98**, 1-12.
- Jurisevic, M. & Sanderson, K. J. (1998). Acoustic perception of passerine anti-predator signals by Australian raptors. *Aust. J. Zool.*, **46**, 369-380.
- Jurisevic, M. A. & Sanderson, K. J. (2000). Responses of Australian raptors to pure tones. *Emu*, **100**, 70-71.
- Jurisevic, M. A. (1997). Acoustic perception of alarm and distress vocalisations by Australian raptors. *Adv. Ethol.*, **32**, 116.
- Kaiser, E. (1997). Sexual recognition of common swifts. *Brit. Birds*, **90**, 167-174.
- Kampen, H. S. van (1994). Courtship food-calling in Burmese red junglefowl. I. The causation of female approach. *Behaviour*, **131**, 261-275.
- Kampen, H. S. van & Bolhuis, J. J. (1993). Interaction between auditory and visual learning during filial imprinting. *Anim. Behav.*, **45**, 623-625.
- Karakashian, S. J., Gyger, M. & Marler, P. (1988). Audience effects on alarm calling in chickens (*Gallus gallus*). *J. Comp. Psychol.*, **102**, 129-135.
- Katayama, A. & Corwin, J. T. (1993). Cochlear cytotogenesis visualized through pulse labeling of chick embryos in culture. *J. Comp. Neurol.*, **333**, 28-40.
- Kayser, B. (1999). Diurnal and seasonal variation in song activity. *Dansk Orn. Foren. Tidsskr.*, **93**, 91-103.
- Kearns, G. D., Kwartin, N. B., Brinker, D. F. & Haramis, G. M. (1998). Digital playback and improved trap design enhances capture of migrant soras and Virginia rails. *J. Field Ornithol.*, **69**, 466-473.
- Keast, A. (1993). Song structures and characteristics: Members of a Eucalypt forest bird community compared. *Emu*, **93**, 259-268.
- Keller, C. H. & Takahashi, T. T. (2000). Representation of temporal features of complex sounds by the discharge patterns of neurons in the owl's inferior colliculus. *J. Neurophysiol.*, **84**, 2638-2650.
- Keller, C. H. & Takahashi, T. T. (1996). Responses to simulated echoes by neurons in the barn owl's auditory space map. *J. Comp. Physiol. A.*, **178**, 499-512.
- Kennedy, P. L. & Stahlecker, D. W. (1993). Responsiveness of nesting northern goshawks to taped broadcasts of three conspecific calls. *J. Wildl. Manage.*, **57**, 249-257.
- Kennedy, P. L. & Stahlecker, D. W. (1993). Responsiveness of nesting northern goshawks to taped broadcasts of three conspecific calls. *J. Raptor Res.*, **27**, 74-75.
- Kent, J. P. (1993). The chick's preference for certain features of the maternal cluck vocalization in the domestic fowl (*Gallus gallus*). *Behaviour*, **125**, 177-187.
- Khaling, S., Kaul, R. & Saha, G. K. (2002). Calling behaviour and its significance in satyr tragopan, *Tragopan satyra* (Galliformes: Phasianidae) in the Singhalila National Park, Darjeeling, India. *Proc. Zool. Soc. (Calcutta)*, **55**, 1-9.

- Kilner, R. M. (2000). Multiple nestling begging signals: Reed warbler chicks and cuckoo tricks. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, pp. 353-364.
- Kilner, R. M. & Davies, N. B. (1999). How selfish is a cuckoo chick? *Anim. Behav.*, **58**, 797-808.
- Kilner, R. M., Noble, D. G. & Davies, N. B. (1999). Signals of need in parent-offspring communication and their exploitation by the common cuckoo. *Nature*, **397**, 667-672.
- King, A. S. (1989). Functional anatomy of the syrinx. In *Form and Function in Birds, Vol. 4* (A. S. King & J. McLelland, eds.). Academic Press; New York, pp. 107-192.
- Klatt, P. H. & Ritchison, G. (1993). The duetting behavior of eastern screech owls. *Wilson Bull.*, **105**, 483-489.
- Klatt, P. H. & Ritchison, G. (1994). The effect of mate removal on the vocal behavior and movement patterns of male and female eastern screech owls. *Condor*, **96**, 485-493.
- Klinke, R. & Smolders, J. W. T. (1993). Performance of the avian inner ear. *Prog. Brain Res.*, **97**, 31-43.
- Klump, G. M. (1996). Sound localization studies in non-specialized birds. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay and W. C. Stebbins, eds.). Birkhaeuser Verlag; Basel, pp. 221-233.
- Klump, G. M. (1996). Bird communication in the noisy world. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 321-338.
- Knudsen, E. I. (1998). Capacity for plasticity in the adult owl auditory system expanded by juvenile experience. *Science*, **279**, 1531-1533.
- Knudsen, E. I., Zheng, W. & DeBello, W. M. (2000). Traces of learning in the auditory localization pathway. *Proc. Natl. Acad. Sci. USA*, **97**, 11815-11820.
- Knudsen, E. I. & Brainard, M. S. (1995). Creating a unified representation of visual and auditory space in the brain. *Ann. Rev. Neurosci.*, **18**, 19-43.
- Knudsen, E. I. (1999). Mechanisms of experience dependent plasticity in the auditory localization pathway of the barn owl. *J. Comp. Physiol. A.*, **185**, 305-321.
- Knudsen, E. I. (1988). Early blindness results in a degraded map of auditory space in the optic tectum of the barn owl. *Proc. Natl. Acad. Sci. USA*, **85**, 6211-6214.
- Knudsen, E. I., Knudsen, P. F. & Masino, T. (1993). Parallel pathways mediating both sound localization and gaze control in the forebrain and midbrain of the barn owl. *J. Neurosci.*, **13**, 2837-2852.
- Knudsen, E. I. & Knudsen, P. F. (1996). Contribution of the forebrain archistriatal gaze fields to auditory orienting behavior in the barn owl. *Exp. Brain Res.*, **108**, 23-32.
- Knudsen, E. I. & Brainard, M. S. (1991). Visual instruction of the neural map of auditory space in the developing optic tectum. *Science*, **253**, 85-87.
- Knudsen, E. I. & Knudsen, P. F. (1996). Disruption of auditory spatial working memory by inactivation of the forebrain archistriatum in barn owls. *Nature*, **383**, 428-431.
- Koene, P. (1996). Temporal structure of red jungle fowl crow sequences: single-case analysis. *Behav. Processes*, **38**, 193-202.
- Koene, P. & Wiepkema, P. R. (1991). Pre-dustbathing vocalizations as an indicator of a "need" in domestic hens. In *Alternatives in Animal Husbandry* (M. Boehncke, ed.). AgrarKultur Verlag; Witzhausen, pp. 95-103.
- Koenig, C. (1994). Sound utterances as interspecific isolation mechanisms in owls of the genus *Otus* (Aves: Strigidae) from the southern South America. *Stuttg. Beitr. Naturk., Ser. A.*, **Nr. 511**, 1-35 (German).
- Koenig, C. (1994). Biological patterns in owl taxonomy, with emphasis on bioacoustical studies on Neotropical pygmy (*Glaucidium*) and screech owls (*Otus*). In *Raptor Conservation Today* (B. Meyburg & R. Chancellor, eds.). WWGBP, The Pica Press; East Sussex, pp. 1-19.
- Koeppl, C., Manley, G. A. & Konishi, M. (2000). Auditory processing in birds. *Curr. Opin. Neurobiol.*, **10**, 474-481.
- Koeppl, C. (1994). Phase locking at high frequencies in the barn owl's auditory nerve. *Abstr. Midwest Res. Meet. Assoc. Res. Otolaryngol.*, **18**, 382.
- Koeppl, C. & Manley, G. A. (1997). Frequency representation in the emu basilar papilla. *J. Acoust. Soc. Am.*, **101**, 1574-1584.
- Komdeur, J. & Hatchwell, B. J. (1999). Kin recognition: function and mechanism in avian societies. *Trends Ecol. Evol.*, **14**, 237-241.
- Konishi, M. (1992). The neural algorithm for sound localization in the owl. In *Harvey Lectures, 86*. Wiley-Liss, Inc.; New York, pp. 47-64.
- Konishi, M., Takahashi, T. T., Wagner, H., Sullivan, W. E. & Carr, C. E. (1988). Neurophysiological and anatomical substrates of sound localization in the owl. In *Auditory Function: Neurobiological Bases of Hearing* (G. M. Edelman, W. E. Gall & W. M. Cowan, eds.). John Wiley & Sons; New York, pp. 721-745.

- Konishi, M. (1993). Neuroethology of sound localization in the owl. *J. Comp. Physiol. A.*, **173**, 3-7.
- Konishi, M. (1993). Listening with two ears. *Sci. Am.*, **268**(4), 66-74.
- Koppl, C. & Yates, G. (1999). Coding of sound pressure level in the barn owl's auditory nerve. *J. Neurosci.*, **19**, 9674.
- Kort, S. R. de, den Hartog, P. & ten Cate, C. (2001). Dove hybrids and their response to vocalizations of the parental species. *Adv. Ethol.*, **36**, 142.
- Kort, S. R. de & ten Cate, C. (2001). Response to interspecific vocalizations is affected by degree of phylogenetic relatedness in *Streptopelia* doves. *Anim. Behav.*, **61**, 239-247.
- Kort, S. R. de, den Hartog, P. M. & ten Cate, C. (2002). Vocal signals, isolation and hybridization in the vinaceous dove (*Streptopelia vinacea*) and the ring-necked dove (*S. capicola*). *Behav. Ecol. Sociobiol.*, **51**, 378-385.
- Kroodsma, D. E., Vielliard, J. M. E. & Stiles, F. G. (1996). Study of bird sounds in the Neotropics: Urgency and opportunity. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 269-281.
- Kroodsma, D. E. & Miller, E. H., eds. (1996). *Ecology and Evolution of Acoustic Communication in Birds*. Comstock Publishing Associates, Cornell University Press; Ithaca and London.
- Lambrechts, M. M. & Dhondt, A. A. (1994). Individual voice discrimination in birds. *Curr. Ornithol.*, **12**, 115-139.
- Lanctot, R. B., Sandercock, B. K. & Kempnaers, B. (2000). Do male breeding displays function to attract mates or defend territories? The explanatory role of mate and site fidelity. *Waterbirds*, **23**, 155-164.
- Larsen, O. N. & Goller, F. (2002). Direct observation of syringeal muscle function in songbirds and a parrot. *J. Exp. Biol.*, **205**, 25-35.
- Larsen, O. N., Dent, M. & Dooling, R. J. (1993). Free-field release from noise masking in parakeets. *Soc. Neurosci. Abstr.*, **19**, 1015.
- Larsen, O. N., Dent, M. L. & Dooling, R. J. (1994). Free-field release from masking in the budgerigar (*Melopsittacus undulatus*). In *Sensory Transduction, Vol. 2*. (H. Breer & N. Elsner, eds.). Thieme Verlag; Stuttgart, p. 370.
- Lavenex, P. B. (1999). Vocal production mechanisms in the budgerigar (*Melopsittacus undulatus*): The presence and implications of amplitude modulations. *J. Acoust. Soc. Am.*, **106**, 491-505.
- Lavenex, P. B. (2000). Lesions in the budgerigar vocal control nucleus NLC affect production, but not memory, of English words and natural vocalizations. *J. Comp. Neurol.*, **421**, 437-460.
- Lee, K. H. & Cotanche, D. A. (1996). Potential role of bFGF and retinoic acid in the regeneration of chicken cochlear hair cells. *Hear. Res.*, **94**, 1-13.
- Leek, M. R., Dent, M. L. & Dooling, R. J. (2000). Masking by harmonic complexes in budgerigars (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **107**, 1737-1744.
- Lefevre, K., Gaston, A. J. & Montgomerie, R. (2001). Repertoire, structure, and individual distinctiveness of thick-billed murre calls. *Condor*, **103**, 134-142.
- Lefevre, K., Montgomerie, R. & Gaston, A. J. (1998). Parent-offspring recognition in thick-billed murre (Aves: Alcidae). *Anim. Behav.*, **55**, 925-938.
- Legare, M. L., Eddleman, W. R., Buckley, P. A. & Kelly, C. (1999). The effectiveness of tape playback in estimating black rail density. *J. Wildlife Manage.*, **63**, 116-125.
- Lengagne, T., Jouventin, P. & Aubin, T. (1999). Finding one's mate in a king penguin colony: Efficiency of acoustic communication. *Behaviour*, **136**, 833-846.
- Lengagne, T., Lauga, J. & Jouventin, P. (1997). A method of independent time and frequency decomposition of bioacoustic signals: inter-individual recognition in four species of penguins. *Compt. Rendus Acad. Sci.*, **320**, 885-891.
- Lengagne, T. (2001). Temporal stability in the individual features in the calls of eagle owls (*Bubo bubo*). *Behaviour*, **138**, 1407-1419.
- Lengagne, T., Aubin, T., Jouventin, P. & Lauga, J. (2000). Perceptual salience of individually distinctive features in the calls of adult king penguins. *J. Acoust. Soc. Am.*, **107**, 508-516.
- Lengagne, T., Lauga, J. & Aubin, T. (2001). Intra-syllabic acoustic signatures used by the king penguin in parent-chick recognition: an experimental approach. *J. Exp. Biol.*, **204**, 663-672.
- Lengagne, T., Lauga, J. & Jouventin, P. (1998). A method of independent time and frequency decomposition of bioacoustic signals: inter-individual recognition in four species of penguins. *C. R. Acad. Sci. Paris, Serie III*, **320**, 885-891.
- Leonard, M. L. & Horn, A. G. (1995). Crowing in relation to status in roosters. *Anim. Behav.*, **49**, 1283-1290.
- Lessells, C. M., Rowe, C. L. & McGregor, P. K. (1995). Individual and sex differences in the provisioning calls of European bee-eaters. *Anim. Behav.*, **49**, 244-247.
- Lickliter, R., Dyer, A. B. & McBride, T. (1993). Perceptual consequences of early social experience in precocial

- birds. *Behav. Processes*, **30**, 185-200.
- Lickliter, R. & Stoumbos, J. (1991). Enhanced prenatal auditory experience facilitates postnatal visual responsiveness in bobwhite quail chicks. *J. Comp. Psychol.*, **105**, 89-94.
- Lickliter, R. & Lewkowicz, D. J. (1995). Intersensory experience and early perceptual development: Attenuated prenatal sensory stimulation affects postnatal auditory and visual responsiveness in bobwhite quail chicks. *Dev. Psychol.*, **31**, 609-618.
- Lin, J.-Y., Dooling, R. J. & Dent, M. L. (1997). Auditory filter shapes in the budgerigar (*Melopsittacus undulatus*) derived from notched-noise maskers. *J. Acoust. Soc. Am.*, **101**, 3124.
- Lin, J.-Y. & Dooling, R. J. (1997). Detection of amplitude modulation, frequency modulation, and quasifrequency modulation by the budgerigar (*Melopsittacus undulatus*). *J. Acoust. Soc. Am.*, **101**, 3082.
- Lohr, B. & Dooling, R. J. (1998). Detection of changes in timbre and harmonicity by zebra finches (*Taeniopygia guttata*) and budgerigars (*Melopsittacus undulatus*). *J. Comp. Psychol.*, **112**, 36-47.
- Long, K. D., Kennedy, G. & Balaban, E. (2001). Transferring an inborn auditory perceptual predisposition with interspecies brain transplants. *Proc. Natl. Acad. Sci. USA*, **98**, 5862-5867.
- Lotem, A. (1998). Manipulative begging calls by parasitic cuckoo chicks: why should true offspring not do the same? *Trends Ecol. Evol.*, **13**, 342-343.
- Lotem, A. (1999). Manipulative begging by parasitic cuckoo nestlings and paradoxical host behaviour: a reply to Redondo. *Trends Ecol. Evol.*, **14**, 107.
- Lotto, A. J., Kluender, K. R. & Holt, L. L. (1997). Perceptual compensation for coarticulation by Japanese quail (*Coturnix coturnix japonica*). *J. Acoust. Soc. Am.*, **102**, 1134-1140.
- MacDougall-Shackleton, E. & Harbison, H. (1998). Singing behavior of lekking green hermits. *Condor*, **100**, 149-152.
- MacKenzie, J. G., Foster, T. M. & Temple, W. (1993). Sound avoidance in hens. *Behav. Processes*, **30**, 143-156.
- Mahler, B. & Tubaro, P. L. (2001). Relationship between song characters and morphology in New World pigeons. *Biol. J. Linn. Soc.*, **74**, 533-539.
- Maijer, S. (1996). Distinctive song of highland form maculicollis of the red-winged tinamou (*Rhynchotus rufescens*): Evidence for species rank. *Auk*, **113**, 695-697.
- Mair, J., Marx, G., Mennicken, L. & Petersen, J. (2001). Analysis of vocalisation in chicken flocks in the early light-off phase. *Adv. Ethol.*, **36**, 210.
- Maller, C. J. & Jones, D. N. (2001). Vocal behaviour of the common koel, *Eudynamis scolopacea*, and implications for mating systems. *Emu*, **101**, 105-112.
- Manabe, K., Sadr, E. I. & Dooling, R. J. (1998). Control of vocal intensity in budgerigars (*Melopsittacus undulatus*): differential reinforcement of vocal intensity and the Lombard effect. *J. Acoust. Soc. Am.*, **103**, 1190-1198.
- Manabe, K., Kawashima, T. & Staddon, J. E. R. (1995). Differential vocalization in budgerigars: Towards an experimental analysis of naming. *J. Exp. Anal. Behav.*, **63**, 111-126.
- Manabe, K., Staddon, J. E. R. & Cleaveland, J. M. (1997). Control of vocal repertoire by reward in budgerigars (*Melopsittacus undulatus*). *J. Comp. Psychol.*, **111**, 50-62.
- Manabe, K. & Dooling, R. J. (1997). Control of vocal production in budgerigars (*Melopsittacus undulatus*): selective reinforcement, call differentiation, and stimulus control. *Behav. Processes*, **41**, 117-132.
- Manley, G. A. (1990). *Peripheral Hearing Mechanisms in Reptiles and Birds*. Springer Verlag; Heidelberg.
- Manley, G. A., Koepl, C. & Konishi, M. (1988). A neural map of interaural intensity differences in the brain stem of the barn owl. *J. Neurosci.*, **8**, 2665-2676.
- Manley, G. A. & Koepl, C. (1997). Activity of primary auditory neurons in the cochlear ganglion of the emu *Dromaius novaehollandiae*: Spontaneous discharge, frequency tuning, and phase locking. *J. Acoust. Soc. Am.*, **101**, 1560-1573.
- Manley, G. A., Kaiser, A., Brix, J. & Gleich, O. (1991). Activity patterns of primary auditory-nerve fibres in chickens: Development of fundamental properties. *Hear. Res.*, **57**, 1-15.
- Marler, P. & Evans, C. (1996). Bird calls: just emotional displays or something more? *Ibis*, **138**, 26-33.
- Martens, J. & Eck, S. (1995). Towards an ornithology of the Himalayas. Systematics, ecology and vocalizations of Nepal birds. *Bonner Zool. Monogr.*, **38**, 1-445.
- Martin-Vivaldi, M., Palomino, J. J. & Soler, M. (1998). Song structure in the hoopoe (*Upupa epops*) - Strophe length reflects male condition. *J. Orn.*, **139**, 287-296.
- Martin-Vivaldi, M., Palomino, J. J. & Soler, M. (1999). Function of song in the hoopoe *Upupa epops*. *Bird Study*, **46**, 104-111.
- Martin-Vivaldi, M., Palomino, J. V. & Soler, M. (2000). Attraction of hoopoe *Upupa epops* females and males by means of song playback in the field: influence of strophe length. *J. Avian Biol.*, **31**, 351-359.
- Martin, K., Horn, A. G. & Hannon, S. J. (1995). The calls and associated behavior of breeding willow ptarmigan in Canada. *Wilson Bull.*, **107**, 496-509.

- Martin-Vivaldi, M., Palomino, J. J., Soler, M. & Martinez, J. G. (1999). Song strophe-length and reproductive success in a non-passerine bird, the hoopoe *Upupa epops*. *Ibis*, **141**, 670-679.
- Marx, G. (2001). Habituation to acoustic environmental changes in two lines of domestic chicken. *Adv. Ethol.*, **36**, 212.
- Marx, G. (1997). Gradual expression of social needs by distress calls in young chicken. *Adv. Ethol.*, **32**, 101.
- Marx, G., Leppelt, J. & Ellendorff, F. (2001). Vocalisation in chicks (*Gallus gallus dom.*) during stepwise social isolation. *Appl. Anim. Behav. Sci.*, **75**, 61-74.
- Massa, R., Galanti, V. & Bottoni, L. (1996). Mate choice and reproductive success in the domesticated budgerigar, *Melopsittacus undulatus*. *Ital. J. Zool.*, **63**, 243-246.
- Mathevon, N. (1996). What parameters can be used for individual acoustic recognition by the greater flamingo? *C. R. Acad. Sci. Paris*, **319**, 29-32.
- Mathevon, N. (1996). Avian communication in acoustically extreme environments: degradation of sound signals and adaptive strategies in unfavourable conditions for propagation. Ph.D. thesis. University of Lyon I, France (French).
- Mathevon, N. (1997). Individuality of contact calls in the greater flamingo *Phoenicopterus ruber* and the problem of background noise in a colony. *Ibis*, **139**, 513-517.
- May, L. (1994). Individually distinctive corncrake *Crex crex* calls: a pilot study. *Bioacoustics*, **6**, 25-32.
- May, L. (1998). Individually distinctive corncrake *Crex crex* calls: A further study. *Bioacoustics*, **9**, 135-148.
- Mazer, J. A. (1998). How the owl resolves auditory coding ambiguity. *Proc. Natl. Acad. Sci. USA*, **95**, 10932-10937.
- McAdie, T. M., Foster, T. M., Temple, W. & Matthews, L. R. (1993). A method for measuring the aversiveness of sounds to domestic hens. *Appl. Anim. Behav. Sci.*, **37**, 223-238.
- McBride, T. C. & Lickliter, R. (1994). Specific postnatal auditory stimulation interferes with species-typical visual responsiveness in bobwhite quail chicks. *Dev. Psychobiol.*, **27**, 169-183.
- McCracken, K. G. & Sheldon, F. H. (1997). Avian vocalizations and phylogenetic signal. *Proc. Natl. Acad. Sci. USA*, **94**, 3833-3836.
- McElroy, M. D., Leon, K., Mello, C. V. & Jarvis, E. D. (2001). Molecular mapping of vocal communication brain areas in a vocal non-learner avian species: Ring doves. *Soc. Neurosci. Abstr.*, **27**, 844.
- McFarland, D. C. (1991). The biology of the ground parrot, *Pezoporus wallicus*, in Queensland. II. Spacing, calling, and breeding behaviour. *Wildl. Res.*, **18**, 185-197.
- McGregor, P. K., Tavares, J., Langemann, U., Peake, T. M. & Latruffe, C. (1997). Acoustic communication in territorial bird networks: corn buntings and corn crakes. *Adv. Ethol.*, **32**, 126.
- McGregor, P. K. & Peake, T. M. (1998). The role of individual identification in conservation biology. In *Behavioral Ecology and Conservation Biology* (T. M. Caro, ed.). Oxford University Press; Oxford.
- McGregor, P. K., Peake, T. M. & Gilbert, G. (2000). Communication behaviour and conservation: the application of sound science. In *Animal Behaviour and Conservation* (W. J. Sutherland, M. Gosling and M. Avery, eds.). Cambridge University Press; Cambridge.
- Menoni, E. (1991). Cackle calls and territoriality of female capercaillie in spring in the Pyrenees. *Acta Biol. Mont.*, **10**, 63-82 (French).
- Miller, D. B. (1994). Social context affects the ontogeny of instinctive behaviour. *Anim. Behav.*, **48**, 627-734.
- Miller, E. H. (1992). Acoustic signals of sapsuckers: structure and evolution. *Am. Zool.*, **32**, 5A.
- Miller, G. L. & Knudsen, E. I. (1999). Early visual experience shapes the representation of auditory space in the forebrain gaze fields of the barn owl. *J. Neurosci.*, **19**, 2326-2336.
- Miller, E. H. (1995). Sounds of shorebirds: opportunities for amateurs and an update of published information. *Wader Study Group Bull.*, **78**, 18-22.
- Miller, E. H. (1996). Nuptial vocalizations of male least snipe: Structure and evolutionary significance. *Condor*, **98**, 418-422.
- Miller, E. H. (1996). Acoustic differentiation and speciation in shorebirds. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 241-257.
- Miller, E. (1988). Collection of yodel calls for individual identification of male common loons. In *Conference on Common Loon Research and Management* (P. I. V. Strong, ed.). North American Loon Fund; Meredith, NH., pp. 44-52.
- Miller, C. E. (1988). Collection of yodel calls for individual identification of male common loons. In *Papers from the 1987 North American Conference on Loon Research and Management* (P. I. V. Strong, ed.). N. American Loon Fund, Meredith, NH., pp. 1-14.
- Mills, H. (2000). Geographically distributed acoustical monitoring of migrating birds. *J. Acoust. Soc. Am.*, **108**, 2582.
- Moiseff, A. (1989). Binaural disparity cues available to the barn owl for sound localization. *J. Comp. Physiol., A.*, **164**, 629-636.

- Mori, K. & Striedter, G. (1992). Neurons in field L of budgerigars prefer species specific calls to white noise. *Soc. Neurosci. Abstr.*, **18**, 527.
- Morris, M. M. J. (2001). Rates of 'peent' calls by American woodcocks: The seven percent solution. *Ontario Birds*, **19**, 8-11.
- Mougeot, F. & Bretagnolle, V. (2000). Predation as a cost of sexual communication in nocturnal seabirds: an experimental approach using acoustic signals. *Anim. Behav.*, **60**, 647-656.
- Mueller, C. M. (1988). Distribution of GABAergic perikarya and terminals in the centers of the higher auditory pathway of the chicken. *Cell Tissue Res.*, **252**, 99-106.
- Nespor, A. A., Dent, M. L., Lukaszewicz, M. J., Dooling, R. J. & Ball, G. F. (1994). Testosterone induction of male-like vocalizations in female budgerigars. *Soc. Neurosci. Abstr.*, **20**, 163.
- Nespor, A. A. (2000). Comparative neuroendocrine mechanisms mediating sex differences in reproductive and vocal behavior and the related brain regions in songbirds, budgerigars and quail. *Avian Poultry Biol. Rev.*, **11**, 45-62.
- Nespor, A. A., Chaves, L., Dooling, R. J. & Ball, G. F. (1998). Assessment of volumetric sex differences in the vocal system of budgerigars by immunocytochemistry for methionine enkephalin and vasoactive intestinal polypeptide. *Soc. Neurosci. Abstr.*, **24**, 1699.
- Nespor, A. A., Lukaszewicz, M. J., Dooling, R. J. & Ball, G. F. (1996). Testosterone induction of male-like vocalizations in female budgerigars (*Melopsittacus undulatus*). *Horm. Behav.*, **30**, 162-169.
- Niemiec, A. J., Raphael, Y. & Moody, D. B. (1994). Return of auditory function following structural regeneration after acoustic trauma: Behavioral measures from quail. *Hear. Res.*, **75**, 209-224.
- Nuechterlein, G. L. & Buitron, D. (1998). Interspecific mate choice by late-courting male western grebes. *Behav. Ecol.*, **9**, 313-321.
- Ofsie, M. S. & Cotanche, D. A. (1996). Distribution of nerve fibers in the basilar papilla of normal and sound-damaged chick cochlea. *J. Comp. Neurol.*, **370**, 281-294.
- Okanoya, K. & Dooling, R. J. (1990). Detection of gaps in noise by budgerigars (*Melopsittacus undulatus*) and zebra finches (*Poephila guttata*). *Hear. Res.*, **50**, 185-192.
- Oommen, M. & Andrews, M. I. (1996). Awakening, roosting and vocalization behaviour of the whitebreasted kingfisher *Halcyon smyrnensis fusca* (Boddaert). *Pavo*, **34**, 43-46.
- Otter, K. (1996). Individual variation in the advertising call of male Northern saw-whet owls. *J. Field Ornithol.*, **398-405**.
- Ottvall, R. (1999). Female corncrake (*Crex crex*) singing in the wild. *J. Ornithol.*, **140**, 453-456.
- Palestis, B. G. & Burger, J. (1999). Individual sibling recognition in experimental broods of common tern chicks. *Anim. Behav.*, **58**, 375-381.
- Panek, M. (1998). Use of call counts for estimating spring density of the grey partridge *Perdix perdix*. *Acta Ornithologica*, **33**, 143-148.
- Patterson, D. K. & Pepperberg, I. M. (1994). A comparative study of human and parrot phonation: Acoustic and articulatory correlates of vowels. *J. Acoust. Soc. Am.*, **96**, 634-648.
- Patterson, D. K. (1998). Acoustic and articulatory correlates of stop consonants in a parrot and a human subject. *J. Acoust. Soc. Am.*, **103**, 2197-2215.
- Pavey, C. R. & Smyth, A. K. (1998). Effects of avian mobbing on roost use and diet of powerful owls, *Ninox strenua*. *Anim. Behav.*, **55**, 313-318.
- Payne, R. B. & Payne, L. L. (1998). Nestling eviction and vocal begging behaviors in Australian glossy cuckoos *Chrysococcyx basalis* and *C. lucidus*. In *Parasitic Birds and their Hosts, Studies in Coevolution* (S. I. Rothstein and S. K. Robinson, eds.). Oxford University Press; Oxford, pp. 152-169.
- Peake, T. M. & McGregor, P. K. (2001). Corncrake *Crex crex* census estimates: A conservation application of vocal individuality. *Anim. Biodiv. Conserv.*, **24**, 81-90.
- Peake, T. M. (1997). Variation in the vocal behaviour of the corncrake *Crex crex*: potential for conservation. Ph.D. Thesis. University of Nottingham.
- Peake, T. M. & McGregor, P. K. (1999). Geographical variation in the vocalisation of the corncrake *Crex crex*. *Ethol. Ecol. Evol.*, **11**, 123-137.
- Peake, T. M. & McGregor, P. K. (1997). Variation in the vocal behaviour of the corncrake *Crex crex*: potential for conservation. *Adv. Ethol.*, **32**, 295.
- Peake, T. M., McGregor, P. K., Smith, K. W., Tyler, G., Gilbert, G. & Green, R. E. (1998). Individuality in corncrake *Crex crex* vocalizations. *Ibis*, **140**, 120-127.
- Pegoraro, K. & Foeger, M. (1995). The "croop" calls of the waldrapp ibis *Geronticus eremita*: their diverse functions in a complex social system. *J. Ornithol.*, **136**, 243-252 (German).
- Pegoraro, K. (1994). Vocal inventory of the waldrapp ibis *Geronticus eremita*. *J. Ornithol.*, **135** (Sonderheft), 168.
- Pelt, T. I. van, Piatt, J. F. & van Vliet, G. B. (1999). Vocalizations of the Kittlitz's murrelet. *Condor*, **101**, 395-397.

- Penteriani, V., Gallardo, M. & Cazassus, H. (2000). Diurnal vocal activity of young eagle owls and its implications in detecting occupied nests. *J. Raptor Res.*, **34**, 232-235.
- Penteriani, V. (2001). The annual and diel cycles of goshawk vocalizations at nest sites. *J. Raptor Res.*, **35**, 24-30.
- Penteriani, V. (1999). Dawn and morning goshawk courtship vocalizations as a method for detecting nest sites. *J. Wildl. Manage.*, **63**, 511-516.
- Pepperberg, I. M. (1999). *The Alex Studies. Cognitive and Communicative Abilities of Grey Parrots*. Harvard University Press; Cambridge, Massachusetts.
- Pepperberg, I. M. (1997). Social influences on the acquisition of human-based codes in parrots and nonhuman primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 157-177.
- Pepperberg, I. M. & Neapolitan, D. M. (1988). Second language acquisition: A framework for studying the importance of input and interaction in exceptional song acquisition. *Ethology*, **77**, 150-168.
- Pepperberg, I. M. (1994). Vocal learning in grey parrots: Possible adaptive constraints on mimicry? *J. Ornithol.*, **135**, 453.
- Pepperberg, I. M. (1994). Vocal learning in grey parrots (*Psittacus erithacus*): Effects of social interaction, reference, and context. *Auk*, **111**, 300-313.
- Pepperberg, I. M. (1992). What studies on song learning can teach us about playback experiments. In *Playback and Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 45-57.
- Pepperberg, I. M. (1990). Learning to communicate: the effects of social interaction. In *Perspectives in Ethology, Vol. 9* (P. Bateson & P. H. Klopfer, eds.). Plenum; New York, pp. 119-164.
- Pepperberg, I. M., Gardiner, L. L. & Luttrell, L. J. (1999). Limited contextual vocal learning in the grey parrot (*Psittacus erithacus*): The effect of interactive co-viewers on videotaped instruction. *J. Comp. Psychol.*, **113**, 158-171.
- Pepperberg, I. M., Sandefer, R. M., Noel, D. A. & Ellsworth, C. P. (2000). Vocal learning in the grey parrot (*Psittacus erithacus*): effects of species identity and number of trainers. *J. Comp. Psychol.*, **114**, 371-380.
- Pepperberg, I. M., Naughton, J. R. & Banta, P. A. (1998). Allospecific vocal learning by grey parrots (*Psittacus erithacus*): A failure of videotaped instruction under certain conditions. *Behav. Processes*, **42**, 139-158.
- Pepperberg, I. M. (1993). A review of the effects of social interaction on vocal learning in African grey parrots *Psittacus erithacus*. *Neth. J. Zool.*, **43**, 104-124.
- Pepperberg, I. M. (1988). Comprehension of "absence" by an African grey parrot: learning with respect to questions of same/different. *J. Exp. Anal. Behav.*, **50**, 553-564.
- Pepperberg, I. M. (1988). The importance of social interaction and observation in the acquisition of communicative competence: possible parallels between avian and human learning. In *Social Learning: A Comparative Approach* (T. T. Zentall & B. G. Galef, Jr., eds). Erlbaum; Hillsdale, N. J., pp. 279-299.
- Pizzari, T. & Birkhead, T. R. (2001). For whom does the hen cackle? The function of postoviposition cackling. *Anim. Behav.*, **61**, 601-607.
- Plummer, T. K. & Striedter, G. F. (2000). Auditory responses in the vocal motor system of budgerigars. *J. Neurobiol.*, **42**, 79-94.
- Poganiatz, I. & Wagner, H. (2001). Sound-localization experiments with barn owls in virtual space: influence of broadband interaural level difference on head-turning behavior. *J. Comp. Physiol. A.*, **187**, 225-233.
- Poje, C. P., Sewell, D. A. & Saunders, J. C. (1995). The effects of exposure to intense sound on the DC endocochlear potential in the chick. *Hear. Res.*, **82**, 197-204.
- Pomeroy, D. E. (1993). Song in the lives of three common birds in Uganda (*Streptopelia semitorquata*, *Turdus pelios*, *Camaroptera brachyura*). In *Koninklijk Museum voor Midden Afrika Tervuren Belgie Annalen Zoologische Wetenschappen, Vol. 268. Birds and the African Environment* (R. T. Wilson, ed). Royal Museum for Central Afrika; Tervuren, Belgium, pp. 447-452.
- Powell, E. F., Dooling, R. J. & Farabaugh, S. M. (1992). Development of vocal learning in the budgerigar. *Soc. Neurosci. Abstr.*, **18**, 529.
- Powell, E. F. (1993). *Perception of developing vocalizations in the budgerigar (Melopsittacus undulatus)*. M.S. thesis, University of Maryland, College Park.
- Powell, E. F., Dooling, R. J. & Larsen, O. N. (1994). Spectral differences in calls produced by the budgerigar in air and helium. *Soc. Neurosci. Abstr.*, **20**, 163.
- Proctor, L. & Konishi, M. (1992). Responses of cells in an auditory thalamic nucleus of the barn owl to sound localization cues. *Soc. Neurosci. Abstr.*, **18**, 840.
- Puglisi, L., Cima, O. & Baldaccini, N. E. (1997). A study of the seasonal booming activity of the bittern

- Botaurus stellaris*; what is the biological significance of the booms? *Ibis*, **139**, 638-645.
- Pytte, C. & Ficken, M. S. (1994). Aerial display sounds of the black-chinned hummingbird. *Condor*, **96**, 1088-1091.
- Rabatsky, A. M. (1997). Responses of two closely related rail species, *Rallus longirostris* and *Rallus elegans*, to conspecific and heterospecific calls. *Fla. Sci.*, **60**, 16-20.
- Radell, P. L. & Gottlieb, G. (1992). Developmental intersensory interference: Augmented prenatal sensory experience interferes with auditory learning in duck embryos. *Dev. Psychol.*, **28**, 795-803.
- Raphael, Y., Wang, Y. & Lee, M. K. (1994). Intercellular contacts between chick stereocilia after acoustic overstimulation. *Hear. Res.*, **73**, 85-91.
- Ratcliffe, N., Vaughan, D., Whyte, C. & Shepherd, M. (1998). Development of playback census methods for storm petrels *Hydrobates pelagicus*. *Bird Study*, **45**, 302-312.
- Ratcliffe, L. & Weisman, R. G. (1992). Pitch processing strategies in birds: A comparison of laboratory and field studies. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 211-223.
- Rebbeck, M. (1996). A pilot study for recognition of individual nightjars. *Bioacoustics*, **6**, 306.
- Rebbeck, M., Corrick, R., Eaglestone, B. & Stainton, C. (2001). Recognition of individual European nightjars *Caprimulgus europaeus* from their song. *Ibis*, **143**, 468-475.
- Redondo, T. (1999). Manipulative begging by parasitic cuckoo nestlings and paradoxical host behaviour. *Trends Ecol. Evol.*, **14**, 107.
- Redpath, S. M. (1994). Censusing tawny owls *Strix aluco* by the use of imitation calls. *Bird Study*, **41**, 192-198.
- Redpath, S. M., Appleby, B. M. & Petty, S. J. (2000). Do male hoots betray parasite loads in tawny owls? *J. Avian Biol.*, **31**, 457-462.
- Reid, J. A., Horn, R. B. & Forsman, D. E. (1999). Detection rates of spotted owls based on acoustic-lure and live-lure surveys. *Wildl. Soc. Bull.*, **27**, 986-990.
- Revilla, V., Revilla, R. & Fernandez-Lopez, A. (1999). A comparative study of the beta-adrenoceptors in higher song nuclei of birds. *Neurosci. Lett.*, **271**, 9-12.
- Richard-Yris, M. A. & Wauters, A. M. (2001). Maternal food calling in domestic hens. *Adv. Ethol.*, **36**, 250-251.
- Richter, C.-P., Sauer, G., Hoidis, S. & Klinke, R. (1996). Development of activity patterns in auditory nerve fibres of pigeons. *Hear. Res.*, **95**, 77-86.
- Rigby, L. L., Kubke, M. F. & Carr, C. E. (1995). Distribution of SV2 during development of the brainstem of the barn owl. *Am. Zool.*, **35**, 101A.
- Ristau, C. A., Kranson, R., Leone, D. & Seidel, K. (1997). Cognitive aspects of plovers' responses to acoustic playback of chick calls. *Adv. Ethol.*, **32**, 95.
- Robbins, M. B., Ridgely, R. S. & Cardiff, S. W. (1994). Voice, plumage and natural history of Anthony nightjar (*Caprimulgus anthonyi*). *Condor*, **96**, 224-228.
- Roberts, T. F., Cookson, K. K., Heaton, K. J., Hall, W. S. & Brauth, S. E. (2001). Distribution of tyrosine hydroxylase-containing neurons and fibers in the brain of the budgerigar (*Melopsittacus undulatus*): general patterns and labeling in vocal control nuclei. *J. Comp. Neurol.*, **429**, 436-454.
- Robinson, P. (1991). Broadcast distance of the mutual display call in the emperor penguin. *Behaviour*, **119**, 302-316.
- Robisson, P., Aubin, T. & Brémond, J. C. (1993). Individuality in the voice of the emperor penguin *Aptenodytes forsteri*: adaptation to a noisy environment. *Ethology*, **94**, 279-290.
- Rocha, P. L. E. & Rangel-Salazar, J. L. (2001). Owl occurrence and calling behavior in a tropical rain forest. *J. Raptor Res.*, **35**, 107-114.
- Ross, B. P., Lien, J. & Furness, R. W. (2001). Use of underwater playback to reduce the impact of eiders on mussel farms. *ICES J. Mar. Sci.*, **58**, 517-524.
- Roulin, A. (2001). On the cost of begging vocalization: Implications of vigilance. *Behav. Ecol.*, **12**, 506-512.
- Roulin, A., Koelliker, M. & Richner, H. (2000). Barn owl (*Tyto alba*) siblings vocally negotiate resources. *Proc. Roy. Soc. Lond. B.*, **267**, 459-463.
- Roulin, A. (2001). Food supply differently affects sibling negotiation and competition in the barn owl (*Tyto alba*). *Behav. Ecol. Sociobiol.*, **49**, 514-519.
- Roulin, A. (2001). Screaming as a strategy to reduce the predation risk incurred by begging? *Behaviour*, **138**, 615-627.
- Rowe, M. P., Coss, R. G. & Owings, D. H. (1986). Rattlesnake rattles and burrowing owl hisses: a case of acoustic Batesian mimicry. *Ethology*, **72**, 53-71.
- Rucci, M., Edelman, G. M. & Wray, J. (1999). Adaptation of orienting behavior: from the barn owl to a robotic system. *IEEE Trans. Robot. Automat.*, **15**, 96-110.
- Rucci, M., Wray, J. & Edelman, G. M. (1998). Spatial localization and the refinement of orienting behavior: What can be learned from the barn owl? *Proc. 1998 IEEE Int. Symp. ISIC, CIRA, ISAS*, 253-258.
- Rumpf, M. & Nichelmann, M. (1993). Development of prenatal acoustic interaction in the muscovy duck

- Cairina moschata*. *Br. Poult. Sci.*, **34**, 287-296.
- Rusch, K. M., Pytte, C. L. & Ficken, M. S. (1996). Organization of agonistic vocalizations in black-chinned hummingbirds. *Condor*, **98**, 557-566.
- Ruttledge, R. F. (1993). Prolonged song of collared dove. *Br. Birds*, **86**, 570.
- Ryals, B. M., Dooling, R. J., Westbrook, E., Dent, M. L., MacKenzie, A. & Larsen, O. N. (1999). Avian species differences in susceptibility to noise exposure. *Hear. Res.*, **131**, 71-88.
- Ryals, B. M., Stalford, M. D., Lambert, P. R. & Westbrook, E. W. (1995). Recovery of noise-induced changes in the dark cells of the quail tegmentum vasculosum. *Hear. Res.*, **83**, 51-61.
- Ryals, B. M. & Rubel, E. W. (1988). Hair cell regeneration after acoustic trauma in adult *Coturnix* quail. *Science*, **240**, 1774-1776.
- Saberi, K., Farahbod, H. & Konishi, M. (1998). How do owls localize interaurally phase-ambiguous signals? *Proc. Natl. Acad. Sci. USA*, **95**, 6465-6468.
- Saether, S. A. (1994). Vocalizations of female great snipe *Gallinago media* at the lek. *Ornis Fennica*, **71**, 11-16.
- Saino, N. & Fasola, M. (1996). The function of embryonic vocalization in the little tern (*Sterna albifrons*). *Ethology*, **102**, 265-271.
- Saunders, S. S. & Salvi, R. J. (1993). Psychoacoustics of normal adult chickens: thresholds and temporal integration. *J. Acoust. Soc. Am.*, **94**, 83-90.
- Saunders, S. S., Salvi, R. J. & Miller, K. M. (1995). Recovery of thresholds and temporal integration in adult chickens after high level 525 Hz pure tone exposure. *J. Acoust. Soc. Am.*, **97**, 1150-1164.
- Scanlan, J. (1988). *Analysis of avian "speech": Patterns and production*. Ph.D. dissertation; University College, London.
- Schaefer, M., Ruebsamen, R., Doerrscheidt, G. J. & Knipschild, M. (1992). Setting complex tasks to single units in the avian auditory forebrain. II. Do we really need natural stimuli to describe neuronal response characteristics? *Hear. Res.*, **57**, 231-244.
- Schaeffer, N., Salzer, U. & Wend, D. (1997). The call repertoire of the corncrake *Crex crex*. *Vogelwelt*, **118**, 147-156 (German).
- Schaeffer, N. (1995). Calling behaviour and functions of calls in the corncrake *Crex crex*. *Vogelwelt*, **116**, 141-151 (German).
- Scheich, H. (1990). Representational geometries of telencephalic auditory maps in birds and mammals. In *The Neocortex* (B. L. Finlay, ed.). Plenum Press; New York, pp. 119-136.
- Scherzinger, W. (1990). Comparative study on the vocal repertoire in the genus *Athene* (Strigiformes). *Proc. Int. 100. DO-G-Meeting, Current Topics Avian Biol.* (1988), pp. 89-96.
- Seddon, P. J. & van Heezik, Y. (1993). Parent-offspring recognition in the jackass penguin. *J. Field Ornithol.*, **64**, 27-31.
- Shaw, B. K., Kennedy, G. & Balaban, E. (2000). To crow like a chicken or a quail: species differences in androgen receptor distribution in relation to species differences in an androgen-dependent behavior. *Soc. Neurosci. Abstr.*, **26**.
- Shaw, B. K. (2000). Involvement of a midbrain vocal nucleus in the production of both the acoustic and postural components of crowing behavior in Japanese quail. *J. Comp. Physiol. A.*, **186**, 747-757.
- Shimizu, T. (1998). Conspecific recognition in pigeons (*Columba livia*) using dynamic video images. *Behaviour*, **135**, 43-53.
- Sieber, U. & Nievergelt, B. (1998). Effects of tourism and military activities on the display of black grouse cocks *Tetrao tetrix* in the mire landscape of Schwägälp. *Ornithol. Beob.*, **95**, 81-96.
- Silverin, B., Baillien, M., Foidart, A. & Balthazard, J. (2000). Distribution of aromatase activity in the brain and peripheral tissues of passerine and nonpasserine avian species. *Gen. Comp. Endocrinol.*, **117**, 34-53.
- Skutch, A. F. (1994). The gray-necked wood-rail: Habits, food, nesting, and voice. *Auk*, **111**, 200-204.
- Slabbekoom, H., de Kort, S. & ten Cate, C. (1999). Comparative analysis of perch coo vocalizations in *Streptopelia* doves. *Auk*, **116**, 737-748.
- Slabbekoom, H. & ten Cate, C. (1998). Perceptual tuning to frequency characteristics of territorial signals in collared doves. *Anim. Behav.*, **56**, 847-857.
- Slabbekoom, H. & ten Cate, C. (1998). Multiple parameters in the territorial coo of the collared dove: interactions and meaning. *Behaviour*, **135**, 879-895.
- Slabbekoom, H. & ten Cate, C. (1996). Responses of collared doves to playback of coos. *Behav. Processes*, **38**, 169-174.
- Slabbekoom, H., de Kort, S. & ten Cate, C. (1997). Coo-evolution in *Streptopelia* doves, interspecific and intraspecific aspects. *Adv. Ethol.*, **32**, 132.
- Slabbekoom, H. & ten Cate, C. (1999). Collared dove responses to playback: Slaves to the rhythm. *Ethology*, **105**, 377-392.
- Slabbekoom, H. & ten Cate, C. (1997). Stronger territorial responses to frequency modulated coos in collared doves. *Anim. Behav.*, **54**, 955-965.

- Sleigh, M. J. & Lickliter, R. (1998). Timing of presentation of prenatal auditory stimulation alters auditory and visual responsiveness in Bobwhite quail chicks (*Colinus virginianus*). *J. Comp. Psychol.*, **112**, 153-160.
- Sleigh, M. J. & Lickliter, R. (1997). Augmented prenatal auditory stimulation alters postnatal perception, arousal, and survival in bobwhite quail chicks. *Dev. Psychobiol.*, **30**, 201-212.
- Sleigh, M. J. & Lickliter, R. (1995). Augmented prenatal visual stimulation alters postnatal auditory and visual responsiveness in bobwhite quail chicks. *Dev. Psychobiol.*, **28**, 353-366.
- Sleigh, M. J., Columbus, R. F. & Lickliter, R. (1996). Type of prenatal sensory experience affects prenatal auditory learning in bobwhite quail. *J. Comp. Psychol.*, **110**, 233-242.
- Smith, G. C. & Jones, D. N. (1997). Vocalisations of the marbled frogmouth. I: Descriptions and analysis of sex differences. *Emu*, **97**, 290-295.
- Smith, W. J. & Smith, A. M. (2000). Information about behavior is provided by songs of the striped cuckoo. *Wilson Bull.*, **112**, 491-497.
- Soler M. & Soler, J. J. (1999). Innate versus learned recognition of conspecifics in great spotted cuckoos *Clamator glandarius*. *Anim. Cogn.*, **2**, 97-102.
- Squire, R. (1993). The voice of the young cassowary. *Austral. Bird Watcher*, **15**, 41.
- Stark, R. D., Dodenhoff, D. J. & Johnson, E. V. (1998). A quantitative analysis of woodpecker drumming. *Condor*, **100**, 350-356.
- Stone, J. S. & Cotanche, D. A. (1994). Identification of the timing of S phase and the patterns of cell proliferation during hair cell regeneration in the chick cochlea. *J. Comp. Neurol.*, **341**, 50-67.
- Streidter, G. (1994). The vocal control pathways in budgerigars differ from those in songbirds. *J. Comp. Neurol.*, **343**, 35-56.
- Striedter, G. F. (1994). The vocal control pathways in budgerigars differ from those in songbirds. *J. Comp. Neurol.*, **343**, 35-56.
- Strohmann, B., Schwarz, D. W. F. & Puil, E. (1994). Subthreshold frequency selectivity in avian auditory thalamus. *J. Neurophysiol.*, **71**, 1361-1372.
- Suthers, R. A. & Hector, D. H. (1988). Individual variation in vocal tract resonance may assist oilbirds in recognizing echoes of their own sonar clicks. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum; New York, pp. 87-91.
- Taichun, L., Fenqi, H. & Chunlei, L. (1986). On the call of the Chinese monal (*Lophophorus ihuysii*). *Acta Ecol. Sinica*, **6**, 87-88.
- Takahashi, T. T. & Keller, C. H. (1992). Unmasking of auditory targets and enhancement of selectivity to a sound localization cue by simulated motion in the owl's inferior colliculus. *Soc. Neurosci. Abstr.*, **18**, 842.
- Telford, E. A. (1993). The use of sonographic analysis in identifying individual peregrine falcons *Falco peregrinus*. *J. Raptor Res.*, **27**, 82.
- Terry, A. M. R., McGregor, P. K. & Peake, T. M. (2001). A comparison of some techniques used to assess vocal individuality. *Bioacoustics*, **11**, 169-188.
- Thomassen, H. A. & Povel, G. D. E. (2001). Vocalization as a means to explain the phylogeny and evolution in Indo-Australian swifts and swiftlets (Aves: Apodidae). *J. Morphol.*, **248**, 291.
- Thornhill, R. (1988). The jungle fowl hen's cackle incites male competition. *Verh. Deutsch. Zool. Ges.*, **81**, 145-154.
- Thorstrom, R., Hart, J. & Watson, R. T. (1997). New record, ranging behaviour, vocalization and food of the Madagascar red owl *Tyto soumagnei*. *Ibis*, **139**, 477-481.
- Thumser, N. N. (1993). *Phylogenetic relationships among Spheniscus penguins based on the analysis of vocal and allozyme data*. Ph.D. diss., Univ. of Wisconsin-Milwaukee, Milwaukee, Wisconsin.
- Thumser, N. N., Karron, J. D. & Ficken, M. S. (1996). Interspecific variation in the calls of *Spheniscus penguins*. *Wilson Bull.*, **108**, 72-79.
- Timcke, A. & Bergmann, H.-H. (1994). Seasonally changing bird call: The trill call of male shelducks (*Tadorna tadorna*). *J. Ornithol.*, **135**, 95-100.
- Toaka, M. & Okumura, H. (1989). Individuality of chatter-calls and selective response to the bird's own call in Leach's storm-petrel, *Oceanodroma leucorhoa*. *Jpn. Women's Univ. J.*, **36**, 107-112.
- Tsue, T. T., Watling, D. L., Weisleder, P., Coltrera, M. D. & Rubel, E. W. (1994). Identification of hair cell progenitors and intermitotic migration of their nuclei in the normal and regenerating avian inner ear. *J. Neurosci.*, **14**, 140-152.
- Tubaro, P. L. & Mahler, B. (1998). Acoustic frequencies and body mass in new world doves. *Condor*, **100**, 54-61.
- Tyler, G. A. & Green, R. E. (1996). The incidence of nocturnal song by male corncrakes *Crex crex* is reduced during pairing. *Bird Study*, **43**, 214-219.
- Tyler, G. A., Green, R. E., Stowe, T. J. & Newton, A. V. (1996). Sex differences in the behaviour and

- measurements of corncrakes *Crex crex* in Scotland. *Ringing Migr.*, **17**, 15-19.
- Valentinuzzi, V. S. & Ferrari, E. A. M. (1997). Habituation to sound during morning and night sessions in pigeons (*Columbia livia*). *Physiol. Behav.*, **62**, 1203-1209.
- Valone, T. J. (1996). Food-associated calls as public information about patch quality. *Oikos*, **77**, 153-157.
- Vehrencamp, S. L., Bradbury, J. W. & Gibson, R. M. (1989). The energetic cost of display in male sage grouse. *Anim. Behav.*, **38**, 885-896.
- Venuto, V., Ferraiuolo, V., Bottoni, L. & Massa, R. (2001). Distress call in six species of African *Poicephalus* parrots. *Ethol. Ecol. Evol.*, **13**, 49-68.
- Venuto, V. & Massa, R. (1997). Vocalization structure and its possible function in the brown-headed parrot *Poicephalus cryptoxanthus*. *Bioacoustics*, **8**, 268.
- Vielliard, J. M. E. (1995). The use of bioacoustics for the phylogenetic study of neotropical birds. *Abstracts V Congreso de Ornitología Neotropical, Asuncion* (Sociedad de Biología del Paraguay, ed.); Asuncion, Paraguay, p. 55.
- Vielliard, J. M. E. (1996). The current state of bioacoustical phylogeny. *Bioacoustics*, **6**, 310-311.
- Vielliard, J. M. E. (1994). Bioacoustics and phylogeny among *Amazona* parrots. In *Ornithological Notebook of the XXI International Ornithological Congress* (J. Dittami, W. Bock, M. Taborsky, R. van den Elzen and E. Vogel-Millesi, eds.); Vienna, p. 634.
- Vielliard, J. (1995). Phylogeny of bioacoustic parameters in birds. *Bioacoustics*, **6**, 171-174.
- Vinuela, J. (1997). Laying order affects incubation duration in the black kite (*Milvus migrans*): Counteracting hatching asynchrony? *Auk*, **114**, 192-199.
- Volman, S. F. & Konishi, M. (1989). Spatial selectivity and binaural responses in the inferior colliculus of the great horned owl. *J. Neurosci.*, **9**, 3083-3096.
- Wagner, H. (1993). Sound localization deficits induced by lesions in the barn owl's auditory space map. *J. Neurosci.*, **13**, 371-386.
- Walcott, C., Evers, D., Froehler, M. & Krakauer, A. (1999). Individuality in "yodel" calls recorded from a banded population of common loons, *Gavia immer*. *Bioacoustics*, **10**, 101-114.
- Wallhaeusser, E. & Scheich, H. (1987). Auditory imprinting leads to differential 2-deoxyglucose uptake and dendritic spine loss in the chick rostral forebrain. *Devel. Brain Res.*, **31**, 29-44.
- Wallhausser-Franke, E., Scheich, H. & Langner, G. (1992). Acoustic imprinting does not influence spine frequency in the visual ectostriatum of domestic chicks. *Soc. Neurosci. Abstr.*, **18**, 869.
- Wanker, R., Apcin, J., Jennerjahn, B. & Waibel, B. (1998). Discrimination of different social companions in spectacled parrotlets (*Forpus conspicillatus*): evidence for individual vocal recognition. *Behav. Ecol. Sociobiol.*, **43**, 197-202.
- Wanker, R. (1996). Vocal communication of spectacled parrotlets *Forpus conspicillatus*. *Bioacoustics*, **6**, 312.
- Wanker, R. (1999). Social system and acoustic communication in spectacled parrotlets (*Forpus conspicillatus*). In *Communication and Social Ethology* (R. F. Oliveira, ed.). ASAB Summer Meeting, p. 2.
- Warchol., M. E. & Corwin, J. T. (1993). Supporting cells in avian vestibular organs proliferate in serum free culture. *Hear. Res.*, **71**, 28-36.
- Warham, J. (1988). Vocalizations of *Procellaria* petrels. *Notornis*, **35**, 169-183.
- Warren, D. K., Patterson, D. K. & Pepperberg, I. M. (1996). Mechanisms of American English vowel production in a grey parrot (*Psittacus erithacus*). *Auk*, **113**, 41-58.
- Watson, G. (1992). The call of the topknot pigeon *Lopholaimus antarcticus*. *Sunbird*, **22**, 43-45.
- Watson, M. & Asoyama, S. (2001). Dispersion, habitat use, hunting behavior, vocalizations, and conservation status of the New Guinea harpy eagle (*Harpyopsis novaeguineae*). *J. Raptor Res.*, **35**, 235-239.
- Wauters, A. M. & Richard-Yris, M. A. (2002). Mutual influence of the maternal hen's food calling and feeding behavior on the behavior of her chicks. *Dev. Psychobiol.*, **41**, 25-36.
- Wauters, A. M. & Richard-Yris, M. A. (2001). Experience modulates emission of food calls in broody hens. *Compt. Rendus Acad. Sci. III*, **324**, 1021-1027.
- Wauters, A. M., Richard-Yris, M. A., Richard, J. P. & Foraste, M. (1999). Internal and external factors modulate food-calling in domestic hens. *Anim. Cognit.*, **2**, 1-10.
- Wauters, A. M., Richard-Yris, M. A., Pierre, J. S., Lunel, C. & Richard, J. P. (1999). Influence of chicks and food quality on food calling in broody domestic hens. *Behaviour*, **136**, 919-933.
- Weary, D. M. (1992). Bird song and operant experiments: a new tool to investigate song perception. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 201-210.
- Weisleder, P. & Rubel, E. W. (1993). Hair cell regeneration after streptomycin toxicity in the avian vestibular epithelium. *J. Comp. Neurol.*, **331**, 97-110.
- Welham, C. V. J. & Bertram, D. F. (1993). The relationship between previous meal size and begging vocalizations of nestling rhinoceros auklets *Cerorhinca monocerata*. *Anim. Behav.*, **45**, 827-829.
- Whalen, D. M. & Watts, B. D. (1999). The influence of audio-lures on capture patterns of migrant northern saw-

- whet owls. *J. Field Ornithol.*, **70**, 163-168.
- Whiten, A. & Ham, R. (1992). On the nature and evolution of imitation in the animal kingdom: Reappraisal of a century of research. *Adv. Study Behav.*, **21**, 239-283.
- Whitford, P. C. (1993). Use of whistled juvenile-form calls by adult Canada geese. *Passenger Pigeon*, **55**, 201-203.
- Whittaker, A. (2001). Notes on the poorly-known Buckley's forest falcon *Micrastur buckleyi* including voice, range and first Brazilian records. *Bull. Brit. Ornithol. Club*, **121**, 198-208.
- Wild, J. M. (1994). Visual and somatosensory inputs to the avian song system via nucleus uvulaeformis (uva) and a comparison with projections of a similar thalamic nucleus in a non-songbird, *Columba livia*. *J. Comp. Neurol.*, **349**, 512-535.
- Wild, J. M., Karten, H. J. & Frost, B. J. (1993). Connections of the auditory forebrain in the pigeon (*Columba livia*). *J. Comp. Neurol.*, **337**, 32-62.
- Wild, J. M. & Arends, J. J.A. (1987). A respiratory-vocal pathway in the brainstem of the pigeon. *Brain Res.*, **407**, 191-194.
- Wild, J. M. (1987). Nuclei of the lateral lemniscus project directly to the thalamic auditory nuclei in the pigeon. *Brain Res.*, **408**, 303-307.
- Wilkins, H. D. & Ritchison, G. (1999). Drumming and tapping by red-bellied woodpeckers: Description and possible causation. *J. Field Ornithol.*, **70**, 578-586.
- Wirminghaus, J. O., Downs, C. T., Symes, C. T., Dempster, E. & Perrin, M. R. (2000). Vocalizations and behaviour of the Cape parrot *Poicephalus robustus* (Psittaciformes: Psittacidae). *Durban Mus. Novit.*, **25**, 12-17.
- Woodcock, M. B., Latour, M. A. & Pajor, E. A. (2001). Variation in hen vocalizations during pre-hatch, hatch and post-hatch. *J. Dairy Sci.*, **84**, Suppl. 1., 279-280.
- Wright, T. F. (1996). Regional dialects in the contact call of a parrot. *Proc. R. Soc. Lond. B.*, **263**, 867-872.
- Wright, T. F. & Wilkinson, G. S. (2001). Population genetic structure and vocal dialects in an amazon parrot. *Proc. Roy. Soc. Lond. B.*, **268**, 609-616.
- Wright, T. F. & Dorin, M. (2001). Pair duets in the yellow-naped amazon (Psittaciformes: *Amazona auropalliata*): Responses to playbacks of different dialects. *Ethology*, **107**, 111-124.
- Waas, J. R. (1995). Social stimulation and reproductive schedules: does the acoustic environment influence the egg-laying schedule in penguin colonies? In *Penguins: Ecology and Management* (P. Dann, I. Norman and P. Reilly, eds.). Surrey Beatty; Sydney, pp. 111-137.
- Waas, J. R., Caulfield, M., Colgan, P. W. & Boag, P. T. (2000). Colony sound facilitates sexual and agonistic activities in royal penguins. *Anim. Behav.*, **60**, 77-84.
- Yates, G. K., Manley, G. A. & Koppl, C. (2000). Rate-intensity functions in the emu auditory nerve. *J. Acoust. Soc. Am.*, **107**, 2143-2154.
- Yazaki, Y., Matsushima, T. & Aoki, K. (1997). Stimulation elicits the chick crowing with testosterone in Japanese quail chicks. *Zool. Sci.*, **14**, 227-231.
- Yazaki, Y., Matsushima, T. & Aoki, K. (1999). Testosterone modulates stimulation-induced calling behavior in Japanese quails. *J. Comp. Physiol. A.*, **184**, 13-19.
- Yazaki, Y., Matsushima, T. & Aoki, K. (1997). Testosterone modulates calling behavior in Japanese quail chicks. *Zool. Sci.*, **14**, 219-225.
- Young, L., Garson, P. J. & Kaul, R. (1987). Calling behaviour and social organization in the cheer pheasant: implications for survey technique. *J. World Pheasant Assoc.*, **12**, 30-43.
- Zimmerman, P. H. & Koene, P. (1998). The effect of frustrative nonreward on vocalisations and behaviour in the laying hen, *Gallus gallus domesticus*. *Behav. Processes*, **44**, 73-79.
- Zimmermann, P. H., Koene, P. & van Hooff, J. A. R. M. (2000). The vocal expression of feeding motivation and frustration in the domestic laying hen, *Gallus gallus domesticus*. *Appl. Anim. Behav. Sci.*, **69**, 265-273.
- Zimmermann, P. H., Koene, P. & van Hooff, J. A. R. A. M. (2000). Thwarting of behaviour in different contexts and the gackel-call in the laying hen. *Appl. Anim. Behav. Sci.*, **69**, 255-264.
-

NON-PRIMATE MAMMALS

- Abrams, R. M., Gerhardt, K. J., Griffiths, S. K., Huang, X. & Antonelli, P. J. (1998). Intrauterine sounds in sheep. *J. Sound Vibr.*, **216**, 539-542.
- Acharya, L. & Fenton, M. B. (1992). Echolocation behavior of vespertilionid bats *Lasiurus cinereus* and *Lasiurus borealis* attacking airborne targets including arctiid moths. *Can. J. Zool.*, **70**, 1292-1298.
- Acharya, L. (1992). Are ears valuable to moths flying around lights? *Bat Res. News*, **33**, 47.
- Acharya, L. & Mcneil, J. N. (1998). Predation risk and mating behavior: the responses of moths to bat-like

- ultrasound. *Behav. Ecol.*, **9**, 552-558.
- Ackers, S. H. & Slobodchikoff, C. N. (1999). Communication of stimulus size and shape in alarm calls of Gunnison's prairie dogs, *Cynomys gunnisoni*. *Ethology*, **105**, 149-162.
- Adams, Joe C. (1995). Sound stimulation induces Fos-related antigens in cells with common morphological properties throughout the auditory brainstem. *J. Comp. Neurol.*, **361**, 645-668.
- Ahlen, I. & Baagoe, H. J. (2001). The common pipistrelle split into two species. *Fauna och Flora*, **96**, 71-78.
- Ahlen, I. & Baagoe, H. J. (1999). Use of ultrasound detectors for bat studies in Europe: experiences from field identification, surveys, and monitoring. *Acta Chiropterologica*, **1**, 137-150.
- Aitkin, L. M. (1990). Coding for auditory space. In *Information Processing in Mammalian Auditory and Tactile Systems* (M. Rowe & L. M. Aitkin, eds.). Wiley-Liss; New York, pp. 169-178.
- Akamatsu, T., Wang, D., Wang, K. & Naito, Y. (2000). A method for individual identification of echolocation signals in free-ranging finless porpoises carrying data loggers. *J. Acoust. Soc. Am.*, **108**, 1353-1356.
- Akamatsu, T., Hatakeyama, Y., Kojima, T. & Soeda, H. (1994). Echolocation rates of two harbour porpoises (*Phocoena phocoena*). *Mar. Mammal Sci.*, **10**, 401-411.
- Akamatsu, T., Narita, Y. & Matsu-Ura, T. (1998). Real-time click interval acquisition system for dolphin echolocation signals. *Bioacoustics*, **9**, 225.
- Akamatsu, T., Wang, D., Nakamura, K. & Wang, K. (1998). Echolocation range of captive and free-ranging baiji (*Lipotes vexillifer*), finless porpoise (*Neophocaena phocaenoides*), and bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **104**, 2511-2516.
- Alcuri, G. & Busnel, R.-G. (1989). Sonar clicks and whistling signals are made by the same acoustical source in the fresh-water Amazonian dolphin *Sotalia fluviatilis* Gervais and Deville. *C. R. Hebd. Seances Acad. Sci. (III), Paris*, **308**, 379-384 (French).
- Alcuri, G. & Busnel, R.-G. (1990). Echolocation and communication signals for the case of a freshwater dolphin: functional approach. *Colloque Physique, C-2*, 627-630 (French).
- Aldridge, H. D. J. N. & Rautenbach, I. L. (1987). Morphology, echolocation and resource partitioning in insectivorous bats. *J. Anim. Ecol.*, **56**, 763-778.
- Algers, B., Rojanasthien, S. & Uvnaes-Moberg, K. (1990). The relation between teat stimulation, oxytocin release and grunting rate in the sow. *Appl. Anim. Behav. Sci.*, **26**, 267-276.
- Alkon, P. U., Cohen, Y. & Jordan, P. A. (1989). Towards an acoustic biotelemetry system for animal behavior studies. *J. Wildl. Manage.*, **53**, 658-662.
- Altes, R. A. (1995). Signal processing for target recognition in biosonar. *Neural Networks*, **8**, 1275-1295.
- Altes, R. A. (1989). An interpretation of cortical maps in echolocating bats. *J. Acoust. Soc. Am.*, **85**, 934-942.
- Amundin, M. (1990). Sound production in Odontocetes with emphasis on the harbour porpoise *Phocoena phocoena*. Ph.D. thesis. Stockholm University.
- Amundin, M. (1991). Helium effects on the click frequency spectrum of the harbor porpoise, *Phocoena phocoena*. *J. Acoust. Soc. Am.*, **90**, 53-59.
- Anderson, M. E. & Racey, P. A. (1993). Discrimination between fluttering and non-fluttering moths by brown long-eared bats, *Plecotus auritus*. *Anim. Behav.*, **46**, 1151-1155.
- Anderson, P. K. & Barclay, R. M. R. (1995). Acoustic signals of solitary dugongs: physical characteristics and behavioral correlates. *J. Mammal.*, **76**, 1226-1237.
- Ando, R., Kume, H., Sakurada, S., Kawamura, S., Yonezawa, A., Sakurada, T. & Kisara, K. (1993). Vocalization response induced by arterial injection of ciprofloxacin in guinea pigs. *Jpn. J. Pharmacol.*, **61** (Suppl.), 304
- Andre, M. & Kamminga, C. (2000). Rhythmic dimension in the echolocation click trains of sperm whales: A possible function of identification and communication. *J. Mar. Biol. Ass. UK*, **80**, 163-169.
- Andre, M., Kamminga, C. & Ketten, D. (1998). Are low frequency sounds a marine hearing hazard: a case study in the Canary Islands. *Bioacoustics*, **9**, 220.
- Andre, M., Larsen, H. H. & Gjerlov, P. (1996). A tool for the study of sperm whale underwater behaviour. *European Research on Cetaceans*, **9**, 42-45.
- Appleby, M. C., Weary, D. M., Taylor, A. A. & Illmann, G. (1999). Vocal communication in pigs: Who are nursing piglets screaming at? *Ethology*, **105**, 881-892.
- Arch-Tirado, E., McCowan, B., Saltijeral-Oaxaca, J., Zarco de Coronado, L. & Licona-Bonilla, J. (2000). Development of isolation-induced vocal behavior in normal-hearing and deafened Guinea pig infants. *J. Speech Language Hear. Res.*, **43**, 432-440.
- Arnold, S. & Burkard, R. (2000). Studies of interaural attenuation to investigate the validity of a dichotic difference tone response recorded from the inferior colliculus in the chinchilla. *J. Acoust. Soc. Am.*, **107**, 1541-1547.
- Aroyan, J. L., Cranford, T. W., Kent, J. & Norris, K. S. (1992). Computer modeling of acoustic beam formation in *Delphinus delphis*. *J. Acoust. Soc. Am.*, **92**, 2539-2545.
- Asano, F., Suzuki, Y. & Sone, T. (1990). Role of spectral cues in median plane localization. *J. Acoust. Soc. Am.*,

- Asselin, S., Hammill, M. O. & Barrette, C. (1993). Underwater vocalizations of ice breeding gray seals. *Can. J. Zool.*, **71**, 2211-2219.
- Au, W. W. L. & Turl, C. W. (1991). Material composition discrimination of cylinders at different aspect angles by an echolocating dolphin. *J. Acoust. Soc. Am.*, **89**, 2448-2451.
- Au, W. W. L., Kastelein, R. A., Rippe, T. & Schooneman, N. M. (1999). Transmission beam pattern and echolocation signals of a harbor porpoise (*Phocoena phocoena*). *J. Acoust. Soc. Am.*, **106**, 3699-3705.
- Au, W. W. L., Pawloski, J. L., Nachtigall, P. E., Blonz, M. & Gisner, R. C. (1995). Echolocation signals and transmission beam pattern of a false killer whale (*Pseudorca crassidens*). *J. Acoust. Soc. Am.*, **98**, 59-69.
- Au, W. W. L., Penner, R. H. & Turl, C. W. (1987). Propagation of beluga echolocation signals. *J. Acoust. Soc. Am.*, **82**, 807-813.
- Au, W. W. L. & Nachtigall, P. E. (1994). Dolphin acoustics and echolocation. *Acoustics Bull.*, **19**, 19-26.
- Au, W. W. L. (1997). Echolocation in dolphins, with a dolphin-bat comparison. *Bioacoustics*, **8**, 137-162.
- Au, W. W. L. (1996). Acoustic reflectivity of a dolphin. *J. Acoust. Soc. Am.*, **99**, 3844-3848.
- Au, W. W. L. (1992). Application to the reverberation-limited form of the sonar equation to dolphin echolocation. *J. Acoust. Soc. Am.*, **92**, 1822-1826.
- Au, W. W. L. & Moore, P. W. B. (1988). The perception of complex echoes by an echolocating dolphin. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Publishing Corp.; New York, pp. 295-299.
- Au, W. W. L. & Moore, P. W. B. (1990). Critical ratio and critical bandwidth for the Atlantic bottlenosed dolphin. *J. Acoust. Soc. Am.*, **88**, 1635-1638.
- Au, W. W. L., Anderson, L. N., Rasmussen, R., Roitblat, H. L. & Nachtigall, P. E. (1995). Neural network modelling of a dolphin's sonar discrimination capabilities. *J. Acoust. Soc. Am.*, **98**, 43-50.
- Au, W. W. L., Moore, P. W. B. & Pawloski, D. A. (1988). Detection of complex echoes in noise by an echolocating dolphin. *J. Acoust. Soc. Am.*, **83**, 662-668.
- Au, W. W. L., Nachtigall, P. E. & Pawloski, J. L. (1997). Acoustic effects of the ATOC signal (75 Hz, 195 dB) on dolphins and whales. *J. Acoust. Soc. Am.*, **101**, 2973-2977.
- Au, W. W. L. (1992). *The Sonar of Dolphins*. Springer-Verlag; New York.
- Au, W. W. L. (1997). The dolphin echolocation system. *J. Acoust. Soc. Am.*, **102**, 3077.
- Au, W. W. L. (1993). *The sonar of dolphins*. Springer Verlag New York Inc.; New York.
- Au, W. W. L., Popper, A. N. & Fay, R. R., eds. (2000). *Hearing by Whales and Dolphins*. Springer Handbook of Auditory Research, Volume 12. Springer; New York.
- Au, W. W. L., Mobley, J., Burgess, W. C., Lammers, M. O. & Nachtigall, P. E. (2000). Seasonal and diurnal trends of chorusing humpback whales wintering in waters off western Maui. *Mar. Mamm. Sci.*, **16**, 530-544.
- Au, W. W. L. (1994). Comparison of sonar discrimination: dolphin and an artificial neural network. *J. Acoust. Soc. Am.*, **95**, 2728-2735.
- Au, W. W. L. & Herzog, D. L. (1997). Measurement of the echolocation signals of the Atlantic spotted dolphin *Stenella frontalis* in the waters off the Grand Bahamas. *J. Acoust. Soc. Am.*, **101**, 3137-3138.
- Au, W. L., Moore, P. W. B. & Pawloski, D. (1986). Echolocation transmitting beam of the Atlantic bottlenose dolphin. *J. Acoust. Soc. Am.*, **80**, 668-691.
- Au, W. W. L., Lammers, M. O., Nachtigall, P. E., Mobely, J. & Burgess, W. C. (2000). Characteristics of chorusing sounds of humpback whales wintering in waters off western Maui. *J. Acoust. Soc. Am.*, **108**, 2612.
- Au, W. W. L., Rasmussen, M. H. & Miller, L. (2000). Echolocation signals of wild white beaked dolphins measured with a four-hydrophone short base line array in real-time. *J. Acoust. Soc. Am.*, **108**, 2583.
- Aubauer, R. & Au, W. W. L. (1998). Phantom echo generation: A new technique for investigating dolphin echolocation. *J. Acoust. Soc. Am.*, **104**, 1165-1170.
- Aubauer, R., Lammers, M. O. & Au, W. W. L. (2000). One-hydrophone method of estimating distance and depth of phonating dolphins in shallow water. *J. Acoust. Soc. Am.*, **107**, 2744-2749.
- Aubauer, R., Au, W. W. L., Nachtigall, P. E., Pawloski, D. A. & DeLong, C. M. (2000). Classification of electronically generated phantom targets by an Atlantic bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **107**, 2750-2754.
- Audet, D., Engstrom, M. D. & Fenton, M. B. (1993). Morphology, karyology and echolocation calls of Rhogeessa (Chiroptera, Vespertilionidae) from the Yucatan Peninsula. *J. Mammal.*, **74**, 498-502.
- Awbery, F. T., Thomas, J. T. & Kastelein, R. A. (1988). Low-frequency underwater hearing sensitivity in belugas, *Delphinapterus leucas*. *J. Acoust. Soc. Am.*, **84**, 2273-2275.
- Backoff, P. M., Palombi, P. S. & Caspary, D. M. (1999). Gamma-aminobutyric acidergic and glycinergic inputs shape coding of amplitude modulation in the chinchilla cochlear nucleus. *Hear. Res.*, **134**, 77-88.

- Bagley, R. S., Stefanacci, J. D., Hansen, B. & Kornegay, J. N. (1993). Dysphonia in two dogs with cranial cervical intervertebral disk extrusion. *J. Am. Anim. Hosp. Assoc.*, **29**, 557-559.
- Bain, D. E. (1986). Acoustic behavior of Orcinus: sequences, periodicity, behavioral correlates, and an automated technique for call classification. In *Behavioral Biology of Killer Whales* (B. C. Kirkevold & J. S. Lockard, eds.). Alan R. Liss, Inc.; New York, pp. 335-371.
- Bain, D. E. (1988). *An evaluation of evolutionary processes: studies of natural selection, dispersal, and cultural evolution in killer whales (Orcinus orca)*. Ph.D. thesis. University of California; Santa Cruz.
- Bain, D. E. & Dahlheim, M. E. (1994). Effects of masking noise on detection thresholds of killer whales. In *Marine Mammals and the Exxon Valdez* (T. R. Loughlin, ed.). Academic Press; San Diego, pp. 243-256.
- Baker, M. W. D. & Croft, D. B. (1993). Vocal communication between the mother and young of the eastern grey kangaroo, *Macropus giganteus*, and the red kangaroo, *M. rufus* (Marsupialia, Macropodidae). *Aust. J. Zool.*, **41**, 257-272.
- Baker, C. M. (1998). Communication in marsh mongooses (*Atilax paludinosus*): Anal gland secretion and scat discrimination in adults, and individual variation in vocalisations of juveniles. *S. Afr. J. Zool.*, **33**, 49-51.
- Balcombe, J. P. & Fenton, M. B. (1988). The communication role of echolocation calls in vespertilionid bats. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 625-628.
- Balcombe, J. & Fenton, M. B. (1988). Eavesdropping by bats: the influence of echolocation call design and foraging strategies. *Ethology*, **79**, 158-166.
- Ballard, K. A. & Kovacs, K. M. (1995). The acoustic repertoire of hooded seals (*Cystophora cristata*). *Can. J. Zool.*, **73**, 1362-1374.
- Barclay, R. M. R. (1999). Bats are not birds - A cautionary note on using echolocation calls to identify bats: A comment. *J. Mammal.*, **80**, 290-296
- Barclay, R. M. R., Fullard, J. M. & Jacobs, D. S. (1999). Variation in the echolocation calls of the hoary bat (*Lasiurus cinereus*): influence of body size, habitat structure, and geographic location. *Can. J. Zool.*, **77**, 530-534.
- Barclay, R. M. R. & Brigham, R. M. (1994). Constraints on optimal foraging: a field-test of prey discrimination by echolocating insectivorous bats. *Anim. Behav.*, **48**, 1013-1021.
- Barfield, C. H., Tang-Martinez, Z. & Trainer, J. M. (1994). Domestic calves (*Bos taurus*) recognize their own mothers by auditory cues. *Ethology*, **97**, 257-264.
- Barlow, K. E. (1997). The diets of two phonic types of the bat *Pipistrellus pipistrellus* in Britain. *J. Zool., Lond.*, **243**, 597-609.
- Barlow, J., Oleson, E. & McDonald, M. (2000). Deep, harmonic moans associated with Bryde's whales in several locations worldwide. *J. Acoust. Soc. Am.*, **108**, 2634.
- Barlow, K. E. & Jones, G. (1997). Differences in songflight calls and social calls between two phonic types of the vespertilionid bat *Pipistrellus pipistrellus*. *J. Zool., Lond.*, **241**, 315-324.
- Barlow, K. E. & Jones, G. (1999). Roosts, echolocation calls and wing morphology of two phonic types of *Pipistrellus pipistrellus*. *Z. Saeugetierkd.*, **64**, 257-268.
- Barlow, K. E. & Jones, G. (1997). Function of pipistrelle social calls: field data and a playback experiment. *Anim. Behav.*, **53**, 991-999.
- Barrett-Lennard, L. G., Ford, J. K. B. & Heise, K. A. (1996). The mixed blessing of echolocation: differences in sonar use by fish-eating and mammal-eating killer whales. *Anim. Behav.*, **51**, 553-565.
- Barrett-Lennard, L. G. (1992). *Echolocation in wild killer whales (Orcinus orca)*. M.Sc. thesis. University of British Columbia.
- Barros, N. B. & Myrberg, A. A. (1987). Prey detection by means of passive listening in bottlenose dolphins (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **82**, Suppl. 65.
- Barshan, B. & Kuc, R. (1992). Bat-like mobile robot for tracking a moving obstacle. *Proc. SPIE (The International Society for Optical Engineering)*, **1613**, 46-57.
- Bartsch, E. & Schmidt, S. (1993). Psychophysical frequency modulation thresholds in a FM-bat, *Tadarida brasiliensis*. *Hear. Res.*, **67**, 128-138.
- Bazua-Duran, C. & Au, W. (2000). Geographic variations in the whistle repertoire of Hawaiian spinner dolphins (*Stenella longirostris*). *J. Acoust. Soc. Am.*, **108**, 2635.
- Beedholm, K. & Moehl, B. (1998). Bat sonar: an alternative interpretation of the 10-ns jitter result. *J. Comp. Physiol. A.*, **182**, 259-266.
- Behrend, O., Koessl, M. & Schuller, G. (1999). Binaural influences on Doppler shift compensation of the horseshoe bat *Rhinolophus rouxi*. *J. Comp. Physiol. A.*, **185**, 529-538.
- Behrend, O. & Schuller, G. (2000). The central acoustic tract and audio-vocal coupling in the horseshoe bat, *Rhinolophus rouxi*. *Eur. J. Neurosci.*, **12**, 4268-4280.

- Behrmann, G. (1993). How do toothed whales (Odontoceti) protect their inner ear against pressure waves? *Lutra*, **36**, 30-38.
- Beitel, R. E., Snyder, R. L., Schreiner, C. E., Raggio, M. W. & leake, P. A. (2000). Electrical cochlear stimulation in the deaf cat: Comparisons between psychophysical and central auditory neuronal thresholds. *J. Neurophysiol.*, **83**, 2145-2162.
- Beitel, R. A. & Kaas, J. H. (1993). Effects of bilateral and unilateral ablation of auditory cortex in cats on the unconditioned head orienting response to acoustic stimuli. *J. Neurophysiol.*, **70**, 351-370.
- Bellwood, J. J. & Morris, G. K. (1987). Bat predation and its influence on calling behavior in Neotropical katydids. *Science*, **238**, 64-67.
- Belwood, J. J. (1988). Foraging behavior, prey selection, and echolocation. *NATO Adv. Study Inst. Ser. A. Life Sci.*, **156**, 601-605.
- Ben-Ari, E. T. (1999). A throbbing in the air: The discovery of infrasonic communication among elephants has given researchers a whole new way of hearing things. *Bioscience*, **49**, 353-359.
- Bender, D. J., Bayne, E. M. & Brigham, R. M. (1996). Lunar condition influences coyote (*Canis latrans*) howling. *Am. Midl. Nat.*, **136**, 413-417.
- Benyon, P. & Rasa, O. A. E. (1989). Do dwarf mongooses have a language? Warning vocalisations transmit complex information. *S. Afr. J. Sci.*, **85**, 447-450.
- Berkowitz, A. & Suga, N. (1989). Neural mechanisms of ranging are different in two species of bats. *Hear. Res.*, **41**, 255-264.
- Bialy, M., Rydz, M. & Kaczmarek, L. (2000). Precontact 50 kHz vocalizations in male rats during acquisition of sexual experience. *Behav. Neurosci.*, **114**, 983-990.
- Binns, K. E., Withington, D. J. & Keating, M. J. (1995). The developmental emergence of the representation of auditory azimuth in the external nucleus of the inferior colliculus of the guinea-pig: the effects of visual and auditory deprivation. *Dev. Brain Res.*, **85**, 14-24.
- Binns, K. E., Grant, S., Withington, D. J. & Keating, M. J. (1992). A topographic representation of auditory space in the external nucleus of the inferior colliculus of the guinea-pig. *Brain. Res.*, **589**, 231-242.
- Binns, K. E., Withington, D. J. & Keating, M. J. (1992). Post-crucial period effects of auditory experience and deprivation on the guinea pig superior collicular auditory space map. *Eur. J. Neurosci.*, **4**, 1333-1342.
- Birch, S. (1998). Dolphin sonar pulse intervals and human resonance characteristics. *Proc. 2nd Int. Conf. Bioelectromagn.*, pp. 141-142.
- Bishop, N., Bulbert, M., Carr, S., Kroker, S. & Millikan, J. (1995). Sonographic analysis of vocalisations in captive dunnarts, *Sminthopsis crassicaudata*. *Austr. Mammal.*, **18**, 99-100.
- Bisther, A. (1996). Acoustic communication of Norwegian killer whales, *Orcinus orca*, during competitive group interactions. *European Research on Cetaceans*, **9**, 28.
- Blackshaw, J. K., Jones, D. N. & Thomas, F. J. (1996). Vocal individuality during suckling in the intensively housed domestic pig. *Appl. Anim. Behav. Sci.*, **50**, 33-41.
- Blake, B. H. (1992). Ultrasonic vocalization and body temperature maintenance in infant voles of three species (Rodentia, Arvicolidae). *Dev. Psychobiol.*, **25**, 581-596.
- Blanchard, R. J., Weiss, S. M., Yudko, E. B. & T'Aukulis, H. K. (1992). Social encounters with conspecifics elicit selective high-frequency 35-70 kHz ultrasonic vocalizations in rats. *Soc. Neurosci. Abstr.*, **18**, 872.
- Blanchard, R. J., Yudko, E. B., Blanchard, D. C. & T'Aukulis, H. K. (1993). High-frequency 35-70 kHz ultrasonic vocalizations in rats confronted with anesthetized conspecifics: effects of gepirone, ethanol and diazepam. *Pharmacol. Biochem. Behav.*, **44**, 313-319.
- Blass, E. M. & Shide, D. J. (1993). Endogenous cholecystokinin reduces vocalization in isolated 10 day old rats. *Behav. Neurosci.*, **107**, 488-492.
- Blomqvist, C., Amundin, M., Kroeling, O. & Gunnarsson, P. (1998). A new application to record and store directional, pulsed communication sounds in the bottlenose dolphin *Tursiops truncatus*. *Bioacoustics*, **9**, 159-160.
- Blumberg, M. S., Sokoloff, G. & Kent, K. J. (2000). A developmental analysis of clonidine's effects on cardiac rate and ultrasound production in infant rats. *Dev. Psychobiol.*, **36**, 186-193.
- Blumberg, M. S., Efimova, I. V. & Alberts, J. R. (1992). Thermogenesis during ultrasonic vocalization by rat pups isolated in a warm environment: A thermographic analysis. *Dev. Psychobiol.*, **25**, 497-510.
- Blumberg, M. S. & Sokoloff, G. (2001). Do infant rats cry? *Psychol. Rev.*, **108**, 83-95.
- Blumberg, M. S., Kreber, L. A., Sokoloff, G. & Kent, K. J. (2000). Cardiovascular mediation of clonidine-induced ultrasound production in infant rats. *Behav. Neurosci.*, **114**, 602-608.
- Blumberg, M. S., Sokoloff, G., Kirby, R. F. & Kent, K. J. (2000). Distress vocalizations in infant rats: What's all the fuss about? *Psychol. Sci.*, **11**, 78-81.
- Blumberg, M. S., Sokoloff, G. & Kent, K. J. (1999). Cardiovascular concomitants of ultrasound production during cold exposure in infant rats. *Behav. Neurosci.*, **113**, 1274-1281.
- Blumberg, M. S. & Stolba, M. A. (1996). Thermogenesis, myoclonic twitching, and ultrasonic vocalization in

- neonatal rats during moderate and extreme cold exposure. *Behav. Neurosci.*, **110**, 305-314.
- Blumberg, M. S. & Albert, J. R. (1990). Ultrasonic vocalizations by rat pups in the cold: An acoustic by-product of laryngeal braking? *Behav. Neurosci.*, **104**, 808-817.
- Blumstein, D. T. & Armitage, K. B. (1998). Why do yellow-bellied marmots call? *Anim. Behav.*, **56**, 1053-1055.
- Blumstein, D. T. & Arnold, W. (1995). Situational-specificity in alpine marmot alarm communication. *Ethology*, **100**, 1-13.
- Blumstein, D. T., Daniel, J. C., Griffin, A. S. & Evans, C. S. (2000). Insular tammar wallabies (*Macropus eugenii*) respond to visual but not acoustic cues from predators. *Behav. Evol.*, **11**, 528-535.
- Blumstein, D. T. (1995). Golden-marmot alarm calls. I. The production of situationally specific vocalizations. *Ethology*, **100**, 113-125.
- Blumstein, D. T. (1999). Alarm calling in three species of marmots. *Behaviour*, **136**, 731-758.
- Blumstein, D. T. & Daniel, J. C. (1997). Inter- and intraspecific variation in the acoustic habitats of three marmot species. *Ethology*, **103**, 325-338.
- Blumstein, D. T. & Armitage, K. B. (1997). Alarm calling in yellow-bellied marmosets. I. The meaning of situationally variable alarm calls. *Anim. Behav.*, **53**, 143-171.
- Blumstein, D. T. & Armitage, K. B. (1997). Does sociality drive the evolution of communicative complexity? A comparative test with ground-dwelling sciurid alarm calls. *Am. Nat.*, **150**, 179-200.
- Blumstein, D. T., Steinmetz, J., Armitage, K. B. & Daniel, J. C. (1997). Alarm calling in yellow-bellied marmosets: II. The importance of direct fitness. *Anim. Behav.*, **53**, 173-184.
- Boerg, D. L. (1992). Alarm calling in alpine marmot (*Marmota marmota* L.): evidence for semantic communication. *Ethol. Ecol. Evol.*, **4**, 125-138.
- Boettcher, F. A., Mills, J. R. & Schmiedt, R. A. (1995). Masking of auditory brainstem responses in young and aged gerbils. *Hear. Res.*, **89**, 1-13.
- Boettcher, F. A., White, D. R., Mills, J. H. & Schmiedt, B. N. (1995). Age-related changes in auditory evoked potentials of gerbils. III. Low-frequency responses and repetition rate effects. *Hear. Res.*, **87**, 208-219.
- Bogdanowicz, W., Fenton, M. B. & Daleszczyk, K. (1999). The relationships between echolocation calls, morphology and diet in insectivorous bats. *J. Zool.*, **247**, 381-394.
- Bonaventura, L. R. & Romero, M. T. (2000). Effects of light pulses on ultrasonic vocalization in the neonatal rat. *Soc. Neurosci. Abstr.*, **26**.
- Booth, I. J. & Booth, K. H. V. (1993). Using neural nets to identify marine mammals. *Oceans '93*, **3**, 112-115.
- Borszcz, G. S. (1993). The capacity of motor reflex and vocalization thresholds to support avoidance conditioning in the rat. *Behav. Neurosci.*, **107**, 678-693.
- Boughman, J. W. & Wilkinson, G. S. (1998). Greater spear-nosed bats discriminate group mates by vocalizations. *Anim. Behav.*, **55**, 1717-1732.
- Boughman, J. W. (1998). Vocal learning by greater spear-nosed bats. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 227-233.
- Boughman, J. W. (1997). Greater spear-nosed bats give group-distinctive calls. *Behav. Ecol. Sociobiol.*, **40**, 61-70.
- Bowles, A. E., Young, W. G. & Asper, E. D. (1988). Ontogeny of stereotyped calling of a killer whale calf, *Orcinus orca*, during her first year. *Rit. Fiskideildar*, **11**, 251-276.
- Branchi, I., Santucci, D. & Alleva, E. (2001). Ultrasonic vocalisation emitted by infant rodents: A tool for assessment of neurobehavioural development. *Behav. Brain Res.*, **125**, 49-56.
- Branchi, I., Santucci, D., Vitale, A. & Alleva, E. (1997). Sonographic characterization of ultrasonic vocalisations emitted by infant laboratory mice *Mus musculus*. *Bioacoustics*, **8**, 259-260.
- Branchi, I., Santucci, D., Vitale, A. & Alleva, E. (1998). Ultrasonic vocalizations by infant laboratory mice: A preliminary spectrographic characterization under different conditions. *Dev. Psychobiol.*, **33**, 249-256.
- Brand, A., Urban, A. & Grothe, B. (2000). Duration tuning in the mouse auditory midbrain. *J. Neurophysiol.*, **84**, 1790-1799.
- Brandes, T. S. (1998). Passive localization of acoustic sources in media with non-constant sound velocity. *Bioacoustics*, **9**, 155-156.
- Branstetter, B. K., Herman, L. M., Pack, A. A., Mevissen, S. J., Moore, A. M., Granum, J., Carsrud, L., Butler, C., Lecaroz, S. B. & Roberts, S. (2000). Horizontal angular discrimination by an echolocating bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **108**, 2636.
- Braun, K. & Poeggel, G. (2001). Recognition of mother's voice evokes metabolic activation in the medial prefrontal cortex and lateral thalamus of *Octodon degus*. *Neurosci.*, **103**, 861-864.
- Braun, S. & Scheich, H. (1997). Influence of experience on the representation of the "mothering call" in frontoparietal and auditory cortex of pups of the rodent *Octodon degus*: FDG mapping. *J. Comp. Physiol. A.*, **181**, 697-709.
- Brennan, J. F., Santucci, D., Branchi, I. & Alleva, E. (1999). Ultrasonic vocalizations elicit orienting and associative reactions in preweanling mice. *Acta Neurobiol. Exper.*, **59**, 23-30.

- Brill, R. L. & Harder, P. J. (1991). The effects of attenuating returning echolocation signals at the lower jaw of a dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **89**, 2851-2857.
- Brill, R. L. (1988). The acoustical function of the lower jaw of the bottlenosed dolphin, *Tursiops truncatus* (Montagu), during echolocation. Doctoral dissertation. Loyola University of Chicago. University Microfilms.
- Brill, R. L., Moore, P. W. B., Dankiewicz, L. A. & Ketten, D. R. (1997). Evidence of hearing loss in an Atlantic bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **102**, 3101.
- Brittan-Powell, E. F., Okanoya, K., Dooling, R. J., Comer, C. & Park, T. (2001). The auditory brainstem response of the fossorial naked mole-rat. *Soc. Neurosci. Abstr.*, **27**, 1920.
- Britton, A. R. C. & Jones, G. (1999). Echolocation behaviour and prey capture success in foraging bats: laboratory and field experiments on *Myotis daubentonii*. *J. Exp. Biol.*, **202**, 1793-1802.
- Britton, A. R. C., Jones, G. & Rayner, J. M. V. (1997). Flight performance, echolocation and foraging behavior in the pond bat, *Myotis dasycneme* (Chiroptera: Vespertilionidae). *J. Zool., Lond.*, **241**, 503-522.
- Browning, L. J., Williams, A. D. & Harland, E. (1998). Cetacean disturbance by high speed ferries: a preliminary assessment. *Bioacoustics*, **9**, 220-221.
- Brownlee, S. M. & Norris, K. S. (1994). The acoustic domain. In *The Hawaiian Spinner Dolphin* (K. S. Norris et al., eds.). The University of California Press; Berkeley.
- Bruckmann, G. & Burda, H. (1997). Hearing in blind subterranean Zambian mole-rats (*Cryptomys* sp.): collective behavioural audiogram in a highly social rodent. *J. Comp. Physiol. A.*, **181**, 83-88.
- Budzinski, S. M., Kehoe, P. & Callahan, M. (1999). Sonographic structure of isolation induced ultrasonic calls of rat pups. *Dev. Psychobiol.*, **34**, 195-204.
- Budzinski, S. M. & Eckersdorf, B. (1988). Vocalization accompanying emotional-aversive response induced by carbachol in the cat. Reproducibility and dose-response study. *Neuropsychopharmacology*, **1**, 311-320.
- Budzinski, S. M. & Barnabi, F. (1996). Contribution of the ascending cholinergic pathways in the production of ultrasonic vocalization in the rat. *Behav. Brain Res.*, **80**, 145-152.
- Budzinski, S. M., Bihari, F., Ociepa, D. & Fu, X.-W. (1993). Analysis of 22 kHz ultrasonic vocalization in laboratory rats: long and short calls. *Physiol. Behav.*, **54**, 215-221.
- Budzinski, S. M. & Chiu, E. M. (1995). Behavioral responses of laboratory rats to playback of 22 kHz ultrasonic calls. *Physiol. Behav.*, **57**, 1039-1044.
- Budzinski, S. M. (1994). Ultrasonic vocalization induced by intracerebral carbachol in rats: Localization and a dose-response study. *Behav. Brain Res.*, **63**, 133-143.
- Budzinski, S. M. (2001). Pharmacological and behavioral characteristics of 22 kHz alarm calls in rats. *Neurosci. Biobehav. Rev.*, **25**, 611-617.
- Brueckmann, G. & Burda, H. (1997). Hearing in blind subterranean Zambian common mole-rats (*Cryptomys* sp., Bathyergidae, Rodentia). *J. Comp. Physiol. A.*, **181**, 83-88.
- Brugge, J. F., Reale, R. A., Hind, J. E., Chan, J. C. K., Musicant, A. D. & Poon, P. W. F. (1994). Simulation of free-field sound sources and its application to studies of cortical mechanisms of sound localization in the cat. *Hear. Res.*, **73**, 67-84.
- Brunelli, S. A., Shair, H. N. & Hofer, M. A. (1994). Hypothermic vocalizations of rat pups (*Rattus norvegicus*) elicit and direct maternal search behavior. *J. Comp. Psychol.*, **108**, 298-303.
- Brunelli, S. A., Masmela, J. R., Shair, H. N., Hofer, M. A. (1998). Effects of biparental rearing on ultrasonic vocalization (USV) responses of rat pups (*Rattus norvegicus*). *J. Comp. Psychol.*, **112**, 331-343.
- Brunelli, S. A., Hofer, M. A. & Weller, A. (2001). Selective breeding for infant vocal response: a role for postnatal maternal effects? *Dev. Psychobiol.*, **38**, 221-228.
- Brunelli, S. A., Hofer, M. A., Masmela, J. R. & Shair, H. N. (2001). Developmental effects of selective breeding for an infantile trait: Rat pup ultrasonic vocalization (USV). *Dev. Psychobiol.*, **38**, 197.
- Brunelli, S. A., Keating, C. C., Hamilton, N. A. & Hofer, M. A. (1996). Development of ultrasonic vocalization responses in genetically heterogenous National Institute of Health (N:NIH) rats: I. Influence of age, testing experience, and associated factors. *Dev. Psychobiol.*, **29**, 507-516.
- Braadbaart, J. & Kamminga, C. (1987). On several definitions of time resolution applied to bio-sonar. *Proc. 8th Symp. Inf. Theor. Benelux*, pp. 53-60.
- Buck, J. R., Morgenbesser, H. B. & Tyack, P. L. (2000). Synthesis and modification of the whistles of the bottlenose dolphin, *Tursiops truncatus*. *J. Acoust. Soc. Am.*, **108**, 407-416.
- Buck, J. R. & Tyack, P. L. (1993). A quantitative measure of similarity for *Tursiops truncatus* signature whistles. *J. Acoust. Soc. Am.*, **94**, 2497-2506.
- Burgdorf, J., Gordon, N., Knutson, B. & Panksepp, J. (2000). Ultrasonic vocalizations are a sensitive measure of positive and negative affective states in rats. *Soc. Neurosci. Abstr.*, **26**.
- Burgdorf, J., Knutson, B. & Panksepp, J. (2000). Anticipation of rewarding electrical brain stimulation evokes ultrasonic vocalization in rats. *Behav. Neurosci.*, **114**, 320-327.

- Burgdorff, J. & Panksepp, J. (1999). Evidence that rat ultrasonic calls can index both positive and negative affective states. *Soc. Neurosci. Abstr.*, **25**, 875.
- Burke da Silva, K., Kramer, D. L. & Weary, D. M. (1994). Context-specific alarm calls of the eastern chipmunk, *Tamias striatus*. *Can. J. Zool.*, **72**, 1087-1092.
- Burnett, S. C., Kazial, K. A. & Masters, W. M. (2001). Discriminating individual big brown bat (*Eptesicus fuscus*) sonar vocalizations in different recording situations. *Bioacoustics*, **11**, 189-210.
- Burnett, S. C. & Masters, W. M. (1999). The use of neural networks to classify echolocation calls of bats. *J. Acoust. Soc. Am.*, **106**, 2189.
- Caldwell, M. C., Caldwell, D. K. & Tyack, P. L. (1990). Review of the signature-whistle hypothesis for the Atlantic bottlenose dolphin. In *The Bottlenose Dolphin* (S. Leatherwood & R. R. Reeves, eds.). Academic Press; San Diego, pp. 199-234.
- Callahan, M., Kehoe, P. & Brudzynski, S. M. (1996). The effect of cholinergic stimulation on rat pup vocalizations. *Dev. Psychobiol.*, **29**, 281.
- Campbell, G. S., Gisner, R. & Helweg, D. A. (2000). Acoustic identification of female Steller sea lions. *J. Acoust. Soc. Am.*, **108**, 2541.
- Campbell, G. S., Gisner, R. C., Helweg, D. A. & Milette, L. L. (2002). Acoustic identification of female Steller sea lions (*Eumetopias jubatus*). *J. Acoust. Soc. Am.*, **111**, 2920-2928.
- Carden, S. E., Barr, G. A. & Hofer, M. A. (1991). Differential effects of specific opioid receptor agonists on rat pup isolation calls. *Dev. Brain Res.*, **62**, 17-22.
- Carden, S. E., Bortot, A. T. & Hofer, M. A. (1992). U50488 and pentylene tetrazole but not naltrexone elicit ultrasonic vocalizations from rat pups in the home cage. *Soc. Neurosci. Abstr.*, **18**, 659.
- Carden, S. E., Davachi, L. & Hofer, M. A. (1994). U50,488 increases ultrasonic vocalizations in 3-, 10-, and 18-day-old rat pups in isolation and the home cage. *Dev. Psychobiol.*, **27**, 65-83.
- Carden, S. E., Bortot, A. T. & Hofer, M. A. (1993). Ultrasonic vocalizations are elicited from rats pups in the home cage by pentylene tetrazol and U50,488, but not naltrexone. *Behav. Neurosci.*, **107**, 851-859.
- Carey, P. W., O'Connor, C. E., McDonald, R. M. & Matthews, L. R. (1997). Comparison of the attractiveness of acoustic and visual stimuli for brushtail possums. *N. Z. J. Zool.*, **24**, 273-276.
- Carlile, S. & King, A. J. (1994). Monaural and binaural spectral level cues in the ferret: acoustics and the neural representation of auditory space. *J. Neurophysiol.*, **71**, 785-801.
- Carlile, S. & Pettigrew, A. G. (1987). Directional properties of the auditory periphery in the guinea pig. *Hear. Res.*, **31**, 111-122.
- Carlile, S. (1991). The auditory periphery of the ferret: postnatal development of acoustic properties. *Hear. Res.*, **51**, 265-278.
- Carr, J. A., Cranford, T. W., van Bonn, W. G., Chaplin, M. S., Carder, D. A., Kamolnick, T. & Ridgway, S. H. (1998). Video endoscopy of the dolphin sonar signal generator. *Bioacoustics*, **9**, 155.
- Casseday, J. H., Ehrlich, D. & Covey, E. (1994). Neural tuning for sound duration: Role of inhibitory mechanisms in the inferior colliculus. *Science*, **264**, 847-850.
- Castren, H., Algers, B., Jensen, P. & Saloniemi, H. (1989). Suckling *Behaviour* and milk consumption in newborn piglets as a response to sow grunting. *Appl. Anim. Behav. Sci.*, **24**, 227-238.
- Cato, D. H. & Mccauley, R. D. (2000). Using one or two hydrophones for marine animal surveys. *J. Acoust. Soc. Am.*, **108**, 2539.
- Cavagnaro, L., Baldwin, K. & Stone, G. (2000). Hector's dolphin (*Cephalorhynchus hectori*) vocalizations and gillnet pingers. *J. Acoust. Soc. Am.*, **108**, 2636.
- Cerchio, S. & Dahlheim, M. (2001). Variation in feeding vocalizations of humpback whales *Megaptera novaeangliae* from southeast Alaska. *Bioacoustics*, **11**, 277-295.
- Cerchio, S. (1993). *Cultural evolution and geographic variation in songs of humpback whales in the eastern north Pacific*. M.Sc. thesis. Moss Landing Marine Laboratories. Moss Landing, California.
- Cerchio, S. (1996). Bioacoustic analysis of humpback whale vocalizations recorded off the Aleutian, Islands, Alaska; Aleutian Island Marine Mammal Survey 1994. *Report to the Southwest Fisheries Science Center, NMFS, NOAA*. Contract # 40JGNF500325.
- Cerchio, S., Jacobsen, J. K. & Norris, T. F. (2001). Temporal and geographical variation in songs of humpback whales, *Megaptera novaeangliae*: synchronous change in Hawaiian and Mexican breeding assemblages. *Anim. Behav.*, **62**, 313-329.
- Chabot, D. (1988). A quantitative technique to compare and classify humpback whale (*Megaptera novaeangliae*) sounds. *Z. Tierpsychol.*, **77**, 89-102.
- Chapman, D. M. F. & Ellis, D. D. (1998). The elusive decibel: thoughts on sonars and marine mammals. *Canad. Acoustics*, **26**, 29-31.
- Chappell, O. P., Leaper, R. & Gordon, J. (1996). Development of an automated harbour porpoise click detector. *European Research on Cetaceans*, **9**, 75-80.
- Charif, R. A., Mellinger, D. K., Dunsmore, K. J., Fristrup, K. M. & Clark, C. W. (2002). Estimated source levels

- of fin whale (*Balenoptera physalus*) vocalizations: Adjustments for surface interference. *Mar. Mamm. Sci.*, **18**, 81-98.
- Charif, R. A., Clapham, P. J. & Clark, C. W. (2001). Acoustic detections of singing humpback whales in deep waters off the British Isles. *Mar. Mamm. Sci.*, **17**, 751-768.
- Charrier, I., Mathevon, N. & Jouventin, P. (2002). How does a fur seal mother recognize the voice of her pup? An experimental study of *Arctocephalus tropicalis*. *J. Exp. Biol.*, **205**, 603-612.
- Chechik, G., Anderson, M. J., Young, E. D., Nelken, I. & Tishby, N. (2001). Redundancy reduction in the ascending auditory pathway. *Soc. Neurosci. Abstr.*, **27**, 1920.
- Chen, J., van Veen, B. D. & Hecox, K. E. (1995). A spatial feature extraction and regularization model for the head-related transfer function. *J. Acoust. Soc. Am.*, **97**, 439-452.
- Chittajallu, S. K., Palakal, M. & Kohrt, K. (1994). Computational model of signal encoding in the mammalian peripheral auditory system. *1994 IEEE Int. Conf. Systems, Man and Cybernetics. Humans, Information and Technology, Vol. 2*, pp. 1303-1307.
- Chittajallu, S. K., Kohrt, K. G., Palakal, M. J. & Wong, D. (1996). Computational model of the bat auditory periphery. *Math. Comput. Model.*, **24**, 67-78.
- Chittajallu, S. K. & Wong, D. (1994). Connectionist networks in auditory system modeling. *Comput. Biol. Med.*, **24**, 431-439.
- Chowdhury, S. A. & Suga, N. (2000). Reorganization of the frequency map of the auditory cortex evoked by cortical electrical stimulation in the big brown bat. *J. Neurophysiol.*, **83**, 1856-1863.
- Christesen, L. S. & Nelson, J. (2000). Vocal communication in the grey-headed flying-fox *Pteropus poliocephalus* (Chiroptera: Pteropodidae). *Austr. Zool.*, **31**, 447-457.
- Chaadaeva, E. (2000). Juvenile vocalizations in the wild cat (*Felis silvestris lybica*). *Adv. Ethol.*, **35**, 27.
- Chaadaeva, E. (2001). Influence of domestication on kitten's vocalizations: A comparative study. *Adv. Ethol.*, **36**, 134.
- Clarey, J. C., Barone, P. & Imig, T. J. (1994). Functional organization of sound direction and sound pressure level in primary auditory cortex of the cat. *J. Neurophysiol.*, **72**, 2383-2405.
- Clark, C. W. & Ellison, W. T. (2000). Calibration and comparison of the acoustic location methods used during the spring migration of the bowhead whale, *Balaena mysticetus*, off Pt. Barrow, Alaska, 1984-1993. *J. Acoust. Soc. Am.*, **107**, 3509-3517.
- Clark, C. W., Ellison, W. T. & Beeman, K. (1986). Acoustic tracking and distribution of migrating bowhead whales, *Balaena mysticetus*, off Point Barrow, Alaska in the spring of 1984. *Rep. Int. Whaling Comm.*, **36**, 502.
- Clark, C. W., Croll, D. A., Acevedo, A. & Urban-Ramirez, J. (2000). Multi-modal surveys of fin whales in the Sea of Cortez, Mexico. *J. Acoust. Soc. Am.*, **108**, 2539.
- Clark, C. W. (1989). Call tracks of bowhead whales based on call characteristics as an independent means of determining tracking parameters. Report of the Sub-Committee on Protected Species and Aboriginal Subsistence Whaling. Appendix. *Rep. Int. Whaling Comm.*, **39**, 111-112.
- Clark, C. W. (1996). The application of US Navy underwater hydrophone arrays for scientific research on whales. *European Research on Cetaceans*, **9**, 7-9.
- Clark, C. W. & Ellison, W. T. (1988). Numbers and distribution of bowhead whales *Balaena mysticetus*, based on the 1985 acoustic study off Pt. Barrow, Alaska. *Rep. Int. Whaling Comm.*, **38**, 312-320.
- Clark, C. W. & Ellison, W. T. (1997). Low-frequency signaling behavior in mysticete whales. *J. Acoust. Soc. Am.*, **101**, 3163.
- Clark, C. W., Ellison, W. T. & Beeman, K. (1986). Acoustic tracking of migrating bowhead whales. *Oceans*, **86**, IEEE Oceanic Engineering Society, 341-346.
- Clark, C. W., Borsani, J. F. & Notarbartolo-di-Sciara, G. (2002). Vocal activity of fin whales, *Balaenoptera physalus*, in the Ligurian Sea. *Mar. Mamm. Sci.*, **18**, 286-295.
- Clark, C. W. & Ellison, W. T. (1989). Numbers and distributions of bowhead whales, *Balaena mysticetus*, based on the 1986 acoustic study off Pt. Barrow, Alaska. *Rep. Int. Whaling Comm.*, **39**, 297-303.
- Clark, C. W. & Fristrup, K. M. (1997). Whales '95: a combined visual and acoustic survey of blue and fin whales off southern California. *Reports of the International Whaling Commission*, **47**, 583-600.
- Clark, C. W. (1994). Blue deep voices: Insights from the Navy's Whales '93 program. *Whalewatcher*, **28**, 6-11.
- Clark, C. W., Charif, R., Mitchell, S. & Colby, J. (1996). Distribution and behaviour of the bowhead whale, *Balaena mysticetus*, based on analysis of acoustic data collected during the 1993 spring migration off Point Barrow, Alaska. *Report Int. Whaling Comm.*, **38**, 541-552.
- Clark, K. F. & Farber, J. P. (2001). Internal superior laryngeal nerve afferent activity during respiration and evoked vocalization in cats. *Ann. Otol. Rhinol. Laryngol., Suppl.*, **187**, 3-17.
- Clark, K. F. & Farber, J. P. (2001). Effect of recurrent laryngeal nerve paralysis on superior laryngeal nerve afferents during evoked vocalization. *Ann. Otol. Rhinol. Laryngol., Suppl.*, **187**, 18-31.
- Clark, C. W. (1990). Acoustic behavior of mysticete whales. In *Sensory Abilities of Cetaceans* (J. Thomas & R.

- Kastelein, eds.). Plenum Press; New York, pp. 571-583.
- Coles, R. B. & Guppy, A. (1986). Biophysical aspects of directional hearing in the Tammar Wallaby, *Macropus eugenii*. *J. Exp. Biol.*, **121**, 371-394.
- Compton, L. A., Clarke, J. A., Seidensticker, J. & Ingrisano, D. R. (2001). Acoustic characteristics of white-nosed coati vocalizations: A test of motivation-structural rules. *J. Mammal.*, **82**, 1054-1058.
- Connelly, P. R., Goodson, A. D. & Coggrave, C. R. (1998). Matlab modelling of shallow water sound fields to explain the aversive behaviour of a harbour porpoise. *Bioacoustics*, **9**, 227-228.
- Connelly, P. R., Woodward, B. & Goodson, A. D. (1998). A non-intrusive tracking technique for dolphins interacting with a pelagic trawl using a sparse array of hydrophones. *Bioacoustics*, **9**, 228.
- Connor, R. C. & Smolker, R. A. (1996). "Pop" goes the dolphin: A vocalization male bottlenose dolphins produce during consortships. *Behaviour*, **133**, 643-662.
- Corben, C. (1989). Computer-based call analysis for microbat identification. *Macroderma*, **5**, 7.
- Corkeron, P. J. & van Parijs, S. M. (2001). Vocalizations of eastern Australian Risso's dolphins, *Grampus griseus*. *Can. J. Zool.*, **79**, 160-164.
- Coscia, E. M. (1995). *Ontogeny of timber wolf vocalizations: Acoustic properties and behavioral contexts*. Ph.D. dissertation. Dalhousie University; Halifax.
- Coscia, E. M. (1989). *Development of vocalizations in timber wolves (Canis lupus)*. M. Sc. Thesis, Dalhousie University; Halifax.
- Cosens, S. E. & Dueck, L. P. (1993). Icebreaker noise in Lancaster Sound, Northwest Territories, Canada: implications for marine mammal behaviour. *Mar. Mamm. Sci.*, **9**, 285-300.
- Covey, E. (1993). Response properties of single units in the dorsal nucleus of the lateral lemniscus and paralemniscal zone of an echolocating bat. *J. Neurophysiol.*, **69**, 842-859.
- Covey, E. & Casseday, J. H. (1986). Connectional basis for frequency representation in the nuclei of the lateral lemniscus of the bat, *Eptesicus fuscus*. *J. Neurosci.*, **6**, 2926-2940.
- Cranford, T. W. (1988). The anatomy of acoustic structures in the spinner dolphin forehead as shown by X-ray computed tomography and computer graphics. In *Animal Sonar* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 67-77.
- Cranford, T. W., Amundin, M. & Norris, K. S. (1996). Functional morphology and homology in the odontocete nasal complex: implications for sound generation. *J. Morphol.*, **228**, 223-285.
- Cranford, T. W., Elsberry, W. R., Blackwood, D. J., Carr, J. A., Kamolnick, T., Todd, M., Van Bonn, W. G., Carder, D. A., Ridgway, S. H., Bozliniski, D. M. & Decker, E. C. (2000). Two independent sonar signal generators in the bottlenose dolphin: Physiologic evidence and implications. *J. Acoust. Soc. Am.*, **108**, 2613.
- Cranford, T. W. (1992). Directional asymmetry in the odontocete forehead. *Am. Zool.*, **32**, 140A.
- Credner, S., Burda, H. & Ludescher, F. (1997). Acoustic communication underground: Vocalization characteristics in subterranean social mole-rats (*Cryptomys* sp., Bathyergidae). *J. Comp. Physiol. A.*, **180**, 245-255.
- Croll, D. A., Clark, C. W., Acevedo, A., Tershy, B., Flores, S., Gedamke, J. & Urban, J. (2002). Only male fin whales sing loud songs. *Nature*, **417**, 809.
- Cummings, W. C. & Thompson, P. O. (2000). First known study, identification, and characteristics of fin and blue-whale vocalizations in the Northeast Pacific with historical notes and anecdotes. *J. Acoust. Soc. Am.*, **108**, 2612.
- Curry, B. E., Mead, J. G. & Purgue, A. P. (1994). The occurrence of calculi in the nasal diverticula of porpoises (Phocoenidae). *Mar. Mamm. Sci.*, **10**, 81-86.
- Curry, B. E. (1992). Facial anatomy and potential function of facial structures for sound production in the harbor porpoise *Phocoena phocoena* and Dall's porpoise *Phocoenoides dalli*. *Can. J. Zool.*, **70**, 2103-2114.
- D'Amato, F. R. & Moles, A. (2001). Ultrasonic vocalizations as an index of social memory in female mice. *Behav. Neurosci.*, **115**, 834-840.
- D'Spain, G. L. & Lepper, P. A. (2000). Localizing marine animals and how marine animals might localize sound. *J. Acoust. Soc. Am.*, **108**, 2541.
- Dalheim, M. E. & Ljungblad, D. K. (1990). Preliminary hearing study on gray whales (*Eschrichtius robustus*) in the field. In *Sensory Abilities of Cetaceans* (J. A. Thomas & R. A. Kastelein, eds.). Plenum Press; New York, pp. 335-346.
- Daniel, J. C. & Blumstein, D. T. (1998). A test of the acoustic adaptation hypothesis in four species of marmots. *Anim. Behav.*, **56**, 1517-1528.
- Daniel, J. C. (1998). A test of the acoustic adaptation hypothesis in four species of marmots. M.A. thesis. University of Kansas, Lawrence.
- Darling, J. D. & Berube, M. (2001). Interactions of singing humpback whales with other males. *Mar. Mamm. Sci.*, **17**, 570-584.
- Dastur, F. N., McGregor, I. S. & Brown, R. E. (1999). Dopaminergic modulation of rat pup ultrasonic

- vocalizations. *Eur. J. Pharmacol.*, **382**, 53-67.
- Davidson, S. M. (1999). Context and correlates of vocalizations by male *Saccopteryx bilineata*. *Bat Res. News*, **40**, 168.
- Davis, K. A. & Ramachandran, R. & May, B. J. (1999). Single-unit responses in the inferior colliculus of decerebrate cats. II. Sensitivity to interaural level differences. *J. Neurophysiol.*, **82**, 164-175.
- Dawson, S. (1998). Sounds recorded from Baird's beaked whale, *Berardius bairdii*. *Mar. Mamm. Sci.*, **14**, 335-344.
- Dear, S. P., Simmons, J. A. & Fritz, J. (1993). A possible neuronal basis for representation of acoustic scenes in auditory cortex of the big brown bat. *Nature*, **364**, 620-623.
- Deecke, V. B. (1998). *Stability and change of killer whale (Orcinus orca) dialects*. M. Sc. thesis. University of British Columbia.
- Deecke, V. B., Ford, J. K. B. & Spong, P. (1999). Quantifying complex patterns of bioacoustic variation: Use of a neural network to compare killer whale (*Orcinus orca*) dialects. *J. Acoust. Soc. Am.*, **105**, 2499-2507.
- Deecke, V. B., Ford, J. K. B. & Spong, P. (2000). Dialect change in resident killer whales (*Orcinus orca*): implications for vocal learning and cultural transmission. *Anim. Behav.*, **60**, 629-638.
- Defanis, E. & Jones, G. (1995). Post-natal growth, mother-infant interactions and development of vocalizations in the vespertilionid bat *Plecotus auritus*. *J. Zool.*, **235**, 86-97.
- Delgutte, B., Joris, P. X., Litovsky, R. Y. & Yin, T. C. T. (1999). Receptive fields and binaural interactions for virtual space stimuli in the cat inferior colliculus. *J. Neurophysiol.*, **81**, 2833-2851.
- Delius, M., Hoffmann, E., Steinbeck, G. & Conzen, P. (1994). Biological effects of shock waves: Induction of arrhythmia in piglet hearts. *Ultrasounds Med. Biol.*, **20**, 279-285.
- DeLong, C. M., Au, W. W. L. & Harley, H. E. (2000). Acoustic analysis of objects ensonified by a bottlenose dolphin during a cross-modal matching task. *J. Acoust. Soc. Am.*, **108**, 2635.
- Dempster, E. R. & Perrin, M. R. (1994). Divergence in acoustic repertoire of sympatric and allopatric gerbil species (Rodentia, Gerbillinae). *Mammalia*, **58**, 93-104.
- Dempster, E. R. (1994). Vocalisations of adult northern quolls, *Dasyurus hallucatus*. *Austr. Mammal.*, **17**, 43-49.
- Denzinger, A. & Schnitzler, H.-U. (1998). Echo SPL, training experience, and experimental procedure influence the ranging performance in the big brown bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **183**, 213-224.
- Depireux, D. A., Simon, J. Z., Klein, D. J. & Shamma, S. A. (2001). Spectro-temporal response field characterization with dynamic ripples in ferret primary auditory cortex. *J. Neurophysiol.*, **85**, 1220-1234.
- Ding, W., Wuersig, B. & Evans, W. E. (1995). Whistles of bottlenose dolphins: Comparisons among populations. *Aquat. Mamm.*, **21**, 65-77.
- Ding, W., Wuersig, B. & Evans, W. (1995). Comparison of whistles among seven odontocete species. In *Sensory Systems of Marine Mammals* (R. A. Kastelein et al., eds.). De Spil Publ.; Woerden, Netherlands.
- Ding, W., Wuersig, B. & Leatherwood, S. (2001). Whistles of boto, *Inia geoffrensis*, and tucuxi, *Sotalia fluviatilis*. *J. Acoust. Soc. Am.*, **109**, 407-411.
- Doan, D. E. & Saunders, J. C. (1999). Sensitivity to simulated directional sound motion in the rat primary auditory cortex. *J. Neurophysiol.*, **81**, 2075-2087.
- Dobbins, P. F. (1998). Estimated target localisation accuracy, resolution and agility of dolphin echolocation based on a homing sonar/radar paradigm. *Bioacoustics*, **9**, 223.
- Dolphin, W. F. (1997). Electrophysiological measures of auditory processing in odontocetes. *Bioacoustics*, **8**, 79-101.
- Dolphin, W. F., Au, W. W. L., Nachtigall, P. E. & Pawloski, J. (1995). Modulation rate transfer functions to low-frequency carriers in three species of cetaceans. *J. Comp. Physiol. A.*, **177**, 235-245.
- Dolphin, W. F., Chertoff, M. E. & Burkard, R. F. (1994). Comparison of the envelope following response in the Mongolian gerbil using two-tone and sinusoidally amplitude-modulated tones. *J. Acoust. Soc. Am.*, **96**, 2225-2234.
- Dolphin, W. F. & Mountain, D. C. (1993). The envelope following response (EFR) in the Mongolian gerbil to sinusoidally amplitude modulated signals in the presence of simultaneously gated pure-tones. *J. Acoust. Soc. Am.*, **94**, 3215-3226.
- Dong, J., Song, G. & Wang, G. (1992). Preliminary study on anatomy and histology of larynx, trachea and lung of *Dugong dugon*. *Oceanol. Limnol. Sinica*, **23**, 433-437.
- Doron, N. N. & Ledoux, J. E. (1999). Organization of projections to the lateral amygdala from auditory and visual areas of the thalamus in the rat. *J. Comp. Neurol.*, **412**, 383-409.
- Dubrovskiy, N. A. (1990). On the two auditory systems in dolphins. In *Sensory Abilities of Cetaceans* (J. A. Thomas & R. K. Kastelein, eds.). Plenum Press; New York, pp. 233-254.
- Dudzinski, K. M. & Newborough, D. (1998). Concurrent recording of dolphin behaviours, frequency-modulated tones, and pulsed vocalizations (including echolocation clicks) underwater with a swimmer-propelled

- system. *Bioacoustics*, **9**, 229.
- Dunning, D. C. & Krueger, M. (1996). Predation upon moths by free-foraging *Hipposideros caffer*. *J. Mammal.*, **77**, 708-715.
- Dunning, D. C., Futtrup, V. & Miller, L. A. (1995). Moth sounds' effects on the insect-catching behavior of bats. *Am. Zool.*, **35**, 41A.
- Durbin, L. S. (1998). Individuality in the whistle call of the Asiatic wild dog *Cuon alpinus*. *Bioacoustics*, **9**, 197-206.
- Dwyer, C. M., McLean, K. A., Deans, L. A., Chirnside, J., Calvert, S. K. & Lawrence, A. B. (1998). Vocalisations between mother and young in sheep: effects of breed and maternal experience. *Appl. Anim. Behav. Sci.*, **58**, 105-119.
- Dybek, A. & Schmidt, U. (1995). Acoustic communication between mother and young ones in the Mongolian gerbil (*Meriones unguiculatus*). *Z. Saeugetierkd.*, **60** (Sonderheft), 14 (German).
- Edds-Walton, P. L. (2000). Vocalizations of minke whales *Balaenoptera acutorostrata* in the St. Lawrence estuary. *Bioacoustics*, **11**, 31-50.
- Edds-Walton, P. L. (1997). Acoustic communication signals of mysticete whales. *Bioacoustics*, **8**, 47-60.
- Edds, P. L., Odell, D. K. & Tershy, B. R. (1993). Vocalizations of a captive juvenile and free-ranging adult-calf pairs of Bryde's whales *Balaenoptera edeni*. *Mar. Mamm. Sci.*, **9**, 269-284.
- Eggermont, J. J. (1999). Neural correlates of gap detection in three auditory cortical fields in the cat. *J. Neurophysiol.*, **81**, 2570-2581.
- Eggermont, J. J. & Smith, G. M. (1996). Neural connectivity only accounts for a small part of neural correlation in auditory cortex. *Exp. Brain Res.*, **110**, 379-391.
- Ehret, G. (1997). The auditory cortex. *J. Comp. Physiol. A.*, **181**, 547-557.
- Ehret, G. & Fischer, R. (1991). Neuronal activity and tonotopy in the auditory system visualized by c-fos gene expression. *Brain. Res.*, **567**, 350-354.
- Ehret, G. & Schreiner, C. E. (1997). Frequency resolution and spectral integration (critical band analysis) in single units of the cat primary auditory cortex. *J. Comp. Physiol. A.*, **181**, 635-650.
- Ehret, G. & Fleschlutz, D. B. (2001). Common rules of communication sound perception in mice and men. *Adv. Ethol.*, **36**, 24.
- Ehret, G. & Riecke, S. (2002). Mice and humans perceive multiharmonic communication sounds in the same way. *Proc. Natl. Acad. Sci. USA*, **99**, 479-482.
- Eiermann, A. & Esser, K.-H. (2000). Motor functions of the bat frontal auditory field. *Eur. J. Neurosci.*, **12**, Suppl., 11, 131.
- Eilam, D., Dayan, T., Ben-Eliyahu, S., Schulman, I., Shefer, G. & Hendrie, C. A. (1999). Differential behavioural and hormonal responses of voles and spiny mice to owl calls. *Anim. Behav.*, **58**, 1085-1093.
- Elsner, J., Suter, D. & Alder, S. (1990). Microanalysis of ultrasound vocalizations of young rats: Assessment of the behavioral teratogenicity of methylmercury. *Neurotoxicol. Teratol.*, **12**, 7-14.
- Emde, G. von der & Schnitzler, H.-U. (1990). Classification of insects by echolocating greater horseshoe bats. *J. Comp. Physiol. A.*, **167**, 423-430.
- Erbe, C. (2000). Detection of whale calls in noise: performance comparison between a beluga whale, human listeners, and a neural network. *J. Acoust. Soc. Am.*, **108**, 297-303.
- Erbe, C. & Farmer, D. M. (2000). A software model to estimate zones of impact on marine mammals around anthropogenic noise. *J. Acoust. Soc. Am.*, **108**, 1327-1331.
- Erbe, C. & Farmer, D. M. (2000). Zones of impact around icebreakers affecting beluga whales in the Beaufort Sea. *J. Acoust. Soc. Am.*, **108**, 1332-1340.
- Erbe, C. (1997). Zones of masking around icebreakers affecting beluga whales. *J. Acoust. Soc. Am.*, **102**, 3102.
- Erbe, C., King, A. R., Yedlin, M. & Farmer, D. M. (1999). Computer models for masked hearing experiments with beluga whales (*Delphinapterus leucas*). *J. Acoust. Soc. Am.*, **105**, 2967-2978.
- Esser, K.-H. & Kiefer, R. (1996). Detection of frequency modulation in the FM-bat *Phyllostomus discolor*. *J. Comp. Physiol. A.*, **178**, 787-796.
- Esser, K.-H. & Daucher, A. (1996). Hearing in the FM-bat *Phyllostomus discolor*: A behavioral audiogram. *J. Comp. Physiol. A.*, **178**, 779-785.
- Esser, K.-H., Condon, C. J., Suga, N. & Kanwal, J. S. (1997). Syntax processing by auditory cortical neurons in the FM-FM area of the mustached bat *Pteronotus parnellii*. *Proc. Nat. Acad. Sci. USA*, **94**, 14019-14025.
- Esser, K. H. & Schmidt, U. (1989). Mother-infant communication in the lesser spear-nosed bat *Phyllostomus discolor* (Chiroptera, Phyllostomidae): Evidence for acoustic learning. *Ethology*, **82**, 156-168.
- Esser, K. H. (1994). Audio-vocal learning in a non-human mammal: the lesser spear-nosed bat *Phyllostomus discolor*. *NeuroReport*, **5**, 1718-1720.
- Esser, K.-H. & Lud, B. (1997). Discrimination of sinusoidally frequency-modulated sound signals mimicking

- species-specific communication calls in the FM-bat *Phyllostomus discolor*. *J. Comp. Physiol. A.*, **180**, 513-522.
- Esser, K.-H. & Schubert, J. (1998). Vocal dialects in the lesser spear-nosed bat *Phyllostomus discolor*. *Naturwissenschaften*, **85**, 347-349.
- Esterby, S. R., Terhune, J., Mathieu, P., Robert, A.-M., Maag, U., Chan, K., Harezlak, J., St-Aubin, R., Vallee, M., Farruggia, J., MacDonald, P. D. M., Viveros-Aguilera, R., Allard, J., Choulakian, V., LeBlanc, R. & Mahdi, S. (2000). Case study in data analysis: Vocalization differences among three harp seal herds. *Can. J. Stat.*, **28**, 183-219.
- Evans, W. E. & Awbry, F. T. (1988). Natural history aspects of marine mammal echolocation: feeding strategies and habitat. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 521-534.
- Fanis, E. de & Jones, G. (1995). Post-natal growth, mother-infant interactions and development of vocalisations in the vespertilionid bat *Plecotus auritus*. *J. Zool.*, Lond., **235**, 85-97.
- Farley, G. R. (1997). Neural firing in ventrolateral thalamic nucleus during conditioned vocal behavior in cats. *Exp. Brain Res.*, **115**, 493-506.
- Farrell, W. J. & Alberts, J. R. (2000). Ultrasonic vocalizations by rat pups after adrenergic manipulations of brown fat metabolism. *Behav. Neurosci.*, **114**, 805-813.
- Farrell, W. J. & Alberts, J. R. (2001). Development and control of maternal responsiveness to rat pup ultrasonic vocalizations. *Dev. Psychobiol.*, **38**, 201.
- Faulstich, M., Koessl, M. & Reimer, K. (1996). Analysis of non-linear cochlear mechanics in the marsupial *Monodelphis domestica*: ancestral and modern mammalian features. *Hear. Res.*, **94**, 47-53.
- Faure, P. A., Fullard, J. H. & Dawson, J. W. (1993). The gleaning attacks of the northern long-eared bat, *Myotis septentrionalis*, are relatively inaudible to moths. *J. Exp. Biol.*, **178**, 173-189.
- Faure, P. A. & Barclay, R. M. R. (1994). Substrate-gleaning versus aerial hawking: Plasticity in the foraging and echolocation behaviour of the long-eared bat, *Myotis evotis*. *J. Comp. Physiol. A*, **174**, 651-660.
- Faure, P. A. & Barclay, R. M. R. (1992). The sensory basis of prey detection by the long-eared bat, *Myotis evotis*, and the consequences for prey selection. *Anim. Behav.*, **44**, 31-39.
- Fay, R. R. & Popper, A. N., eds. (1995). *Hearing by Bats*. Springer Handbook of Auditory Research. Springer; Berlin, Heidelberg, New York.
- Feddersen-Petersen, D. U. (2000). Vocalization of European wolves (*Canis lupus lupus* L.) and various dog breeds (*Canis lupus* f. *fam.*). *Arch. Tierzucht*, **43**, 387-397.
- Feng, A. S., Condon, C. J. & White, K. R. (1994). Stroboscopic hearing as a mechanism for prey discrimination in frequency-modulated bats? *J. Acoust. Soc. Am.*, **95**, 2736-2744.
- Fenton, M. B. (1995). Natural history and biosonar signals. In *Hearing by Bats* (A. N. Popper & R. R. Fay, eds.). Springer-Verlag; New York, pp. 37-86.
- Fenton, M. B., Portfors, C. V., Rautenbach, I. L. & Waterman, J. M. (1998). Compromises: Sound frequencies used in echolocation by aerial bats. *Can. J. Zool.*, **76**, 1174-1182.
- Fenton, M. B. (1994). Assessing signal variability and reliability: To thine ownself be true. *Anim. Behav.*, **47**, 757-764.
- Fenton, M. B., Rydell, J., Vonhof, M. J., Eklof, J. & Lancaster, W. C. (1999). Constant-frequency and frequency modulated components in the echolocation calls of three species of small bats (Emballonuridae, Thyropteriade, and Vespertilionidae). *Can. J. Zool.*, **77**, 1891-1900.
- Fenton, M. B., Audet, D., Obrist, M. K. & Rydell, J. (1995). Signal strength, timing, and selfdeafening - the evolution of echolocation in bats. *Paleobiology*, **21**, 229-242.
- Fernandez, C., Lysakowsky, A. & Goldberg, J. M. (1995). Hair-cell counts and afferent innervation patterns in the cristae ampullares of the squirrel monkey with a comparison to the chinchilla. *J. Neurophysiol.*, **73**, 1253-1269.
- Fernandez-Juricic, E., Campagna, C., Enriquez, V. & Ortiz, C. L. (2001). Vocal rates and social context in male South American sea lions. *Mar. Mamm. Sci.*, **17**, 387-396.
- Fernandez-Juricic, E., Campagna, C., Enriquez, V. & Ortiz, C. L. (1999). Vocal communication and individual variation in breeding South American sea lions. *Behaviour*, **136**, 495-518.
- Ferragamo, M. J., Haresign, T. & Simmons, J. A. (1997). Frequency tuning, latencies, and responses to frequency-modulated sweeps in the inferior colliculus of the echolocating bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **182**, 65-79.
- Fersen, L. von & Delius, J. D. (2000). Acquired equivalences between auditory stimuli in dolphins (*Tursiops truncatus*). *Anim. Cogn.*, **3**, 79-83.
- Fine, M., Lugli, M., Mainardi, D., Pavan, G. & Torricelli, P., eds. (1997). Underwater Bioacoustics: Behavioural, Environmental and Evolutionary Perspectives. *Marine and Freshwater Behaviour and Physiology*, **29**, 1-276.
- Finneran, J. J., Schlundt, C. E., Dear, R., Carder, D. A. & Ridgway, S. H. (2000). Masked temporary threshold

- shift (MTTS) in odontocetes after exposure to single underwater impulses from a seismic watergun. *J. Acoust. Soc. Am.*, **108**, 2515.
- Finneran, J. J., Schlundt, C. E., Carder, D. A., Clark, J. A., Young, J. A., Gaspin, J. B. & Ridgway, S. H. (2000). Auditory and behavioral responses of bottlenose dolphins (*Tursiops truncatus*) and a beluga whale (*Delphinapterus leucas*) to impulsive sounds resembling distant signatures of underwater explosions. *J. Acoust. Soc. Am.*, **108**, 417-431.
- Fitch, W. T. (2000). Skull dimensions in relation to body size in nonhuman mammals: The causal bases for acoustic allometry. *Zoology (Jena)*, **103**, 40-58.
- Fitch, W. T. (2000). The phonetic potential of nonhuman vocal tracts: Comparative cineradiographic observations of vocalizing animals. *Phonetica (Basel)*, **57**, 205-218.
- Fitch, W. T., Neubauer, J. & Herzog, H. (2002). Calls out of chaos: the adaptive significance of nonlinear phenomena in mammalian vocal production. *Anim. Behav.*, **63**, 407-418.
- Fitch, W. T. & Reby, D. (2001). The descended larynx is not uniquely human. *Proc. Roy. Soc. Lond. B.*, **268**, 1669-1675.
- Fitzgerald, J. W. (1994). The larynx-melon-vestibular-lips (LMVL) model of the dolphin sonar. I. The larynx pulse source. *Oceans '94*, **1**, 271-276.
- Flandrin, P., Cros, P. & Mange, G. (1986). Sensitivity of Doppler tolerance to the structure of bat-like sonar signals. *Acustica*, **62**, 40-47.
- Fleschhut, D. B. & Ehret, G. (2000). Time-critical frequency integration in the auditory system of the mouse. *Eur. J. Neurosci.*, **12**, Suppl. 11, 90.
- Fletcher, S. Le Boeuf, B. J. & Costa, D. P. (1996). On board acoustic recording from diving northern elephant seals. *J. Acoust. Soc. Am.*, **100**, 2531-2539.
- Fletcher, N. H. & Thwaites, S. (1988). Obliquely truncated simple horns: Idealized models for vertebrate pinnae. *Acustica*, **65**, 194-204.
- Flint, J. A., Goodson, A. D. & Pomeroy, S. C. (1998). Visualising wave propagation in bio-acoustic lens structures using the transmission line modelling method. *Bioacoustics*, **9**, 216.
- Floody, O. R. (1993). Cuts between the septum and preoptic area increase ultrasound production, lordosis and body weight in female hamsters. *Physiol. Behav.*, **54**, 383-392.
- Foeller, E. & Koessl, M. (2000). Mechanical adaptations for echolocation in the cochlea of the bat *Hipposideros lankadiva*. *J. Comp. Physiol. A.*, **186**, 859-870.
- Ford, J. K. B. (1987). A catalogue of underwater calls produced by killer whales (*Orcinus orca*) in British Columbia. *Can. Data Rep. Fish. Aquat. Sci.*, No. 633.
- Ford, J. K. B. (1996). Dialects and population identity of killer whales off the west coast of North America. *European Research on Cetaceans*, **9**, 14.
- Forge, A., Li, L., Corwin, J. T. & Nevill, G. (1993). Ultrastructural evidence for hair cell regeneration in the mammalian inner ear. *Science*, **259**, 1616-1619.
- Forrest, T. G. & Hoy, R. R. (1995). Predation risk for night-flying beetles and other insects. *Am. Zool.*, **35**, 41A.
- Frahm, H. D. & Rehkaemper, G. (1996). Comparative volume measurements of auditory brain structures in three breeds of domestic rabbits. *Z. Säugetierkd.*, **61** (Sonderheft), 14-15 (German).
- Francescoli, G. & Quirici, V. (2001). Vocalization patterns in *Ctenomys* (Rodentia, Octodontidae): Can they tell us something about the tuco-tuco's phylogeny? *Adv. Ethol.*, **36**, 157.
- Francescoli, G. (1999). A preliminary report of the acoustic communication in Uruguayan *Ctenomys* (Rodentia, Octodontidae): Basic sound types. *Bioacoustics*, **10**, 203-218.
- Francescoli, G. (2002). Geographic variation in vocal signals of *Ctenomys pearsoni*. *Acta Theriol.*, **47**, 35-44.
- Frankel, A. S., Clark, C. W., Herman, L. M. & Gabriele, C. M. (1995). Spatial distribution, habitat utilization, and social interactions of humpback whales, *Megaptera novaeangliae*, off Hawaii, determined using acoustic and visual techniques. *Can. J. Zool.*, **73**, 1134-1146.
- Frankel, A. S., Mobley, Jr. J. R. & Herman, L. M. (1995). Estimation of auditory response thresholds in humpback whales using biologically meaningful sounds. In *Sensory Systems of Aquatic Mammals* (R. A. Kastlein, J. A. Thomas & P. E. Nachtigall, eds.). De Spill Publishers; Woerden, The Netherlands, pp. 55-70.
- Frankel, A. S. & Straley, J. (2000). Comparison of Alaskan and Hawaiian humpback whale song at the song-unit level. *J. Acoust. Soc. Am.*, **108**, 2634.
- Frazer, L. N. & Mercado III, E. (2000). A sonar model for humpback whale song. *IEEE J. Ocean. Eng.*, **25**, 160-182.
- Freeberg, T. M. (2001). Communicative cultures in cetaceans: Big questions are unanswered, functional analysis are needed. *Behav. Brain Sci.*, **24**, 334.
- Freitag, L. E. & Tyack, P. L. (1993). Passive acoustic localization of the Atlantic bottlenose dolphin using whistles and echolocation clicks. *J. Acoust. Soc. Am.*, **93**, 2197-2205.
- Frey, R. & Hofmann, R. R. (2000). Larynx and vocalization of the takin (*Budorcas taxicolor* Hodgson, 1850:

- Mammalia, Bovidae). *Zool. Anz.*, **239**, 197-214.
- Friauf, E. (1992). Tonotopic order in the adult and developing auditory system of the rat shown by c-fos immunocytochemistry. *Eur. J. Neurosci.*, **4**, 798-812.
- Friauf, E., Aragon, C., Lohrke, S., Westenfelder, B. & Zafra, F. (1999). Developmental expression of the glycine transporter GLYT2 in the auditory system of rats suggests involvement in synapse maturation. *J. Comp. Neurol.*, **412**, 17-37.
- Fristrup, K. & Watkins, W. A. (1994). Marine animal sound classification. *Tech. Report. WHOI-94-13*.
- Fritsch, E., Hultsch, H. & Todt, D. (1996). Vocal behaviours of dolphins in the context of passing physical barriers. *Bioacoustics*, **6**, 314-315.
- Fritsch, B. & Nichols, D. H. (1993). Dil reveals a prenatal arrival of efferents at developing ears of mice. *Hear. Res.*, **65**, 51-60.
- Frommolt, K. H., Kruchenkova, E. P. & Russig, H. (1997). Individuality of territorial barking in arctic foxes, *Alopex lagopus*. In *Proceedings of the First International Symposium on Physiology and Ethology of Wild and Zoo Animals* (F. Klima and R. R. Hofman, eds.). Z. Saeugetierk., Suppl. 2, pp. 66-70.
- Frommolt, K.-H., Goltsman, M. E. & Jakupi, A. (2001). Individuality of vocalisations and individual acoustic discrimination in Arctic foxes (*Alopex lagopus*). *Zoology (Jena)*, **103**, Suppl. 3, 27.
- Fubara, B. M., Casseday, J. H., Covey, E. & Schwartz-Bloom, D. (1996). Distribution of GABA-A, GABA-B, and glycine receptors in the central auditory system of the big brown bat, *Eptesicus fuscus*. *J. Comp. Neurol.*, **369**, 83-92.
- Fullard, J. H. (1998). Sensory coevolution of moths and bats. In *Comparative Hearing: Insects* (R. R. Hoy, A. N. Popper and R. R. Fay, eds.). Springer; New York, pp. 279-326.
- Fullard, J. H., Jacobs, D. S. & Barclay, R. M. R. (1992). Geographic and habitat characteristics of the echolocation calls of the Hawaiian hoary bat. *Bat Res. News*, **33**, 57.
- Fullard, J. H. (1990). The sensory ecology of moths and bats: global lessons in staying alive. In *Insect Defenses* (D. L. Evans and J. O. Schmidt, eds.). Suny Press, New York, pp. 203-272.
- Fullard, J. H. (1989). Echolocation survey of the distribution of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) on the island of Kaua'i. *J. Mamm.*, **70**, 424-426.
- Fullard, J. H., Simmons, J. A. & Saillant, P. A. (1994). Jamming bat echolocation: the dogbane tiger moth *Cycnia tenera* times its clicks to the terminal attack calls of the big brown bat *Eptesicus fuscus*. *J. Exp. Biol.*, **194**, 285-298.
- Fuzessery, Z. M. (1994). Response selectivity for multiple dimensions of frequency sweeps in the pallid bat inferior colliculus. *J. Neurophysiol.*, **72**, 1061-1079.
- Fuzessery, Z. M., Buttenhoff, P., Andrews, B. & Kennedy, J. M. (1993). Passive sound localization of prey by the pallid bat *Anthrozous pallidus pallidus*. *J. Comp. Physiol. A.*, **171**, 767-777.
- Fuzessery, Z. M. (1996). Monaural and binaural spectral cues created by the external ears of the pallid bat. *Hear. Res.*, **95**, 1-17.
- Gaetz, W., Jantzen, K., Weinberg, H., Spong, P. & Symonds, H. (1993). A neural network method for recognition of individual *Orcinus orca* based on their acoustic behaviour: phase I. *Oceans '93*, **1**, 455-457.
- Galazyuk, A. V. & Feng, A. S. (1997). Encoding of sound duration by neurons in the auditory cortex of the little brown bat, *Myotis lucifugus*. *J. Comp. Physiol. A.*, **180**, 301-311.
- Galef, B. G. Jr. (2001). Where's the beef? Evidence of culture, imitation, and teaching, in cetaceans? *Behav. Brain Sci.*, **24**, 335.
- Gao, E. & Suga, N. (1998). Experience-dependent corticofugal adjustment of midbrain frequency map in bat auditory system. *Proc. Natl. Acad. Sci. USA*, **95**, 12663-12670.
- Gao, W.-J., Newman, D. E., Wormington, A. B. & Pallas, S. L. (1999). Development of inhibitory circuitry in visual and auditory cortex of postnatal ferrets: Immunocytochemical localization of GABAergic neurons. *J. Comp. Neurol.*, **409**, 261-273.
- Garstang, M., Larom, D., Raspel, R. & Lindeque, M. (1995). Atmospheric controls on elephant communication. *J. Exp. Biol.*, **198**, 939-951.
- Gaunaurd, G. C., Brill, D., Huang, H., Moore, P. W. B. & Strifors, H. C. (1996). Understanding the echo-clues used by dolphins to remotely identify the target characteristics of submerged elastic shells. *Proc. SPIE (The International Society for Optical Engineering)*, **2756**, 192-204.
- Gaunaurd, G. C. (1998). Signal processing of the echo signatures returned by submerged shells insonified by dolphin "clicks": active classification. *J. Acoust. Soc. Am.*, **103**, 1547-1557.
- Gebler, A. & Frommolt, K.-H. (2001). Directivity of dog (*Canis lupus f. familiaris*) vocalisation. *Zoology (Jena)*, **103**, Suppl. 3, 83.
- Gedamke, J., Costa, D. P. & Dunstan, A. (1997). New vocalization definitively linked to the minke whale. *J. Acoust. Soc. Am.*, **102**, 3121-3122.
- Gedamke, J., Costa, D. P. & Dunstan, A. (2001). Localization and visual verification of a complex minke whale

- vocalization. *J. Acoust. Soc. Am.*, **109**, 3038-3047.
- Gehr, D. D., Komiya, H. & Eggermont, J. J. (2000). Neuronal responses in cat primary auditory cortex to natural and altered species-specific calls. *Hear. Res.*, **150**, 27-42.
- Geissler, D. B. & Ehret, G. (2002). Time-critical integration of formants for perception of communication calls in mice. *Proc. Natl. Acad. Sci. USA*, **99**, 9021-9025.
- Gerhardt, K. J. (1989). Characteristics of the fetal sheep sound environment. *Semin. Perinatol.*, **13**, 362-370.
- Gerhardt, K. J., Huang, X., Arrington, K. E., Meixner, K., Abrams, R. M. N. & Antonelli, P. (1996). Fetal sheep in utero hear through bone conduction. *Am. J. Otolaryngol.*, **17**, 374-379.
- Gerhardt, K. J., Otto, R., Abrams, R. M., Ale, J. J., Burchfield, D. J. & Peters, A. J. M. (1992). Cochlear microphonics recorded from fetal and newborn sheep. *Am. J. Otolaryngol.*, **13**, 226-233.
- Gerstein, E. R., Gerstein, L., Forsythe, S. E. & Blue, J. E. (1999). The underwater audiogram of the West Indian manatee (*Trichechus manatus*). *J. Acoust. Soc. Am.*, **105**, 3575-3583.
- Gese, E. M. & Ruff, R. L. (1998). Howling by coyotes (*Canis latrans*): variation among social classes, seasons, and pack sizes. *Can. J. Zool.*, **76**, 1037-1043.
- Gibiat, V., Jardin, P. & Wu, F. (1987). Differential spectral analysis applied to *Myotis mystacinus* sonar signals. *Acustica*, **63**, 90-99 (French).
- Gibson, B. M. & Floody, O. R. (1998). Time course of VMN lesion effects on lordosis and ultrasound production in hamsters. *Behav. Neurosci.*, **112**, 1236-1246.
- Gisiner, R. C. (1997). The Office of Naval Research Program to determine the effects of man-made sound on marine mammals. *J. Acoust. Soc. Am.*, **102**, 3121.
- Glendenning, K. K. & Masterton, R. B. (1998). Comparative morphometry of mammalian central auditory systems: Variation in nuclei and form of the ascending system. *Brain Behav. Evol.*, **51**, 59-89.
- Gnoli, C., Prigioni, C. & Polotti, P. (1997). Acoustic communication and related behaviour of captive European otters *Lutra lutra*. *Bioacoustics*, **8**, 270-271.
- Gnone, G., Pavan, G., Manca, S., Benoldi, C., Bonsignori, B. & Manghi, M. (1997). Acoustic behaviour of a bottlenose dolphin *Tursiops truncatus* mother-calf pair in captivity: technical aspects in data collection and analysis. *Bioacoustics*, **8**, 274.
- Gnone, G., Pavan, G., Benoldi, C., Bonsignori, B., Manca, S. & Manghi, M. (1996). Acoustic behaviour of a captive newborn bottlenose dolphin. *European Research on Cetaceans*, **9**, 65-68.
- Goa, G. & Zhou, K. (1991). The number of fibres and range of fibre diameters in the cochlear nerve of three odontocete species. *Can. J. Zool.*, **69**, 2360-2364.
- Goepfert, M. C. & Wasserthal, L. T. (1995). Notes on echolocation calls, food and roosting behaviour of the Old World sucker-footed bat *Myzopoda aurita* (Chiroptera, Myzopodidae). *Z. Säugetierkd.*, **60**, 1-8.
- Golden, J. (1995). The development of the middle ear ossicles in relation to the larynx - an analysis of the postnatal development of the visceral skeleton of the laboratory rat. *Am. Zool.*, **35**, 124.
- Goldman, J. A., Phillips, D. P. & Fentress, J. C. (1995). An acoustic basis for maternal recognition in timber wolves (*Canis lupus*)? *J. Acoust. Soc. Am.*, **97**, 1970-1973.
- Golub, M. S. & Kaackuahiwi, M. A. (1993). Effects of intrapartum meperidine on distress vocalizations of guinea pigs during maternal separation. *Teratology*, **47**, 457.
- Goodson, A. D. & Sturtivant, C. R. (1996). Sonar characteristics of the harbour porpoise, *Phocoena phocoena*, source levels and spectrum. *ICES J. Mar. Sci.*, **53**, 465-472.
- Goodson, A. D. (1996). Studying the acoustic signals of the harbour porpoise. *European Research on Cetaceans*, **9**, 56-59.
- Goodson, A. D., Newborough, D. & Woodward, B. (1997). Interactive deterrent devices for fishing nets, designed to reduce small cetacean bycatch. *Bioacoustics*, **8**, 272-273.
- Goodson, A. D. & Lepper, P. A. (1996). A simple hydrophone monitor for cetacean acoustics. *European Research on Cetaceans*, **9**, 46-49.
- Goodson, A. D., Connelly, P. R. & Lepper, P. (1997). Aversive sounds and the harbour porpoise *Phocoena phocoena*. *Bioacoustics*, **8**, 261-262.
- Goodson, A. D., Mayo, R. H., Klinowska, M. & Bloom, P. R. S. (1994). Field testing passive acoustic devices designed to reduce the entanglement of small cetaceans in fishing gear. In *Cetaceans and Gillnets* (W. F. Perrin, G. P. Donovan & J. Barlow, eds.). *Rep. Int. Whal. Commn.* (Spec. Iss., **15**), pp. 597-606.
- Goodson, A. D., Klinowska, M. & Bloom, P. R. S. (1994). Enhancing the acoustic detectability of gillnets. In *Cetaceans and Gillnets* (W. F. Perrin, G. P. Donovan & J. Barlow, eds.). *Rep. Int. Whal. Commn.*, (Spec. Iss. **15**), pp. 585-595.
- Goodson, A. D. & Datta, S. (1992). Acoustic detection of fishing nets, the dolphin perspective. *Acoustic Letters*, **16**, 129-133.
- Goodson, A. D. (1998). A narrow band bio-sonar: investigating echolocation in the harbour porpoise *Phocoena phocoena*. *Bioacoustics*, **9**, 215-216.
- Goodson, A. D., Kastelein, R. A. & Sturtivant, C. R. (1995). Source levels and echolocation signal

- characteristics of juvenile harbour porpoises *Phocoena phocoena*. In *Harbour Porpoises, Laboratory Studies to Reduce Bycatches* (P. E. Nachtigall, J. Lien, W. W. L. Au & A. J. Read, eds.). De Spil Publisher; Woerden.
- Goodwin, G. A., Molina, V. A. & Spear, L. P. (1994). Repeated exposure of rat pups to isolation attenuates isolation-induced ultrasonic vocalization rates: Reversal with naltrexone. *Dev. Psychobiol.*, **27**, 53-64.
- Goold, J. C. (1996). Signal processing techniques for acoustic measurement of sperm whale body lengths. *J. Acoust. Soc. Am.*, **100**, 3431-3441.
- Goold, J. C. & Jones, S. E. (1995). Time and frequency domain characteristics of sperm whale clicks. *J. Acoust. Soc. Am.*, **98**, 1279-1291.
- Goold, J. C. (2000). A diel pattern in vocal activity of short-beaked common dolphins, *Delphinus delphis*. *Mar. Mamm. Sci.*, **16**, 240-244.
- Goold, J. C. (1999). Behavioural and acoustic observations of sperm whales in Scapa Flow, Orkney Islands. *J. Mar. Biol. Ass. U.K.*, **79**, 541-550.
- Gopfert, M. C. & Wasserthal, L. T. (1995). Notes on echolocation calls, food and roosting behaviour of the Old World sucker-footed bat *Myzopoda aurita* (Chiroptera, Myzopodidae). *Z. Säugetierkd.*, **60**, 1-8.
- Gordon, J. C. D., Matthews, J. N., Panigada, S., Gannier, A., Borsani, J. F. & di Sciara, G. N. (2000). Distribution and relative abundance of striped dolphins, and distribution of sperm whales in the Ligurian Sea cetacean sanctuary: Results from a collaboration using acoustic monitoring techniques. *J. Cetac. Res. Manage.*, **2**, 27-36.
- Gordon, J. C. D. (1996). Sperm whale acoustic behaviour. *European Research on Cetaceans*, **9**, 29-33.
- Gordon, M. & O'Neill, W. E. (2000). An extralemiscal component of the mustached bat inferior colliculus selective for direction and rate of linear frequency modulations. *J. Comp. Neurol.*, **426**, 165-181.
- Grandin, T. (2001). Cattle vocalizations are associated with handling and equipment problems at beef slaughter plants. *Appl. Anim. Behav. Sci.*, **71**, 191-201.
- Grandin, T. (1998). The feasibility of using vocalization scoring as an indicator of poor welfare during cattle slaughter. *Appl. Anim. Behav. Sci.*, **56**, 121-128.
- Green, D. M., DeFerrari, H. A., McFadden, D., Pearse, J. S. & Popper, A. N. (1994). *Sound and Marine Mammals: Current Knowledge and Research Needs*. National Academy Press; Washington, D. C.
- Green, K. & Burton, H. R. (1988). Do Weddell seals sing? *Polar Biol.*, **8**, 165-166.
- Greene, E. & Meagher, T. (1998). Red squirrels, *Tamiasciurus hudsonicus*, produce predator-class specific alarm calls. *Anim. Behav.*, **55**, 511-518.
- Greenfield, M. D. & Weber, T. (2000). Evolution of ultrasonic signalling in wax moths: discrimination of ultrasonic mating calls from bat echolocation signals and the exploitation of an antipredator receiver bias by sexual advertisement. *Ethol. Ecol. Evol.*, **12**, 259-279.
- Greenwood, D. D. (1996). Comparing octaves, frequency ranges, and cochlear-map curvature across species. *Hear. Res.*, **94**, 157-162.
- Griffiths, S. K., Brown, W. S. Jr., Gerhardt, K. J., Abrams, R. M. & Morris, R. J. (1994). The perception of speech sounds recorded within the uterus of a pregnant sheep. *J. Acoust. Soc. Am.*, **96**, 2055-2063.
- Grinnell, J. & McComb, K. (2001). Roaring and social communication in African lions: the limitations imposed by listeners. *Anim. Behav.*, **62**, 93-98.
- Grinnell, J. & McComb, K. (1996). Maternal grouping as a defense against infanticide by males: evidence from field playback experiments on African lions. *Behav. Ecol.*, **7**, 55-59.
- Grossette, A. & Moss, C. F. (1998). Target flutter rate discrimination by bats using frequency-modulated sonar sounds: behaviour and signal processing models. *J. Acoust. Soc. Am.*, **103**, 2167-2176.
- Grothe, B. & Neuweiler, G. (2000). The function of the medial superior olive in small mammals: temporal fields in auditory analysis. *J. Comp. Physiol. A.*, **186**, 413-423.
- Grothe, B. & Park, T. J. (1995). Time can be traded for intensity in the lower auditory system. *Naturwissenschaften*, **82**, 521-523.
- Groutage, D., Schempp, J. & Cohen, L. (1994). Characterization and analysis of marine mammal sounds using time-frequency and time-prony techniques. *Oceans '94*, **1**, 253-258.
- Guillen, A., Juste B., J. & Ibanez, C. (2000). Variation in the frequency of the echolocation calls of *Hipposideros ruber* in the Gulf of Guinea: an exploration of the adaptive meaning of the constant frequency value in rhinolophoid CF bats. *J. Evol. Biol.*, **13**, 70-80.
- Habersetzer, J. & Storch, G. (1992). Cochlea size in extant Chiroptera and middle Eocene microchiropterans from Messel. *Naturwissenschaften*, **79**, 462-466.
- Hackbarth, H. (1986). Phase evaluation in hypothetical receivers simulating ranging in bats. *Biol. Cybern.*, **54**, 281-287.
- Hafidi, A., Lanjun G. & Sanes, D. H. (1999). Age-dependent failure of axon regeneration in organotypic culture of gerbil auditory midbrain. *J. Neurobiol.*, **41**, 267-280.
- Hahn, M. E., Karkowski, L., Weinreb, L., Henry, A., Schanz, N. & Hahn, E. M. (1998). Genetic and

- developmental influences on infant mouse ultrasonic calling. II. Developmental patterns in the calls of mice 2-12 days of age. *Behav. Genet.*, **28**, 315-326.
- Hahn, M. E., Hewitt, J. K., Schanz, N., Weinreb, L. & Henry, A. (1997). Genetic and developmental influences on infant mouse ultrasonic calling. I. A diallel analysis of the calls of 3 day olds. *Behav. Genet.*, **27**, 133-135.
- Hamernik, R. P., Ahroon, W. A., Davis, R. I. & Sheau-Fang, L. (1994). Hearing threshold shifts from repeated 6-h daily exposure to impact noise. *J. Acoust. Soc. Am.*, **95**, 444-453.
- Hande, M. P., Devi, P. U. & Karanth, K. S. (1993). Effect of prenatal ultrasound exposure on adult behavior in mice. *Neurotoxicol. Teratol.*, **15**, 433-438.
- Hanggi, E. B. & Schusterman, R. J. (1994). Underwater acoustic displays and individual variation in male harbour seals, *Phoca vitulina*. *Anim. Behav.*, **48**, 1275-1283.
- Hanson, M. T. & Coss, R. G. (2001). Age differences in the response of California ground squirrels (*Spermophilus beecheyi*) to conspecific alarm calls. *Ethology*, **107**, 259-275.
- Hard, E. & Engel, J. (1991). Ontogeny of ultrasonic vocalization in the rat: Influence of neurochemical transmission systems. In *Behavioral Biology: Neuroendocrine Axis*. Lawrence Erlbaum Associates; New Jersey, pp. 37-53.
- Harding, S. M. & McGinnis, M. Y. (2001). The effects of testosterone propionate in the VMN on copulation, 50 kHz vocalization, and partner preference in castrated male rats. *Soc. Neurosci. Abstr.*, **27**, 2547.
- Hare, J. F. (1998). Juvenile Richardson's ground squirrels, *Spermophilus richardsonii*, discriminate among individual alarm callers. *Anim. Behav.*, **55**, 451-460.
- Harland, E., Turnbull, M., Williams, R. & Copley, V. (1996). The Durlston cetacean monitoring project. *European Research on Cetaceans*, **9**, 89-91.
- Harland, E. & Lloyd, L. (1996). Minimising cetacean-induced false alarms in military sonars. *European Research on Cetaceans*, **9**, 72-74.
- Harland, E., Plowman, R. & Turnbull, M. (1996). Deployment of a sea-bed mounted hydrophone for cetacean monitoring. *European Research on Cetaceans*, **9**, 69-71
- Harland, E. J. (1998). New technologies for marine mammal acoustic data capture. *Bioacoustics*, **9**, 221.
- Hartley, D. J. (1990). Phased array beam scanning as a possible aid to horizontal localization in horseshoe bats. *J. Acoust. Soc. Am.*, **88**, 2889-2891.
- Hartley, D. J. (1992). Stabilization of perceived echo amplitudes in echolocating bats. I. Echo detection and automatic gain control in the big brown bat, *Eptesicus fuscus*, and the fishing bat, *Noctilio leporinus*. *J. Acoust. Soc. Am.*, **91**, 1120-1132.
- Hartley, R. S. & Suthers, R. A. (1988). The acoustics of the vocal tract in the horseshoe bat, *Rhinolophus hildebrandti*. *J. Acoust. Soc. Am.*, **84**, 1201-1213.
- Harvey, A. T. & Hennesy, M. B. (1995). Corticotropin-releasing factor modulation of the ultrasonic vocalization rate of isolated rat pups. *Dev. Brain Res.*, **87**, 125-134.
- Hashimoto, H., Saito, T. R., Furudate, S. & Takahashi, K. W. (2001). Prolactin levels and maternal behavior induced by ultrasonic vocalizations of the rat pup. *Exp. Anim.*, **50**, 307-312.
- Hashimoto, H., Saito, T. R., Moritani, N., Komeda, K. & Takahashi, K. W. (2001). Comparative study on isolation calls emitted from hamster pups. *Exp. Anim.*, **50**, 313-318.
- Hashimoto, T. (2000). Optical-recorded auditory cortical activity of guinead pig. *Neurosci. Res. Suppl.*, **24**, S157.
- Hattori, T. & Suga, N. (1997). The inferior colliculus of the mustached bat has the frequency vs latency coordinates. *J. Comp. Physiol. A.*, **180**, 271-284.
- Hauber, M. E. & Sherman, P. W. (1998). Nepotism and marmot alarm calling. *Anim. Behav.*, **56**, 1049-1052.
- Hayes, J. P. (1997). Temporal variation in activity of bats and the design of echolocation-monitoring studies. *J. Mammal.*, **78**, 514-524.
- Hayward, T. J. (1997). Modeling and simulation of marine mammal generated sound. I. Stochastic modeling of marine mammal spatial distributions, collective motions, and vocalization occurrence times. *J. Acoust. Soc. Am.*, **101**, 3197.
- Heffner, R. S. & Heffner, H. E. (1992). Hearing and sound localization in blind mole rats (*Spalax ehrenbergi*). *Hear. Res.*, **62**, 206-216.
- Heffner, R. S., Koay, G. & Heffner, H. E. (1999). Sound localization in an Old World fruit bat (*Rousettus aegyptiacus*): Acuity, use of binaural cues, and relationship to vision. *J. Comp. Psychol.*, **113**, 297-306.
- Heffner, R. S. & Heffner, H. E. (1989). Sound localization, use of binaural cues and the superior olivary complex in the pig. *Brain Behav. Evol.*, **33**, 248-258.
- Heffner, R. S. & Heffner, H. E. (1990). Hearing in domestic pigs (*Sus scrofa*) and goats (*Capra hircus*). *Hear. Res.*, **48**, 231-240.
- Heffner, R. S. & Heffner, H. E. (1993). Degenerate hearing and sound localization in naked mole rats

- Heterocephalus glaber*, with an overview of central auditory structures. *J. Comp. Neurol.*, **331**, 418-433.
- Heller, K.-G. (1995). Echolocation and body size in insectivorous bats: the case of the giant naked bat *Cheiromeles torquatus* (Molossidae). *Le Rhinolophe*, **11**, 27-38.
- Helweg, D. A. (2000). Seasonal contribution of mysticete vocalization to ambient noise in southern California waters. *J. Acoust. Soc. Am.*, **108**, 2613.
- Helweg, D. A., Roitblat, H. L., Nachtigall, P. E. & Hautus, M. J. (1996). Recognition of aspect dependent three-dimensional objects by an echolocating Atlantic bottlenose dolphin. *J. Exp. Physiol.: Anim. Behav. Processes*, **22**, 19-31.
- Helweg, D. A. & Herman, L. M. (1994). Diurnal patterns of behaviour and group membership of humpback whales (*Megaptera novaeangliae*) wintering in Hawaiian waters. *Ethology*, **98**, 298-311.
- Helweg, D. A., Frankel, A. S., Mobley, J. R. & Herman, L. M. (1992). Humpback whale songs: Our current understanding. In *Marine Mammal Sensory Systems* (J. A. Thomas, R. A. Kastelein & A. Ya. Supin, eds.). Plenum; New York, pp. 459-484.
- Helweg, D. A., Roitblat, H. L. & Nachtigall, P. E. (1993). Using a biometric neural network to model dolphin echolocation. In *Artificial Neural Networks and Expert Systems* (N. Kasabov, ed.). IEEE Press; Los Alamitos, California, pp. 247-251.
- Helweg, D. A., Au, W. W. L., Roitblat, H. L. & Nachtigall, P. E. (1996). Acoustic basis for recognition of aspect-dependent three-dimensional targets by an echolocating bottlenose dolphin. *J. Acoust. Soc. Am.*, **99**, 2409-2420.
- Helweg, D. A., Cato, D. H., Jenkins, P. F., Garrigue, C. & McCauley, R. D. (1998). Geographic variation in South Pacific humpback whale songs. *Behaviour*, **135**, 1-27.
- Henry, K. R. (1997). Sharply tuned cochlear nerve ensemble periodicity responses to sonic and ultrasonic frequencies. *J. Comp. Physiol. A.*, **181**, 239-246.
- Henry, K. R. (1999). Noise improves transfer of near-threshold, phase-locked activity of the cochlear nerve: evidence for stochastic resonance? *J. Comp. Physiol. A.*, **184**, 577-584.
- Henry, T. H., Best, T. L., Rueter, L. A., Goebel, A. B., Milam, B. A. & Feltus, F. A. (1992). Foraging ecology of *Myotis grisescens*: a comparison of numbers and types of echolocation calls in aquatic and terrestrial habitats. *Bat Res. News*, **33**, 58.
- Herman, L. M. (1986). Cognition and language competencies of bottlenose dolphins. In *Dolphin Cognition and Behavior: a Comparative Approach* (R. J. Schusterman, J. A. Thomas and F. G. Wood, eds.). Lawrence Erlbaum Assoc., New Jersey, pp. 221-252.
- Herman, L. M., Pack, A. A. & Hoffmann-Kuhnt, M. (1998). Seeing through sound: Dolphins (*Tursiops truncatus*) perceive the spatial structure of objects through echolocation. *J. Comp. Psychol.*, **112**, 292-304.
- Herzing, D. L. (1996). An ethogram of underwater behaviors of the Atlantic spotted dolphin, *Stenella frontalis*. *European Research on Cetaceans*, **9**, 60-61.
- Hessel, K. & Schmidt, U. (1994). Multimodal orientation in *Carollia perspicillata* (Phyllostomidae). *Folia Zool.*, **43**, 339-346.
- Hienz, R. D., Aleszczyk, C. M. & May, B. J. (1996). Vowel discrimination in cats: Acquisition, effects of stimulus level, and performance in noise. *J. Acoust. Soc. Am.*, **99**, 3656-3668.
- Hienz, R. D., Aleszczyk, C. M. & May, B. J. (1996). Vowel discrimination in cats: Thresholds for the detection of second formant changes in the vowel /epsilon/. *J. Acoust. Soc. Am.*, **100**, 1052-1058.
- Hienz, R. D., Sachs, M. B. & Aleszczyk, C. M. (1993). Frequency discrimination in noise: comparison of cat performances with auditory-nerve models. *J. Acoust. Soc. Am.*, **93**, 462-469.
- Hodgetts, B. V., Waas, J. R. & Matthews, L. R. (1998). The effects of visual and auditory disturbance on the behaviour of red deer (*Cervus elaphus*) at pasture with and without shelter. *Appl. Anim. Behav. Sci.*, **55**, 337-351.
- Hoeller, P. (1995). A new method for audio-visual analyses of the echolocation behaviour of bats. *Z. Säugetierkd.*, **60** (Sonderheft), 29 (German).
- Hoelzel, A. R. & Osborne, R. W. (1986). Killer whale call characteristics: implications for cooperative foraging strategies. In *Behavioral Biology of Killer Whales* (B. C. Kirkevold & J. S. Lockard, eds.). Alan R. Liss, Inc.; New York, pp. 373-403.
- Hofer, M. A. & Shair, H. N. (1993). Ultrasonic vocalization, laryngeal braking and thermogenesis in rat pups: a reappraisal. *Behav. Neurosci.*, **107**, 354-362.
- Hofer, M. A., Brunelli, S. A., Masmela, J. & Shair, H. N. (1996). Maternal interactions prior to separation potentiate isolation-induced calling in rat pups. *Behav. Neurosci.*, **110**, 1158-1167.
- Hofer, M. A., Masmela, J. R., Brunelli, S. A. & Shair, H. N. (1999). Behavioral mechanisms for active maternal potentiation of isolation calling in rat pups. *Behav. Neurosci.*, **113**, 51-61.
- Hofer, M. A., Brunelli, S. A. & Shair, H. N. (1993). Ultrasonic vocalization responses of rat pups to acute

- separation and contact comfort do not depend on maternal thermal cues. *Dev. Psychobiol.*, **26**, 81-95.
- Hofer, M. A. (1996). Multiple regulators of ultrasonic vocalization in the infant rat. *Psychoneuroendocrinology*, **21**, 203-217.
- Hofer, M. A., Shair, H. N., Masmela, J. R. & Brunelli, S. A. (2001). Developmental effects of selective breeding for an infantile trait: the rat pup ultrasonic isolation call. *Dev. Psychobiol.*, **39**, 231-246.
- Holekamp, K. E., Boydston, E. E., Szykman, M., Graham, I., Nutt, K. J., Birch, S., Piskiel, A. & Singh, M. (1999). Vocal recognition in the spotted hyaena and its possible implications regarding the evolution of intelligence. *Anim. Behav.*, **58**, 383-395.
- Holman, S. D. & Rice, A. (1996). Androgenic effects on hypothalamic asymmetry in a sexually differentiated nucleus related to vocal behavior in Mongolian gerbils. *Horm. Behav.*, **30**, 662-672.
- Holman, S. D. & Janus, C. (1998). Laterally asymmetrical cell number in a sexually dimorphic nucleus in the gerbil hypothalamus is correlated with vocal emission rates. *Behav. Neurosci.*, **112**, 979-990.
- Holman, S. D. & Hutchison, J. B. (1994). Is sexual-aggressive vocal communication related to asymmetric mechanisms in the brain. *Aggress. Behav.*, **20**, 223-234.
- Hoogland, J. L. (1996). Why do Gunnison's prairie dogs give anti-predator calls? *Anim. Behav.*, **51**, 781-880.
- Horikawa, J., Hosokawa, Y., Nasu, M. & Taniguchi, I. (1997). Optical study of spatiotemporal inhibition evoked by two-tone sequences in the guinea pig auditory cortex. *J. Comp. Physiol. A.*, **181**, 677-684.
- Horner, K. C., Serviere, J. & Granier-Deferre, C. (1987). Deoxyglucose demonstration of in utero hearing in the guinea-pig foetus. *Hear. Res.*, **26**, 327-333.
- Hosken, D. J., Bailey, W. J., O'Shea, J. E. & Roberts, J. D. (1994). Localisation of insect calls by the bat *Nyctophilus geoffroyi* (Chiroptera: Vespertilionidae): A laboratory study. *Aust. J. Zool.*, **42**, 177-184.
- Hosokawa, Y., Horikawa, J., Nasu, M. & Taniguchi, I. (1997). Real-time imaging of neural activity during binaural interaction in the guinea pig auditory cortex. *J. Comp. Physiol. A.*, **181**, 607-614.
- Houser, D. S., Helweg, D. A. & Moore, P. W. (1999). Classification of dolphin echolocation clicks by energy and frequency distributions. *J. Acoust. Soc. Am.*, **106**, 1579-1585.
- Houser, D. S., Helweg, D. A., Moore, P. W. B. & Chellapilla, K. (2001). Optimizing models of dolphin auditory sensitivity using evolutionary computation. *Bioacoustics*, **12**, 57-78.
- Houser, D. S., Helweg, D. A., Chellapilla, K. & Moore, P. W. B. (1999). Creation of a biomimetic model of dolphin hearing through the use of evolutionary computation. *Proc. 1999 Congr. Evol. Comput.*, Vol.1, pp. 496-502.
- Hoy, R. R. (1992). The evolution of hearing in insects as an adaptation to predation from bats. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag; New York, pp. 115-130.
- Hsiao, T. Y., Solomon, N. P., Luschel, E. S., Titze, I. R., Liu, K., Fu, T. C. & Hsu, M. M. (1994). Effects of subglottic pressure on fundamental frequency of the canine larynx with active muscle tension. *Ann. Otol. Rhinol. Laryngol.*, **103**, 817-821.
- Hu, B. H. & Jiang, S. C. (1995). Effect of focal cochlear vascular lesion on endocochlear potential in guinea pigs. *Hear. Res.*, **89**, 69-75.
- Huang, G. T., Rosowski, J. J. & Peake, W. T. (2000). Relating middle-ear acoustic performance to body size in the cat family: measurements and models. *J. Comp. Physiol. A.*, **186**, 447-465.
- Huang, G. T., Rosowski, J. J., Puria, S. & Peake, W. T. (2000). Tests of some common assumptions of ear-canal acoustics in cats. *J. Acoust. Soc. Am.*, **108**, 1147-1161.
- Huang, X. & Buck, J. R. (2000). Autoregressive synthesis of bottlenose dolphin whistles. *J. Acoust. Soc. Am.*, **108**, 2636.
- Huang, G. T., Rosowski, J. J., Flandermeyer, D. T., Lynch III, T. J. & Peake, W. T. (1997). The middle ear of a lion: comparison of structure and function to domestic cat. *J. Acoust. Soc. Am.*, **101**, 1532-1549.
- Hudspeth, A. J. & Gillespie, P. G. (1994). Pulling springs to tune transduction: Adaptation by hair cells. *Neuron*, **12**, 1-9.
- Huffman, R. F. & Henson, O. W. (1991). Cochlear and CNS tonotopy: normal physiological shifts in the mustached bat. *Hear. Res.*, **56**, 79-85.
- Huffman, R. F., Argeles, P. C. & Covey, E. (1998). Processing of sinusoidally frequency modulated signals in the nuclei of the lateral lemniscus of the big brown bat, *Eptesicus fuscus*. *Hear. Res.*, **126**, 161-180.
- Hutson, G. D., Wilkinson, J. L. & Luxford, B. G. (1991). The response of lactating sows to tactile, visual and auditory stimuli associated with a model piglet. *Appl. Anim. Behav. Sci.*, **32**, 129-137.
- Hutson, G. D., Price, E. O. & Dickenson, L. G. (1993). The effect of playback volume and duration on the response of sows to piglet distress calls. *Appl. Anim. Behav. Sci.*, **37**, 31-37.
- Huynh, Q. Q., Cooper, L. N., Intrator, N. & Shouval, H. (1998). Classification of underwater mammals using feature extraction based on time-frequency analysis and BCM theory. *IEEE Trans. Signal Process.*, **46**, 1202-1207.
- Ibanez, C., Guillen, A., Juste, J. & Perez-Jorda, J. L. (1999). Echolocation calls of *Pteronotus davyi* (Chiroptera:

- Mormoopidae) from Panama. *J. Mammal.*, **80**, 924-928.
- Ihnat, R., White, N. R. & Barfield, R. J. (1995). Pup's broadband vocalizations and maternal behavior in the rat. *Behav. Processes*, **33**, 257-272.
- Illich, P. A., Parker, C. W. III, Burks, K. D. & Grau, J. W. (1992). Mild shock produces an unconditioned naltrexone insensitive increase in reactivity on the vocalization magnitude and threshold tests. *Soc. Neurosci. Abstr.*, **18**, 1026.
- Illing, R.-B., Cao, Q. L., Forster, C. R. & Laszig, R. (1999). Auditory brainstem: Development and plasticity of GAP-43 mRNA expression in the rat. *J. Comp. Neurol.*, **412**, 353-372.
- Insel, T. R., Miller, L. P., Gelhard, R. G. & Hill, J. (1988). Rat pup ultrasonic isolation calls and the benzodiazepine receptor. In *The Physiology of Mammalian Vocalization* (J. D. Newman, ed.). Plenum Press; New York, pp. 331-342.
- Insley, S. J. (2000). Long-term vocal recognition in the northern fur seal. *Nature*, **406**, 404-405.
- Insley, S. J. (2001). Mother-offspring vocal recognition in northern fur seals is mutual but asymmetrical. *Anim. Behav.*, **61**, 129-137.
- Irvine, D. R. F., Rajan, R. & Aitkin, L. M. (1996). Sensitivity to interaural intensity differences of neurons in primary auditory cortex of the cat. I. Types of sensitivity and effects of variations in sound pressure level. *J. Neurophysiol.*, **75**, 75-96.
- Isaeva, I. V., Volodin, I. A. & Volodina, E. V. (2000). Vocalization reflects type of social encounter in the dhole (*Cuon alpinus*). *Adv. Ethol.*, **35**, 41.
- Isaeva, I. V., Volodin, I. A. & Volodina, E. V. (2001). Two sounds simultaneously is not a problem for the dhole *Cuon alpinus*. *Adv. Ethol.*, **36**, 183-184.
- Ison, J. R. & Agrawal, P. (1998). The effect of spatial separation of signal and noise on masking in the free field as a function of signal frequency and age in the mouse. *J. Acoust. Soc. Am.*, **104**, 1689-1695.
- Ivanoff, D. V. V. (2001). Partitions in the carnivoran auditory bulla: their formation and significance for systematics. *Mammal Review*, **31**, 1-16.
- Jacobs, M., Nowacek, D. P., Gerhardt, D. J., Cannon, G., Nowicki, S. & Forward, R. B. Jr. (1993). Seasonal changes in vocalizations during behavior of the Atlantic bottlenose dolphin. *Estuaries*, **16**, 241-246.
- Janik, V. M., Dehnhardt, G. & Todt, D. (1994). Signature whistle variations in a bottlenose dolphin, *Tursiops truncatus*. *Behav. Ecol. Sociobiol.*, **35**, 243-248.
- Janik, V. M. (1997). Whistle matching in wild bottlenose dolphins. *J. Acoust. Soc. Am.*, **101**, 3136.
- Janik, V. M. & Slater, P. J. B. (1998). Context-specific use suggests that bottlenose dolphin signature whistles are cohesion calls. *Anim. Behav.*, **56**, 829-838.
- Janik, V. M. (1997). Food related calling in bottlenose dolphins, *Tursiops truncatus*. *Adv. Ethol.*, **32**, 123.
- Janik, V. M. (1999). Pitfalls in the categorization of behaviour: a comparison of dolphin whistle classification methods. *Anim. Behav.*, **57**, 133-143.
- Janik, V. M. (1995). Context-related vocalizations in bottlenosed dolphins. *Bioacoustics*, **6**, 219-220.
- Janik, V. M. (2000). Food-related bray calls in wild bottlenose dolphins (*Tursiops truncatus*). *Proc. Roy. Soc. Lond. B.*, **267**, 923-927.
- Janik, V. M. & Slater, P. J. B. (2000). The different roles of social learning in vocal communication. *Anim. Behav.*, **60**, 1-11.
- Janik, V. M. & Slater, P. J. B. (1997). Vocal learning in mammals. *Adv. Study Behav.*, **26**, 59-99.
- Janik, V. M. (2000). Whistle matching in wild bottlenose dolphins (*Tursiops truncatus*). *Science*, **289**, 1355-1357.
- Janik, V. M. (2000). Source levels and the estimated active space of bottlenose dolphin (*Tursiops truncatus*) whistles in the Moray Firth, Scotland. *J. Comp. Physiol. A.*, **186**, 673-680.
- Janik, V. M., van Parijs, S. M. & Thompson, P. M. (2000). A two-dimensional acoustic localization system for marine mammals. *Mar. Mamm. Sci.*, **16**, 437-446.
- Jaquet, N., Dawson, S. & Douglas, L. (2001). Vocal behavior of male sperm whales: why do they click? *J. Acoust. Soc. Am.*, **109**, 2254-2259.
- Jen, P. H.-S. & Chen, Q.-C. (1998). The effect of pulse repetition rate, pulse intensity, and bicuculline on the minimum threshold and latency of bat inferior collicular neurons. *J. Comp. Physiol. A.*, **182**, 455-465.
- Jen, P. H.-S. & Feng, R. B. (1999). Bicuculline application affects discharge pattern and pulse-duration tuning characteristics of bat inferior collicular neurons. *J. Comp. Physiol. A.*, **184**, 185-194.
- Jenkins, P. F., Helweg, D. A. & Cato, D. (1995). Humpback whale song in Tonga: Preliminary results. In *Sensory Systems of Aquatic Mammals* (R. A. Kastelein, J. A. Thomas & P. E. Nachtigall, eds.). De Spil Publishers; Woerden, The Netherlands, pp. 335-348.
- Jensen, M. E. & Miller, L. A. (1999). Echolocation signals of the bat *Eptesicus serotinus* recorded using a vertical microphone array: effect of flight altitude on searching signals. *Behav. Ecol. Sociobiol.*, **47**, 60-69.
- Jiang, J. J., Raviv, J. R. & Hanson, D. G. (2001). Comparison of the phonation-related structures among pig,

- dog, white-tailed deer, and human larynges. *Ann. Otol. Rhinol. Laryngol.*, **110**, 1120-1125.
- Job, D. A., Boness, D. J. & Francis, J. M. (1995). Individual variation in nursing vocalizations of Hawaiian monk seal pups, *Monachus schauinslandi* (Phocidae, Pinnipedia), and lack of maternal recognition. *Can. J. Zool.*, **73**, 975-983.
- Joermann, G., Schmidt, U. & Schmidt, C. (1988). The mode of orientation during flight and approach to landing in two phyllostomid bats. *Ethology*, **78**, 332-340.
- Johnson, C. S. (1991). Hearing thresholds for periodic 60-kHz tone pulses in the beluga whale. *J. Acoust. Soc. Am.*, **89**, 2996-3001.
- Johnson, M., Tyack, P., Nowacek, D. & Shorter, A. (2000). A digital acoustic recording tag for measuring the response of marine mammals to sound. *J. Acoust. Soc. Am.*, **108**, 2582.
- Johnson, C. S. (1997). A window into the acoustics of whales and dolphins. *J. Acoust. Soc. Am.*, **102**, 3101.
- Johnson, R. A., Moore, P. W. B., Stoermer, M. W., Pawloski, J. L. & Anderson, L. C. (1988). Temporal order discrimination within the dolphin critical interval. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Publishing Corp.; New York, pp. 317-321.
- Johnson, G. S. (1986). Dolphin audition and echolocation capabilities. In *Dolphin Cognition and Behavior: A Comparative Approach* (R. J. Schusterman, J. A. Thomas & F. G. Wood, eds.). Lawrence Erlbaum Associates; Hillsdale, New Jersey, pp. 115-136.
- Jones, J. C., Browne, R. W., di Meglio, A. & Wang, L. S. (1997). Dolphin vocalisation analysis using an ADSP 21020. *IEEE Coll. DSP Chips Real Time Instr. Displ. Syst.*, **10**, 1-5.
- Jones, G., Sripathi, K., Waters, D. A. & Marimuthu, G. (1994). Individual variation in the echolocation calls of three sympatric Indian hipposiderid bats and an experimental attempt to jam bat echolocation. *Folia Zooligica*, **43**, 347-362.
- Jones, G. & Rydell, J. (1994). Foraging strategy and predation risk as factors influencing emergence time in echolocating bats. *Phil Trans. Roy. Soc. B.*, **346**, 445-455.
- Jones, G. & Kokurewicz, T. (1994). Sex and age variation in echolocation calls and flight morphology of Daubenton's bats *Myotis daubentonii*. *Mammalia*, **58**, 41-50.
- Jones, G. (1996). Does echolocation constrain the evolution of body size in bats? In *Miniature Vertebrates: The Implications of Small Size* (P. J. Miller, ed.). *Symp. Zool. Soc. Lond.*, **69**, 111-128.
- Jones, G. (1995). Variation in bat echolocation: implications for resource partitioning and communication. *Le Rhinolophe*, **11**, 53-59.
- Jones, G. (1994). Scaling of wingbeat and echolocation pulse emission rates in bats: why are aerial insectivores so small? *Funct. Ecol.*, **8**, 450-457.
- Jones, G. (1992). Bats vs moths: studies on the diets of rhinolophid and hipposiderid bats support the allotonic frequency hypothesis. In *Prague Studies in Mammalogy* (I. Horacek & V. Vohralik, eds.). Charles Univ. Press; Praha, pp. 87-92.
- Jones, G. (1990). Prey selection by the greater horseshoe bat (*Rhinolophus ferrumequinum*): optimal foraging by echolocation? *J. Anim. Ecol.*, **59**, 587-602.
- Jones, G. (1999). Scaling of echolocation call parameters in bats. *J. Exp. Biol.*, **202**, 3359-3368.
- Jones, G. (1995). Flight performance, echolocation and foraging behaviour in noctule bats *Nyctalus noctula*. *J. Zool.*, **237**, 303-312.
- Jones, G. & van Parijs, S. M. (1993). Bimodal echolocation in pipistrelle bats: Are cryptic species present? *Proc. R. Soc. Lond. B.*, **251**, 119-125.
- Jones, G. & Ransome, R. D. (1993). Echolocation calls of bats are influenced by maternal effects and change over a lifetime. *Proc. R. Soc. Lond. Ser. B. Biol. Sci.*, **252**, 125-128.
- Jones, G. & Corben, C. (1993). Echolocation calls from six species of microchiropteran bats in south-eastern Queensland. *Austral. Mammal.*, **16**, 35-38.
- Jones, G. J. & Sayigh, L. S. (2002). Geographic variation in rates of vocal production of free-ranging bottlenose dolphins. *Mar. Mamm. Sci.*, **18**, 374-393.
- Jones, G. (1997). Acoustic signalling and speciation: the roles of natural and sexual selection in the evolution of cryptic species. *Adv. Study Behav.*, **26**, 317-354.
- Jones, G. (1993). Some techniques for the detection, recording and analysis of echolocation calls from wild bats. *Proceedings of the first European Bat Detector Workshop* (K. Kapteyn, ed.). Netherlands Bat Research Foundation; Amsterdam.
- Jones, G., Morton, M., Hughes, P. M. & Budden, R. M. (1993). Echolocation, flight morphology and foraging strategies of some West African hipposiderid bats. *J. Zool.*, **230**, 385-400.
- Jourdan, D., Ardid, D. & Eschali er, A. (2002). Analysis of ultrasonic vocalisation does not allow chronic pain to be evaluated in rats. *Pain*, **95**, 165-173.
- Judd, T. M. & Sherman, P. W. (1996). Naked mole-rats recruit colony mates to food sources. *Anim. Behav.*, **52**, 957-969.
- Kalko, E. K. V. (1995). Echolocation signal design, foraging habitats and guild structure in six neotropical

- sheath-tailed bats (Emballonuridae). *Symp. Zool. Soc. Lond.*, **67**, 259-273.
- Kalko, E. (1991). On hunting and echolocation behaviour in Daubenton's bat (*Myotis daubentoni*, Kuhl, 1819) at the Rhein near Karlsruhe. *Carolinea*, **49**, 95-100 (German).
- Kalko, E. & Schnitzler, H.-U. (1989). The echolocation and hunting behaviour of Daubenton's bat *Myotis daubentoni*. *Behav. Ecol. Sociobiol.*, **24**, 225-238.
- Kalko, E. K. V. (1994). Coupling of sound emission and wingbeat in naturally foraging European pipistrelle bats (Microchiroptera: Vespertilionidae) while foraging. *Folia Zool.*, **43**, 363-376.
- Kalko, E. K. V. (1995). Insect pursuit, prey capture and echolocation in pipistrelle bats (Microchiroptera). *Anim. Behav.*, **50**, 861-880.
- Kalko, E. K. V. (1995). Predator-prey interactions: Evidence for predictive pursuit strategies in naturally foraging aerial insectivorous bats. *Am. Zool.*, **35**, 40A.
- Kalko, E. K. V. & Schnitzler, H.-U. (1989). Two-wave-front interference patterns in frequency-modulated echolocation signals of bats flying low over water. *J. Acoust. Soc. Am.*, **85**, 961-962.
- Kalko, E. K. V. & Schnitzler, H. U. (1993). Plasticity in echolocation signals of European pipistrelle bats in search flight: implications for habitat use and prey detection. *Behav. Ecol. Sociobiol.*, **33**, 415-428.
- Kalko, E. K. V. (1999). Echolocation behaviour in bats (Microchiroptera): Ecological, ethological and evolutionary approaches. *Ethology*, **34** (Suppl.), 12.
- Kalko, E. K. V., Schnitzler, H.-U., Kaipf, I. & Grinnell, A. D. (1998). Echolocation and foraging behavior of the lesser bulldog bat, *Noctilio albiventris*: preadaptations for piscivory? *Behav. Ecol. Sociobiol.*, **42**, 305-319.
- Kamminga, C. (1994). Research on Dolphin Sounds. Doctoral Thesis. Technical University of Delft.
- Kamminga, C. (1987). Structural information theory of bio-sonar, the odontocete echolocation signal. *Proc. 8th Symp. Inf. Theor. Benelux*, p. 77.
- Kamminga, C. & Cohen Stuart, A. B. (1995). Wave shape estimation of delphinid sonar signals, a parametric model approach. *Acoustics Lett.*, **19**, 70-76.
- Kamminga, C. & Cohen Stuart, A. B. (1996). Parametric modelling of polycyclic dolphin sonar wave shapes. *Acoustics Lett.*, **19**, 237-244.
- Kamminga, C., Cohen Stuart, A. & Silber, G. K. (1996). Investigations on cetacean sonar 2: Intrinsic comparison of the wave shapes of some members of the Phocoenidae family. *Aquat. Mamm.*, **22**, 45-55.
- Kamminga, G., Cohen Stuart, A. B. & de Bruin, M. G. (1998). A time-frequency entropy measure of uncertainty applied to dolphin echolocation signals. *Acoustics Lett.*, **21**, 155-160.
- Kanis, L. J. & Deboer, E. (1993). Self-suppression in a locally active nonlinear model of the cochlea: a quasi-linear approach. *J. Acoust. Soc. Am.*, **94**, 3199-3206.
- Kanno, H., Ohtani, I., Hara, A. & Kusakari, J. (1993). The effect of endocochlear potential suppression upon susceptibility to acoustic trauma. *Acta Oto-Laryngol.*, **113**, 26-30.
- Kanwal, J. S., Matsumura, S., Ohlemiller, K. & Suga, N. (1994). Analysis of acoustic elements and syntax in communication sounds emitted by mustached bats. *J. Acoust. Soc. Am.*, **96**, 1229-1254.
- Kanwal, J., Suga, N. & Matsumura, Y. (1994). The vocal repertoire of the moustached bat, *Pteronotus parnelli*. *J. Acoust. Soc. Am.*, **96**, 1229-1254.
- Kanwal, J. S. (1999). Processing species-specific calls by combination-sensitive neurons in an echolocating bat. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 133-157.
- Kanwal, J. S., Fitzpatrick, D. C. & Suga, N. (1999). Facilitatory and inhibitory frequency tuning of combination sensitive neurons in the primary auditory cortex of mustached bats. *J. Neurophysiol.*, **82**, 2327-2345.
- Kapteyn, K. (1993). Intraspecific variation in echolocation of vespertilionid bats and its implications for identification. In *Proceedings of the First European Bat Detector Workshop* (K. Kapteyn, ed.). Netherlands Bat Research Foundation; Amsterdam, pp. 45-57.
- Kasanen, S. & Algers, B. (2002). A note on the effects of additional sow gruntings on suckling behaviour in piglets. *Appl. Anim. Behav. Sci.*, **75**, 92-101.
- Kaschner, K., Goodson, A. D., Connelly, P. R. & Lepper, P. A. (1998). Acoustic species-characteristic features of communication signals of marine mammals: the potential of source level estimates for some free-ranging north Atlantic odontocetes. *Bioacoustics*, **9**, 230-231.
- Kashiwagi, E. & Okamoto, Y. (1988). The simulation of bat and dolphin signals and the estimate of their vocal tract shapes. *J. Acoust. Soc. Japan*, **9**, 97-102.
- Kastak, D. (1998). Low-frequency amphibious hearing in pinnipeds: methods, measurements, noise and ecology. *J. Acoust. Soc. Am.*, **103**, 2216-2228.
- Kastak, D. & Schusterman, R. J. (1999). In-air and underwater hearing sensitivity of a northern elephant seal (*Mirounga angustirostris*). *Can. J. Zool.*, **77**, 1751-1758.
- Kastak, D. & Schusterman, R. J. (1997). Aerial and underwater hearing sensitivity of a northern elephant seal (*Mirounga angustirostris*). *J. Acoust. Soc. Am.*, **102**, 3103.

- Kastak, D., Schusterman, R. J., Southall, B. L. & Reichmuth, C. J. (1999). Underwater temporary threshold shift induced by octave-band noise in three species of pinniped. *J. Acoust. Soc. Am.*, **106**, 1142-1148.
- Kastelein, R. A., Rippe, H. T., Vaughan, N., Schooneman, N. M., Verboom, W. C. & de Haan, D. (2000). The effects of acoustic alarms on the behavior of harbor porpoises (*Phocoena phocoena*) in a floating pen. *Mar. Mamm. Sci.*, **16**, 46-64.
- Kastelein, R. A., Au, W. W. L., Rippe, H. T. & Schooneman, N. M. (1999). Target detection by an echolocating harbor porpoise (*Phocoena phocoena*). *J. Acoust. Soc. Am.*, **105**, 2493-2498.
- Kehoe, P., Callahan, M., Daigle, A., Mallinson, K. & Brudzynski, S. (2001). The effect of cholinergic stimulation on rat pup ultrasonic vocalizations. *Dev. Psychobiol.*, **38**, 92-100.
- Kehoe, P. & Harris, J. C. (1989). Ontogeny of noradrenergic effects on ultrasonic vocalizations in rat pups. *Behav. Neurosci.*, **103**, 1099-1107.
- Kelly, J. B. & Potash, M. (1986). Directional responses to sounds in young gerbils (*Meriones unguiculatus*). *J. Comp. Psychol.*, **100**, 37-45.
- Kendrick, K. M., Atkins, K., Hinton, M. R., Broad, K. D., Fabre-Nys, C. & Keverne, B. (1995). Facial and vocal discrimination in sheep. *Anim. Behav.*, **49**, 1665-1676.
- Ketten, D. R., Odell, D. K. & Domning, D. P. (1993). Structure, function, and adaptation of the manatee ear. In *Marine Mammal Sensory Systems* (J. Thomas, R. A. Kastelein & Y. Yu. Supin, eds.). Plenum Press; New York, pp. 77-95.
- Ketten, D. R. (1994). Functional analyses of whale ears: adaptations for underwater hearing. *IEEE Proceedings in Underwater Acoustics*, **4**, 264-270.
- Ketten, D. R. (1997). Structure and function in whale ears. *Bioacoustics*, **8**, 103-135.
- Kikusui, T., Takeuchi, Y. & Mori, Y. (2000). Involvement of corticotropin-releasing factor in the retrieval process of fear-conditioned ultrasonic vocalization in rats. *Physiol. Behav.*, **71**, 323-328.
- Killebrew, D. A., Mercado, E. III, Herman, L. M. & Pack, A. A. (2001). Sound production of a neonate bottlenose dolphin. *Aquat. Mamm.*, **27**, 34-44.
- King, A. J. (1993). A map of auditory space in the mammalian brain: neural computation and development. *Exp. Physiol.*, **78**, 559-590.
- King, A. J. & Carlile, S. (1993). Changes induced in the representation of auditory space in the superior colliculus by rearing ferrets with binocular eyelid suture. *Exp. Brain Res.*, **94**, 444-455.
- Kingston, T., Jones, G., Akbar, Z. & Kunz, T. H. (1999). Echolocation signal design in Kerivoulinae and Murininae (Chiroptera: Vespertilionidae) from Malaysia. *J. Zool.*, **249**, 359.
- Kingston, T., Jones, G., Akbar, Z. & Kunz, T. H. (2000). Social calls in clear-winged woolly bats *Kerivoula pellucida* from Malaysia. *Bioacoustics*, **11**, 1-16.
- Kirkegaard, M. & Joergensen, J. M. (2000). Continuous hair cell turnover in the inner ear vestibular organs of a mammal, the Daubenton's bat (*Myotis daubentonii*). *Naturwissenschaften*, **87**, 83-86.
- Kleiser, A. & Schuller, G. (1995). Responses of collicular neurons to acoustic motion in the horseshoe bat *Rhinolophus rouxi*. *Naturwissenschaften*, **82**, 337-340.
- Klinke, R., Kral, A., Heid, S., Tillein, J. & Hartmann, R. (1999). Recruitment of the auditory cortex in congenitally deaf cats by long-term cochlear electrostimulation. *Science*, **285**, 1729-1733.
- Klishin, V. O., Diaz, R. P., Popov, V. V. & Supin, Y. (1990). Some characteristics of hearing of the Brazilian manatee, *Trichechus inunguis*. *Aquat. Mammals*, **16**, 129-144.
- Knapp, D. J., Benjamin, D., Ahmad, Y., Stern, J. & Pohorecky, L. A. (1992). Interaction of gepirone and homocysteic acid on ultrasonic vocalizations and other fear related behaviors in adult rats. *Soc. Neurosci. Abstr.*, **18**, 1535.
- Knapp, D. J. & Pohorecky, L. A. (1995). An air-puff stimulus method for elicitation of ultrasonic vocalizations in rats. *J. Neurosci. Meth.*, **62**, 1-5.
- Knowlton, A. R., Clark, C. W. & Kraus, S. D. (1991). Sounds recorded in the presence of sei whales (*B. borealis*). *Abstr. 9th Bien. Conf. Biol. Mar. Mamm., Chicago*, p. 40.
- Koay, G., Heffner, R. S. & Heffner, H. E. (1998). Hearing in a megachiropteran fruit bat (*Rousettus aegyptiacus*). *J. Comp. Psychol.*, **112**, 371-382.
- Kobler, J. B., Isbey, S. F. & Casseday, J. H. (1987). Auditory pathways to the frontal cortex of the mustache bat, *Pteronotus parnellii*. *Science*, **236**, 824-826.
- Koehler, D. & Wallschlaeger, D. (1987). On the calls of *Neomys fodiens* (Insectivora: Soricidae). *Zool. Jb. Physiol.*, **91**, 89-99 (German).
- Koene, P. (1997). Communication of Scottish highland bulls: context specific and individual specific vocalisations. *Adv. Ethol.*, **32**, 124.
- Koessl, M., Frank, G., Burda, H. & Mueller, M. (1996). Acoustic distortion products from the cochlea of the blind African mole rat, *Cryptomys* sp. *J. Comp. Physiol. A.*, **178**, 427-434.
- Koessl, M. & Vater, M. (1996). A tectorial membrane fovea in the cochlea of the mustached bat. *Naturwissenschaften*, **83**, 89-92.

- Koessl, M. & Vater, M. (1990). Resonance phenomena in the cochlea of the mustache bat and their contribution to neuronal response characteristics in the cochlear nucleus. *J. Comp. Physiol.*, **166**, 711-720.
- Koessl, M. & Vater, M. (1996). Further studies on the mechanics of the cochlear partition in the mustached bat. II. A second cochlear frequency map derived from acoustic distortion products. *Hear. Res.*, **94**, 78-86.
- Koessl, M. (1992). High-frequency two-tone distortions from the ear of the mustached bat, *Pteronotus parnellii*, reflect enhanced cochlear tuning. *Naturwissenschaften*, **79**, 425-427.
- Korada, S. & Schwarz, I. R. (1999). Development of GABA, glycine and their receptors in the auditory brainstem of gerbil: A light and electron microscopic study. *J. Comp. Neurol.*, **409**, 664-681.
- Kraebel, K. S., Brassler, S. M., Campbell, J. O., Spear, L. P. & Spear, N. E. (2002). Developmental differences in temporal patterns and potentiation of isolation-induced ultrasonic vocalizations: Influence of temperature variables. *Dev. Psychobiol.*, **40**, 147-159.
- Kremliovsky, M., Kadtke, J., Inghiosa, M. & Moore, P. (1998). Characterization of dolphin acoustic echolocation data using a dynamical classification method. *Int. J. Bifurc. Chaos Appl. Sci. Eng.*, **8**, 813-823.
- Kringleboth, M. (2000). Frequency characteristics of sound transmission in middle ears from Norwegian cattle, and the effect of static pressure differences across the tympanic membrane and the footplate. *J. Acoust. Soc. Am.*, **107**, 1442-1450.
- Kringleboth, M. (2000). Acoustic impedances at the oval window, and sound pressure transformation of the middle ear in Norwegian cattle. *J. Acoust. Soc. Am.*, **108**, 1094-1104.
- Krull, D. (1992). *Hunting behaviour and echolocation in Antrozous pallidus (Chiroptera: Vespertilionidae)*. Ph.D. Thesis. University of Munich. (German).
- Krumbholz, K. & Schmidt, S. (1999). Perception of complex tones and its analogy to echo spectral analysis in the bat, *Megaderma lyra*. *J. Acoust. Soc. Am.*, **105**, 898-911.
- Kuc, R. (1994). Sensorimotor model of bat echolocation and prey capture. *J. Acoust. Soc. Am.*, **96**, 1965-1978.
- Kudoh, M. & Shibuki, K. (1996). Long-term potentiation of supragranular pyramidal outputs in the rat auditory cortex. *Exp. Brain Res.*, **110**, 21-27.
- Kuenzi, A. J. & Morrison, M. L. (1998). Detection of bats by mist-nets and ultrasonic sensors. *Wildl. Soc. Bull.*, **26**, 307-311.
- Kunnasranta, M., Hyvaerinen, H. & Sorjonen, J. (1996). Underwater vocalizations of Ladoga ringed seals (*Phoca hispida ladogensis* Nordq.) in summertime. *Mar. Mamm. Sci.*, **12**, 611-618.
- Kuse, H. & Okaniwa, A. (1993). Postnatal development of the auditory brainstem response (ABR) in beagles. *Exp. Anim.* (Tokyo), **42**, 377-382.
- Kuwada, S. & Batra, R. (1999). Coding of sound envelopes by inhibitory rebound in neurons of the superior olivary complex in the unanesthetized rabbit. *J. Neurosci.*, **19**, 2273-2287.
- Laffon, E., Dulon, D., Pouligny, B., Blanchet, C. & Aran, J. M. (1993). Mammalian cochlear outer hair cells' density evaluated by means of an optical tweezer. *Biochem. Biophys. Res. Comm.*, **196**, 363-368.
- Lambert, P. R. (1994). Inner ear hair cell regeneration in a mammal: Identification of a triggering factor. *Laryngoscope*, **104**, 701-718.
- Lammers, M. O., Au, W. W. L. & Aubauer, R. (1997). Broadband characteristics of spinner dolphin (*Stenella longirostris*) social acoustic signals. *J. Acoust. Soc. Am.*, **102**, 3122.
- Lancaster, W. C. (1995). Respiratory muscle function in relation to vocalization in flying bats. *Bioacoustics*, **6**, 218-219.
- Lancaster, W. C., Fenton, M. B. & Eger, J. (2000). Morphology of the axial skeleton in relation to the style of biosonar. *Bat Res. News*, **41**, 126.
- Lancaster, W. C. & Speakman, J. R. (2001). Variations in respiratory muscle activity during echolocation when stationary in three species of bat (Microchiroptera: Vespertilionidae). *J. Exp. Biol.*, **204**, 4185-4197.
- Lancaster, W. C. & Speakman, J. R. (1999). Respiratory muscle recruitment in echolocation: Interspecific variation and implications for efficiency. *Bat Res. News*, **40**, 178.
- Lancaster, W. C. (2001). The engine for echolocation as a constraint on the size of bats. *J. Morphol.*, **248**, 253.
- Lancaster, W. C. (1993). Abdominal muscle activity and vocalization in bats. *Am. Zool.*, **32**, 146A.
- Lancaster, W. C., Ward, S., Jones, G. & Speakman, J. R. (2000). Energetics of biosonar vocalization in stationary insectivorous bats. *Am. Zool.*, **40**, 1094-1095.
- Lancaster, W. C., Keating, A. W. & Henson, O. W. Jr. (1992). Ultrasonic vocalizations of flying bats monitored by radiotelemetry. *J. Exp. Biol.*, **173**, 43-58.
- Langbauer, W. R. jr. (2000). Elephant communication. *Zoo Biology*, **19**, 425-445.
- Larom, D., Garstang, M., Payne, K., Raspel, R. & Lindeque, M. (1997). The influence of surface atmospheric conditions on the range and area reached by animal vocalizations. *J. Exp. Biol.*, **200**, 421-431.
- Larom, D., Garstang, M., Lindeque, M., Raspel, R., Zunckel, M., Hong, Y., Brassel, K., O'Beirne, S. & Sokolic, F. (1997). Meteorology and elephant infrasound at Etosha National Park, Namibia. *J. Acoust. Soc. Am.*, **101**, 1710-1717.

- Leaper, R., Chappell, O. & Gordon, J. C. D. (1992). The development of practical techniques for surveying sperm whale populations acoustically. *Rep. Int. Whal. Commn.*, **45**, 549-560.
- Leaper, R., Gillespie, D. & Papastavrou, V. (2000). Results of passive acoustic surveys for odontocetes in the Southern Ocean. *J. Cetac. Res. Manage.*, **2**, 187-196.
- Lecanuet, J.-P., Gautheron, B., Locatelli, A., Schaal, B., Jacquet, A.-Y. & Busnel, M.-C. (1998). What sounds reach fetuses: Biological and nonbiological modeling of the transmission of pure tones. *Dev. Psychobiol.*, **33**, 203-220.
- Lee, D. N., van der Weel, F. R., Hitchcock, T., Matejowsky, E. & Pettigrew, J. D. (1992). Common principle of guidance by echolocation and vision. *J. Comp. Physiol. A.*, **171**, 563-572.
- Lee, D. N., Simmons, J. A., Saillant, P. A. & Bouffard, F. (1995). Steering by echolocation: A paradigm of ecological acoustics. *J. Comp. Physiol. A.*, **176**, 347-354.
- Lefebvre, P. P., Malgrange, B., Staecker, H., Moonen, G. & Vandewater, T. R. (1993). Retinoic acid stimulates regeneration of mammalian auditory hair cells. *Science*, **260**, 692-695.
- Lei, Y. & Raichel, D. R. (1997). The use of CF/FM sounds in bats. *J. Acoust. Soc. Am.*, **101**, 3137.
- Leippert, D. (1994). Social behaviour on the wing in the false vampire, *Megaderma lyra*. *Ethology*, **98**, 111-127.
- Lemons, D. W., Au, W. W. L., Nachtigall, P. E., Vlachos, S. & Roitblat, H. L. (1997). Auditory frequency selectivity and masked hearing capabilities in an Atlantic bottlenose dolphin. *J. Acoust. Soc. Am.*, **102**, 3102.
- Lemons, D. W., Au, W. W. L., Nachtigall, P. E., Roitblat, H. L. & Vlachos, S. A. (2000). High-frequency auditory filter shapes in an Atlantic bottlenose dolphin. *J. Acoust. Soc. Am.*, **108**, 2614.
- Lepper, P. A., Kaschner, K., Connelly, P. R. & Goodson, A. D. (1998). Development of a simplified ray path model for estimating the range and depth of vocalising marine mammals. *Bioacoustics*, **9**, 231-232.
- Leroy, S. A. & Wenstrup, J. J. (2000). Spectral integration in the inferior colliculus of the mustached bat. *J. Neurosci.*, **20**, 8533-8541.
- Lesage, V., Barrette, C., Kingsley, M. C. S. & Sjare, B. (1999). The effect of vessel noise on the vocal behavior of belugas in the St. Lawrence River Estuary, Canada. *Mar. Mamm. Sci.*, **15**, 65-84.
- Lettevall, E., Ugarte, F. & Wahlberg, M. (1996). Inter-calibration of body length estimates of sperm whales. *European Research on Cetaceans*, **9**, 34-37.
- Liang, M. & Palakal, M. J. (1997). A multiple target acoustic scene representation model for bat echolocation signals. *J. Acoust. Soc. Am.*, **101**, 3137.
- Lieberman, M. C. (1991). Central projections of auditory nerve fibers of differing spontaneous rate. I. Anteroventral cochlear nucleus. *J. Comp. Neurol.*, **313**, 240-258.
- Lieberman, M. C. & Brown, M. C. (1986). Physiology and anatomy of single olivocochlear neurons in the cat. *Hear. Res.*, **24**, 17-36.
- Lin, Z.-B., Chittajallu, S. K., Kayalar, S., Wong, D. & Yurtseven, H. O. (1991). Modeling constant best delay-sensitive neurons and tracking neurons in the auditory cortex of the FM bat with a back-propagation neural network. *IEEE Conf. Neur. Networks Ocean Engin.*, pp. 123-132.
- Lisicina, T. Yu. (1996). Acoustic communication of Pinnipedia in agonistic behaviour. *Bioacoustics*, **6**, 312-313.
- Litovsky, R. Y. (1998). Physiological studies of the precedence effect in the inferior colliculus of the kitten. *J. Acoust. Soc. Am.*, **103**, 3139-3152.
- Liu, R. C., Linden, J. F., Miller, K. D., Merzenich, M. M. & Schreiner, C. E. (2001). Neural responses to ultrasound vocalizations in the mouse auditory cortex. *Soc. Neurosci. Abstr.*, **27**, 1345.
- Liu, W. & Suga, N. (1997). Binaural and commissural organization of the primary auditory cortex of the mustached bat. *J. Comp. Physiol. A.*, **181**, 599-605.
- Ljungblad, D. K., Stafford, K. M., Shimada, H. & Matsuoka, K. (1997). Sounds attributed to blue whales recorded off the southwest coast of Australia in December 1995. *Rep. Int. Whal. Commn.*, **47**, 435-439.
- Llano, D. A. & Feng, A. S. (1999). Response characteristics of neurons in the medial geniculate body of the little brown bat to simple and temporally patterned sounds. *J. Comp. Physiol. A.*, **184**, 371-385.
- Lohius, T. D. & Fuzessery, Z. M. (2000). Neuronal sensitivity to interaural time differences in the sound envelope in the auditory cortex of the pallid bat. *Hear. Res.*, **143**, 43-57.
- Lohmann, C., Ehrlich, I. & Friauf, E. (1999). Axon regeneration in organotypic slice cultures from the mammalian auditory system is topographic and functional. *J. Neurobiol.*, **41**, 596-614.
- Long, A. M., Moore, N. P. & Hayden, T. J. (1998). Vocalizations in red deer (*Cervus elaphus*), sika deer (*Cervus nippon*), and red x sika hybrids. *J. Zool.*, **244**, 123-134.
- Lopez, D. E., Saldana, E., Nodal, F. R., Merchan, M. A. & Warr, W. B. (1999). Projections of cochlear root neurons, sentinels of the rat auditory pathway. *J. Comp. Neurol.*, **415**, 160-174.
- Lucke, K. & Goodson, A. D. (1998). Off-line acoustic analysis of dolphin echolocation behaviour. *Bioacoustics*, **9**, 226-227.
- Luczkovich, J. J., Daniel III, H. J., Hutchinson, M., Jenkins, T., Johnson, S. E., Pullinger, R. C. & Sprague, M. W. (2000). Sounds of sex and death in the sea: Bottlenose dolphin whistles suppress mating choruses

- of silver perch. *Bioacoustics*, **10**, 323-334.
- Luethke, L. E., Krubitzer, L. A. & Kaas, J. H. (1988). Cortical connections of electrophysiological and architectonically defined subdivisions of auditory cortex in squirrels. *J. Comp. Neurol.*, **268**, 181-203.
- Lumley, L. A., Sipos, M. L., Charles, R. C., Charles, R. F. & Meyerhoff, J. L. (1999). Social stress effects on territorial marking and ultrasonic vocalizations in mice. *Physiol. Behav.*, **67**, 769-776.
- Luo, L., Moore, J. K., Baird, A. & Ryan, A. F. (1995). Expression of acidic FGF mRNA in rat auditory brainstem during postnatal maturation. *Dev. Brain Res.*, **86**, 24-34.
- Luo, L., Ryan, A. F. & Saint Marie, R. L. (1999). Cochlear ablation alters acoustically induced c-fos mRNA expression in the adult rat auditory brainstem. *J. Comp. Neurol.*, **404**, 271-283.
- Luo, L., Koutnouyan, H., Baird, A. & Ryan, A. F. (1993). Acidic and basic FGF mRNA expression in the adult and developing rat cochlea. *Hear. Res.*, **69**, 182-193.
- Lynn, S. K. & Pepperberg, I. M. (2001). Culture: In the beak of the beholder? *Behav. Brain Sci.*, **24**, 341-342.
- Ma, X. & Suga, N. (2001). Plasticity of bat's central auditory system evoked by focal electric stimulation of auditory and/or somatosensory cortices. *J. Neurophysiol.*, **85**, 1078-1087.
- MacDonald, K., Matsui, E., Stevens, R. & Fenton, M. B. (1994). Echolocation calls and field identification of the eastern pipistrelle (*Pipistrellus subflavus*, Chiroptera, Vespertilionidae), using ultrasonic bat detectors. *J. Mammal.*, **75**, 462-465.
- Macedonia, J. M. & Evans, C. S. (1992). Variation among mammalian alarm call systems and the problem of meaning in animal signals. *Ethology*, **93**, 177-197.
- Macedonia, J. M. & Evans, C. S. (1993). Variation among mammalian alarm call systems and the problem of meaning in animal signals. *Ethology*, **93**, 177-197.
- Madsen, P. T., Payne, R., Kristiansen, N. U., Wahlberg, M., Kerr, I. & Moehl, B. (2002). Sperm whale sound production studied with ultrasound time/depth-recording tags. *J. Exp. Biol.*, **205**, 1899-1906.
- Madsen, P. T. & Moehl, B. (2000). Sperm whales (*Physeter catodon* L 1758) do not react to sounds from detonators. *J. Acoust. Soc. Am.*, **107**, 668-671.
- Maeda, H., Higashi, N., Uchida, S., Sato, F., Yamaguchi, M., Koido, T. & Takemura, A. (2000). Songs of humpback whales *Megaptera novaeangliae* in the Ryukyu and Bonin regions. *Mammal Study*, **25**, 59-73.
- Maeda, H., Koido, T. & Takemura, A. (2000). Principal component analysis of song units produced by humpback whales (*Megaptera novaeangliae*) in the Ryukyu region of Japan. *Aquat. Mamm.*, **26**, 202-211.
- Mamode, M. & Escudie, B. (1987). Tolerance to the Doppler effect and optimal sonar signal emitted by bats. *Acustica*, **64**, 262-271 (French).
- Mandava, P., Rupert, A. L. & Moushegian, G. (1995). Vowel and vowel sequence processing by cochlear nucleus neurons. *Hear. Res.*, **87**, 114-131.
- Mandelli, M.-J. (1997). Role of ultrasonic calls during mating in the field vole, *Microtus agrestis*. *Adv. Ethol.*, **32**, 126.
- Mandelli, M.-J. & Sales, G. (1997). Ultrasound and mating behaviour in the field vole *Microtus agrestis*. *Bioacoustics*, **8**, 272.
- Mann, D. A., Zhongmin, L., Hastings, M. C. & Popper, A. N. (1998). Detection of ultrasonic tones and simulated dolphin echolocation clicks by a teleost fish, the American shad (*Alosa sapidissima*). *J. Acoust. Soc. Am.*, **104**, 562-568.
- Mann, J. (2001). Cetacean culture: Definitions and evidence. *Behav. Brain Sci.*, **24**, 343.
- Manser, M. B. (1999). Response of foraging group members to sentinel calls in suricates, *Suricata suricatta*. *Proc. Roy. Soc. Lond. B.*, **266**, 1013-1019.
- Manser, M. B. & Avey, G. (2000). The effect of pup vocalisations on food allocation in a cooperative mammal, the meerkat (*Suricata suricatta*). *Behav. Ecol. Sociobiol.*, **48**, 429-437.
- Manser, M. (1997). Begging calls in pup suricates, *Suricata suricatta*, and how they manipulate older group members to feed them. *Adv. Ethol.*, **32**, 245.
- Marchant, J. N., Whittaker, X. & Broom, D. M. (2001). Vocalisations of the adult female domestic pig during a standard human approach test and their relationships with behavioural and heart rate measures. *Appl. Anim. Behav. Sci.*, **72**, 23-39.
- Marchant, J. N., Forde, R. M. & Weary, D. M. (2000). Behavioural and heart rate responses of cows and calves to each other's vocalisations after early separation. *Proc. Brit. Soc. Anim. Sci.*, **2000**, 30.
- Marchlewska-Koj, A., Kapusta, J. & Olejniczak, P. (1999). Ultrasonic response of CBA newborn mice to bedding odour. *Behaviour*, **136**, 269-278.
- Marchlewska-Koj, A. (2000). Olfactory and ultrasonic communication in bank voles. *Polish J. Ecol.*, **48**, Suppl., 11-20.
- Maries, K. (1986). Recent developments in bat detector field instrumentation. *Myotis*, **23-24**, 249-254.
- Marimuthu, G., Habersetzer, J. & Leippert, D. (1995). Active acoustic gleaning from the water surface by the

- Indian false vampire bat, *Megaderma lyra*. *Ethology*, **99**, 61-74.
- Markowitz, H., Aday, C. & Gavazzi, A. (1995). Effectiveness of acoustic "prey": Environmental enrichment for a captive African leopard (*Panthera pardus*). *Zool. Biol.*, **14**, 371-379.
- Marten, K. (2000). Ultrasonic analysis of pygmy sperm whale (*Kogia breviceps*) and Hubbs' beaked whale (*Mesoplodon carlhubbsi*) clicks. *Aquat. Mamm.*, **26**, 45-48.
- Marten, K., Norris, K. S., Moore, P. W. B. & Englund, K. A. (1988). Loud impulse sounds in odontocete predation and social behavior. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, 567-579.
- Masters, W. M., Raver, K. A. S. & Kazial, K. A. (1995). Sonar signals of big brown bats, *Eptesicus fuscus*, contain information about individual identity, age and family affiliation. *Anim. Behav.*, **50**, 1243-1260.
- Masters, W. M. & Raver, K. A. S. (2000). Range discrimination by big brown bats (*Eptesicus fuscus*) using altered model echoes: Implications for signal processing. *J. Acoust. Soc. Am.*, **107**, 625-637.
- Masters, W. M., Jacobs, S. C. & Simmons, J. A. (1990). The structure of echolocation sounds used by the big brown bat, *Eptesicus fuscus*: some consequences for echo processing. *J. Acoust. Soc. Am.*, **89**, 1402-1413.
- Masters, W. M., Raver, K. A. S., Kornacker, K. & Burnett, S. C. (1997). Detection of jitter in intertarget spacing by the big brown bat *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **181**, 279-290.
- Masters, W. M. & Jacobs, S. C. (1989). Target detection and range resolution by the big brown bat (*Eptesicus fuscus*) using normal and time-reversed model echoes. *J. Comp. Physiol. A.*, **166**, 65-73.
- Mateo, J. M. & Holmes, W. G. (1999). Plasticity of alarm call response development in Belding's ground squirrels (*Spermophilus beldingi*, Sciuridae). *Ethology*, **105**, 193-206.
- Mateo, J. M. (1995). *The development of alarm-call responses in free-living and captive Belding's ground squirrels, Spermophilus beldingi*. Ph.D. thesis. University of Michigan; Ann Arbor.
- Mateo, J. M. (1996). The development of alarm-call response behaviour in free-living juvenile Belding's ground squirrels. *Anim. Behav.*, **52**, 489-505.
- Mateo, J. M. & Holmes, W. G. (1997). Development of alarm-call responses in Belding's ground squirrels: the role of dams. *Anim. Behav.*, **54**, 509-524.
- Mateo, J. M. & Holmes, W. G. (1999). How rearing history affects alarm call responses of Belding's ground squirrels (*Spermophilus beldingi*, Sciuridae). *Ethology*, **105**, 207-222.
- Matthews, J. N., Rendell, L. E., Gordon, J. C. D. & MacDonald, D. W. (1999). A review of frequency and time parameters of cetacean tonal calls. *Bioacoustics*, **10**, 47-71.
- Maurello, M. A., Clarke, J. A. & Ackley, R. S. (2000). Signature characteristics in contact calls of the white-nosed coati. *J. Mammal.*, **81**, 415-421.
- Mauri, L., Apollonio, M. & Centofanti, E. (1997). Preliminary analysis of wolf *Canis lupus* vocalisations recorded in the wild in Italy. *Bioacoustics*, **8**, 271.
- May, B. J. (1997). Spectral cues for sound localization in cats: A model for discharge rate representations in the auditory nerve. *J. Acoust. Soc. Am.*, **101**, 2705-2719.
- May, B. J., Huang, A. Y., Aleszczyk, C. M. & Hienz, R. D. (1995). Design and conduct of sensory experiments for domestic cats. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 95-108.
- Mayer-Kress, G. & Porter, M. A. (2001). Remarks on whale cultures from a complex systems perspective. *Behav. Brain Sci.*, **24**, 344.
- Mazzacana, E. & D'Amato, F. R. (1997). Ultrasonic vocalisations during heterosexual encounters in mice *Mus musculus*. *Bioacoustics*, **8**, 259.
- Mazzola, S., Miller, P., Guerrini, A., Bonanno, A., Patti, B., Tesler, W., Tolstoganova, L., Khakhalkina, E., Cannelli, G. B., D'Ottavi, E. & Franzitta, G. (1996). Spectral analysis of killer whale calls. *European Research on Cetaceans*, **9**, 18-21.
- Mazzola, S., Miller, P., Guerrini, A., Bonanno, A., Patti, B., Tesler, W., Tolstoganova, L., Khakhalkina, E., Bliznyuk, Y., Cannelli, G. B., D'Ottavi, E. & Franzitta, G. (1996). Preliminary results of an experiment on the effects of killer whale (*Orcinus orca*) calls on the behaviour of bottlenose dolphins (*Tursiops truncatus*). *European Research on Cetaceans*, **9**, 22-25.
- McCallum, A. & Vale, M. (1998). Contour cross-correlation vs. principal components analysis of parameters as methods of estimating distance matrices of dolphin whistles. *Bioacoustics*, **9**, 157-158.
- McComb, K., Moss, C., Durant, S. M., Baker, L. & Sayialel, S. (2001). Matriarchs as repositories of social knowledge in African elephants. *Science*, **292**, 491-494.
- McComb, K., Pusey, A., Packer, C. & Grinnell, J. (1993). Female lions can identify potentially infanticidal males from their roars. *Proc. Roy. Soc. Lond. B.*, **252**, 59-64.
- McComb, K., Packer, C. & Pusey, A. (1994). Roaring and numerical assessment in contests between groups of female lions, *Panthera leo*. *Anim. Behav.*, **47**, 379-387.
- McComb, K., Moss, C., Sayialel, S. & Baker, L. (2000). Unusually extensive networks of vocal recognition in

- African elephants. *Anim. Behav.*, **59**, 1103-1109.
- McComb, K. (1996). Studying vocal communication in elephants. In *Studying Elephants* (K. Kangwana, ed.). African Wildlife Foundation; Nairobi, pp. 112-119.
- McComb, K. (1991). Female choice for high roaring rates in red deer, *Cervus elaphus*. *Anim. Behav.*, **41**, 79-88.
- McComb, K. E. (1988). *Roaring and reproduction in red deer, Cervus elaphus*. Ph.D. thesis. University of Cambridge.
- McCowan, B. & Reiss, D. (1995). Whistle contour development in captive-born infant bottlenose dolphins (*Tursiops truncatus*): role of learning. *J. Comp. Psychol.*, **109**, 242-260.
- McCowan, B. & Reiss, D. (1997). Vocal learning in captive bottlenose dolphins: A comparison with humans and nonhuman animals. In *Social Influence on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 178-207.
- McCowan, B., Doyle, L. R. & Hanser, S. F. (2002). Using information theory to assess the diversity, complexity, and development of communicative repertoires. *J. Comp. Psychol.*, **116**, 166-172.
- McCowan, B. & Reiss, D. (1995). Quantitative comparison of whistle repertoires from captive adult bottlenose dolphins (Delphinidae, *Tursiops truncatus*): a re-evaluation of the signature whistle hypothesis. *Ethology*, **100**, 194-209.
- McCowan, B. (1995). A new quantitative technique for categorizing whistles using simulated signals and whistles from captive bottlenose dolphins (Delphinidae, *Tursiops truncatus*). *Ethology*, **100**, 177-193.
- McCowan, B. & Hooper, S. L. (2002). Individual acoustic variation in Belding's ground squirrel alarm chirps in the High Sierra Nevada. *J. Acoust. Soc. Am.*, **111**, 1157-1160.
- McCowan, B. & Reiss, D. (2001). The fallacy of 'signature whistles' in bottlenose dolphins: a comparative perspective of 'signature information' in animal vocalizations. *Anim. Behav.*, **62**, 1151-1162.
- McCowan, B., DiLorenzo, A. M., Abichandani, S., Borelli, C. & Cullor, J. S. (2002). Bioacoustic tools for enhancing animal management and productivity: effects of recorded calf vocalizations on milk production in dairy cows. *Appl. Anim. Behav. Sci.*, **77**, 13-20.
- McCowan, B., Hanser, S. F. & Doyle, L. R. (1999). Quantitative tools for comparing animal communication systems: information theory applied to bottlenose dolphin whistle repertoires. *Anim. Behav.*, **57**, 409-419.
- McCowan, B. & Reiss, D. (1995). Maternal aggressive contact vocalizations in captive bottlenose dolphins (*Tursiops truncatus*): wide band, low frequency signals during mother/aunt-infant interactions. *Zoo Biol.*, **14**, 293-309.
- McCracken, G. P., Hayes, J. P., Guffey, S. Z., Romero, C. & Cevallos, J. (1992). Variation in the echolocation calls of *Lasiurus cinereus* and *Lasiurus brachyotis* on the Galapagos Islands. *Bat Res. News*, **33**, 66.
- McCulloch, S. & Boness, D. J. (2000). Mother-pup vocal recognition in the grey seal (*Halichoerus grypus*) of Sable Island, Nova Scotia, Canada. *J. Zool.*, **251**, 449-455.
- McCulloch, S., Pomeroy, P. P. & Slater, P. J. (1999). Individually distinctive pup vocalizations fail to prevent allo-suckling in grey seals. *Can. J. Zool.*, **77**, 716-723.
- McDonald, M. A., Calambokidis, J., Teranishi, A. M. & Hildebrand, J. A. (2001). The acoustic calls of blue whales off California with gender data. *J. Acoust. Soc. Am.*, **109**, 1728-1735.
- McDonald, M. A., Hildebrand, J. A. & Webb, S. C. (1995). Blue and fin whales observed on a sea-floor array in the Northeast Pacific. *J. Acoust. Soc. Am.*, **98**, 712-721.
- McElligott, A. G. & Hayden, T. J. (2001). Postcopulatory vocalizations of fallow bucks: Who is listening? *Behav. Ecol.*, **12**, 41-46.
- McElligott, A. G. & Hayden, T. J. (1999). Context-related vocalization rates of fallow bucks, *Dama dama*. *Anim. Behav.*, **58**, 1095-1104.
- McElligott, A. G., O'Neill, K. P. & Hayden, T. J. (1999). Cumulative long-term investment in vocalization and mating success of fallow bucks, *Dama dama*. *Anim. Behav.*, **57**, 1159-1167.
- McFadden, S. L., Zheng, X.-Y. & Ding, D.-L. (2000). Conditioning-induced protection from impulse noise in female and male chinchillas. *J. Acoust. Soc. Am.*, **107**, 2162-2168.
- McFadden, S.-L., Henselman, L. W. & Zheng, X.-Y. (1999). Sex differences in auditory sensitivity of chinchillas before and after exposure to impulse noise. *Ear Hear.*, **20**, 164-174.
- McGehee, D. E. & Hildebrand, J. A. (2000). Simple methods for locating, counting, and tracking sperm whales underwater in three dimensions. *J. Acoust. Soc. Am.*, **108**, 2540.
- McGregor, I. S., Dastur, F. N., McLellan, R. A. & Brown, R. E. (1996). Cannabinoid modulation of rat pup ultrasonic vocalizations. *Eur. J. Pharmacol.*, **313**, 43-49.
- McInturf, S. M. & Hennessy, M. B. (1996). Peripheral administration of a corticotropin-releasing factor antagonist increases the vocalizing and locomotor activity of isolated guinea pig pups. *Physiol. Behav.*, **60**, 707-710.
- McShane, L. J., Estes, J. A., Riedman, M. L. & Staedler, M. M. (1995). Repertoire, structure, and individual variation of vocalizations in the sea otter. *J. Mammal.*, **76**, 414-427.

- Medlund, L. & Gordon, J. (1996). Description of coda production by sperm whales off the Azores, Portugal, 1988, 1989 and 1991. *European Research on Cetaceans*, **9**, 41.
- Mellinger, D. K. & Clark, C. W. (1993). A method for filtering bioacoustic transients by spectrogram image convolution. *Oceans '93*, **3**, 122-127.
- Mellinger, D. K. & Clark, C. W. (2000). Recognizing transient low-frequency whale sounds by spectrogram correlation. *J. Acoust. Soc. Am.*, **107**, 3518-3529.
- Mellinger, D. (1998). A low-cost, high-performance sound capture and archiving system for the subtidal zone. *Bioacoustics*, **9**, 222.
- Mellinger, D. K. & Clark, C. W. (1995). Characteristics of fin and blue whale vocalizations recorded from IUSS in the North and West Atlantic. *Eleventh Bienn. Conf. Biol. Mar. Mamm.*, 14-18 Dec. 1995, Orlando, Florida. Abstracts, p. 76.
- Mellinger, D. K., Carson, C. D. & Clark, C. W. (2000). Characteristics of minke whale (*Balaenoptera acutorostrata*) pulse trains recorded near Puerto Rico. *Mar. Mamm. Sci.*, **16**, 739-756.
- Mellinger, D. K. (1993). Handling time variability in bioacoustic transient detection. *Oceans '93*, **3**, 116-121.
- Mellinger, D. & Clark, C. W. (1994). A publicly-accessible database for marine mammal call classification research. *J. Acoust. Soc. Am.*, **96**, 3298.
- Mellinger, D. K., Thode, A. M., Martinez, A., Mullin, K. & Stienessen, S. (2000). Acoustic detection distances of sperm whales in the Gulf of Mexico. *J. Acoust. Soc. Am.*, **108**, 2539.
- Mendelson, J. R., Schreiner, C. E. & Sutter, M. L. (1997). Functional topography of cat primary auditory cortex: response latencies. *J. Comp. Physiol. A.*, **181**, 615-633.
- Meng, J. & Fox, R. C. (1993). Inner-ear structures from late cretaceous mammals and their systematic and functional implications. *J. Vertebr. Paleontol.*, **13** (3. Suppl.), 50A.
- Menne, D., Kaipf, I., Wagner, I., Ostwald, J. & Schnitzler, H.-U. (1989). Range estimation by echolocation in the bat *Eptesicus fuscus*: trading of phase versus time cues. *J. Acoust. Soc. Am.*, **85**, 2642-2650.
- Menne, D. & Hackbarth, H. (1986). Accuracy of distance measurement in the bat *Eptesicus fuscus*: theoretical aspects and computer simulations. *J. Acoust. Soc. Am.*, **79**, 386-397.
- Mercado III, E. & Frazer, L. N. (1999). Environmental constraints on sound transmission by humpback whales. *J. Acoust. Soc. Am.*, **106**, 3004-3016.
- Mercado III, E., Herman, L. M. & Pack, A. A. (1998). Stereotypical patterns in humpback whale *Megaptera novaeangliae* songs: usage and utility. *Bioacoustics*, **9**, 150.
- Merlen, G. (2000). Nocturnal acoustic location of the Galapagos fur seal *Arctocephalus galapagoensis*. *Mar. Mamm. Sci.*, **16**, 248-253.
- Mesnick, S. L. (2001). Genetic relatedness in sperm whales: Evidence and cultural implications. *Behav. Brain Sci.*, **24**, 346-347.
- Metherate, R. & Ashe, J. H. (1995). Synaptic interactions involving acetylcholine, glutamate, and GABA in rat auditory cortex. *Exp. Brain Res.*, **107**, 59-72.
- Metzner, W. (1996). Anatomical basis for audio-vocal integration in echolocating horseshoe bats. *J. Comp. Neurol.*, **368**, 252-269.
- Metzner, W. (1993). An audio-vocal interface in echolocating horseshoe bats. *J. Neurosci.*, **13**, 1899-1915.
- Metzner, W., Zhang, S. & Smotherman, M. (2002). Doppler-shift compensation behavior in horseshoe bats revisited: auditory feedback controls both a decrease and an increase in call frequency. *J. Exp. Biol.*, **205**, 1607-1616.
- Metzner, W. (1991). Echolocation behaviour in bats. *Sci. Prog.*, **75**, 453-465.
- Miczek, K. A., Fish, E. W., Sekinda, M. & Ferrari, P. F. (1999). Distress-like vocalizations in mouse pups: Role for 5HT1 and GABAA receptors. *Soc. Neurosci. Abstr.*, **25**, 58.
- Miczek, K. A. & Vivian, J. A. (1993). Automatic quantification of withdrawal from 5 day diazepam in rats: ultrasonic distress vocalizations and hyperreflexia to acoustic startle stimuli. *Psychopharmacology*, **110**, 379-382.
- Middlebrooks, J. C., Clock, A. E., Xu, L. & Green, D. M. (1994). A panoramic code for sound location by cortical neurons. *Science*, **264**, 842-844.
- Miksis, J. L., Grund, M. D., Nowacek, D. P., Solow, A. R., Connor, R. C. & Tyack, P. L. (2001). Cardiac responses to acoustic playback experiments in the captive bottlenose dolphin (*Tursiops truncatus*). *J. Comp. Psychol.*, **115**, 227-232.
- Miller, L. A. & Treat, A. E. (1993). Field recordings of echolocation and social signals from the gleaning bat *Myotis septentrionalis*. *Bioacoustics*, **5**, 67-87.
- Miller, P. J. O. (2000). *Maintaining contact: design and use of acoustic signals in killer whales (Orcinus orca)*. Ph.D. thesis. Massachusetts Institute of Technology; Woods Hole Oceanographic Institution.
- Miller, E. H. & Murray, A. V. (1995). Structure, complexity, and organization of vocalisations in harp seals (*Phoca groenlandica*). In *Sensory Systems of Aquatic Mammals* (R. A. Kastelein, J. A. Thomas and P. E. Nachtigall, eds.). De Spil Publishers; Woerden, The Netherlands, pp. 237-264.

- Miller, L. A., Pristed, J., Moehl, B. & Surlykke, A. (1995). The click-sounds of narwhals (*Monodon monoceros*) in Inglefield Bay, Northwest Greenland. *Mar. Mamm. Sci.*, **11**, 491-502.
- Miller, P. J. & Tyack, P. L. (1998). A small towed beamforming array to identify vocalizing resident killer whales (*Orcinus orca*) concurrent with focal behavioral observations. *Topical Stud. Oceanogr.*, **45**, 1389-1405.
- Miller, P. J. O. Bain, D. E. (2000). Within-pod variation in the sound production of a pod of killer whales, *Orcinus orca*. *Anim. Behav.*, **60**, 617-628.
- Miller, L. A. (1995). How some insects detect and avoid being eaten by bats: the tactics and counter tactics of prey and predator. *Am. Zool.*, **35**, 41A.
- Miller, L. A. (1991). Arctiid moth clicks can degrade the accuracy of range difference discrimination in echolocating big brown bats. *J. Comp. Physiol. A.*, **168**, 571-579.
- Miller, E. H. & Job, D. A. (1992). Airborne acoustic communication in the Hawaiian monk seal, *Monachus schauinslandi*. In *Marine Mammal Sensory Systems* (J. A. Thomas, R. A. Kastelein & Y. Ya. Supin, eds.). Plenum Press; New York, pp. 485-531.
- Miller, P. J. O., Biassoni, N., Samuels, A. & Tyack, P. L. (2000). Whale songs lengthen in response to sonar. *Nature*, **405**, 903.
- Mills, D. M., Norton, S. J. & Rubel, E. W. (1994). Development of active and passive mechanics in the mammalian cochlea. *Aud. Neurosci.*, **1**, 77-99.
- Minami, M. & Kawamichi, T. (1992). Vocal repertoires and classification of the sika deer *Cervus nippon*. *J. Mammal. Soc. Jpn.*, **17**, 71-94.
- Mitson, R. B. & Morris, R. J. (1988). Evidence of high-frequency acoustic emissions from the white-beaked dolphin (*Lagenorhynchus albirostris*). *J. Acoust. Soc. Am.*, **83**, 825-826.
- Moehl, B. (1988). Target detection by echolocating bats. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. Moore, eds.). Plenum; New York, pp. 435-450.
- Moehl, B., Surlykke, A. & Miller, L. A. (1990). High intensity narwhal clicks. In *Sensory Abilities of Cetaceans* (J. Thomas & R. Kastelein, eds.). Plenum Press; New York, pp. 295-303.
- Moehl, B. (2001). Sound transmission in the nose of the sperm whale *Physeter catodon*. A post mortem study. *J. Comp. Physiol. A.*, **187**, 335-340.
- Moehl, B., Wahlberg, M., Madsen, P. T., Miller, L. A. & Surlykke, A. (2000). Sperm whale clicks: Directionality and source level revisited. *J. Acoust. Soc. Am.*, **107**, 638-648.
- Moehl, B., Au, W. W. L., Pawloski, J. & Nachtigall, P. E. (1999). Dolphin hearing: Relative sensitivity as a function of point of application of a contact sound source in the jaw and head region. *J. Acoust. Soc. Am.*, **105**, 3421-3424.
- Moehlman, P. D. (1998). Behavioral patterns and communication in feral asses (*Equus africanus*). *Appl. Anim. Behav. Sci.*, **60**, 125-169.
- Mogdans, J. & Schnitzler, H.-U. (1990). Range estimation and the possible use of spectral information in the echolocating bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **88**, 754-757.
- Mogdans, J., Ostwald, J. & Schnitzler, H.-U. (1988). The role of pinna movement for the localization of vertical and horizontal wire obstacles in the greater horseshoe bat, *Rhinolophus ferrumequinum*. *J. Acoust. Soc. Am.*, **84**, 1676-1679.
- Moles, A. & d'Amato, F. R. (2000). Ultrasonic vocalization by female mice in the presence of a conspecific carrying food cues. *Anim. Behav.*, **60**, 689-694.
- Molewijk, H. E., van der Poel, A. M., Vedder, A. W. & Olivier, B. (1993). Ultrasonic distress vocalisations in adult rats as a model for panic disorder. *J. Psychopharmacol.*, Abstracts, p. A12.
- Monteiro-Filho, E. L. A. & Monteiro, K. D. K. A. (2001). Low-frequency sounds emitted by *Sotalia fluviatilis guianensis* (Cetacea: Delphinidae) in an estuarine region in southeastern Brazil. *Can. J. Zool.*, **79**, 59-66.
- Moore, P. W. B. (1988). Dolphin echolocation and audition. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Publishing Corp.; New York, pp. 161-168.
- Moore, P. W. B. (1991). Dolphin psychophysics: concepts for the study of dolphin echolocation. In *Dolphin Societies: Discoveries and Puzzles* (K. Pryor & K. Norris, eds.). University of California Press; Berkeley and Los Angeles, pp. 365-382.
- Moore, P. W. B., Pawloski, D. A. & Dankiewicz, L. (1995). Interaural time and intensity difference thresholds in the bottlenosed dolphin (*Tursiops truncatus*). In *Sensory Systems of Aquatic Mammals* (R. Kastelein, J. Thomas & P. Nachtigall, eds.). De Spill; Woerden, Netherlands, pp. 11-23.
- Moore, S. E. & Ridgway, S. H. (1995). Whistles produced by common dolphins from the Southern California Bight. *Aquat. Mamm.*, **21**, 55-63.
- Moore, S. E., Stafford, K. M., Dahlheim, M. E., Fox, C. G., Braham, H. W., Polovina, J. J. & Bain, D. E. (1998). Seasonal variation in reception of fin whale calls at five geographic areas in the North Pacific. *Mar. Mamm. Sci.*, **14**, 617-627.

- Moore, P. W. B. & Pawloski, D. A. (1991). Binaural hearing in the bottlenosed dolphin (*Tursiops truncatus*). In *Sensory Systems and Behavior of Marine Mammals, International Symposium*. USSR Academy of Sciences Severtsov Institute of Evolutionary Morphology and Ecology of Animals, Andreev Acoustic Institute, Moscow, pp. 68-69.
- Moore, P. W. B. (1997). Cetacean auditory psychophysics. *Bioacoustics*, **8**, 61-78.
- Moore, P. W. B. & Pawloski, D. A. (1990). Investigations on the control of echolocation pulses in the dolphin. In *Dolphin Sensory Processes* (J. A. Thomas & R. Kastelein, eds.). Plenum Press; New York, pp. 305-316.
- Moore, D. R., Lippe, W. R. & Rubel, E. W. (1995). Effects of middle ear pressure on frequency representation in the central auditory system. *Hear. Res.*, **89**, 93-100.
- Morgan, K. N., Thayer, J. E. & Frye, C. A. (1999). Prenatal stress suppresses rat pup ultrasonic vocalization and myoclonic twitching in response to separation. *Dev. Psychobiol.*, **34**, 205-216.
- Morrice, M. G., Burton, H. R. & Green, K. (1994). Microgeographic variation and songs in the underwater vocalisation repertoire of the Weddell seal (*Leptonychotes weddellii*) from the Vestfold Hills, Antarctica. *Polar Biology*, **14**, 441-446.
- Morris, M. G., Burton, H. R. & Green, K. (1994). Microgeographic variation and songs in the underwater repertoire of the Weddell seal (*Leptonychotes weddellii*) from the Vestfold Hills, Antarctica. *Polar Biol.*, **14**, 441-446.
- Mos, J. & Olivier, B. (1989). Ultrasonic vocalizations by rat pups as an animal model for anxiolytic activity: effects of serotonergic drugs. In *Behavioural Pharmacology of 5-HT* (P. Bevan, A. R. Cools & T. Archer, eds.). Lawrence Erlbaum Associates; Hillsdale, N. J., pp. 361-366.
- Moss, C. & Schnitzler, H.-U. (1995). Behavioural studies of auditory information processing. In *Springer Handbook of Auditory Research. Hearing by Bats* (R. R. Fay & A. N. Popper, eds.). Springer-Verlag; New York, pp. 87-141.
- Moss, C. F., Redish, D., Gounden, C. & Kunz, T. H. (1997). Ontogeny of vocal signals in the little brown bat, *Myotis lucifugus*. *Anim. Behav.*, **54**, 131-141.
- Moss, C. F. & Surlykke, A. (2001). Auditory scene analysis by echolocation in bats. *J. Acoust. Soc. Am.*, **110**, 2207-2226.
- Moss, C. F. (1988). Ontogeny of vocal signals in the big brown bat, *Eptesicus fuscus*. In *Animal Sonar. Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 115-120.
- Moss, C. F. & Simmons, J. A. (1993). Acoustic image representation of a point target in the bat *Eptesicus fuscus*: evidence for sensitivity of echo phase in bat sonar. *J. Acoust. Soc. Am.*, **93**, 1553-1562.
- Moss, C. F. & Zagaeski, M. (1994). Acoustic information available to bats using frequency-modulated sounds for the perception of insect prey. *J. Acoust. Soc. Am.*, **95**, 2745-2756.
- Mossbridge, J. A. & Thomas, J. A. (1999). An "acoustic niche" for Antarctic killer whale and leopard seal sounds. *Mar. Mamm. Sci.*, **15**, 1351-1356.
- Mossl, M., Mora, E., Coro, F. & Vater, M. (1999). Two-toned echolocation calls from *Molossus molossus* in Cuba. *J. Mammal.*, **80**, 929-932.
- Motomura, N., Shimizu, K., Shimizu, M., Aoki-Komori, S., Taniguchi, K., Serizawa, I. & Saito, T. R. (2002). A comparative study of isolation-induced ultrasonic vocalization in rodent pups. *Exp. Anim.*, **51**, 187-190.
- Mueller, R. & Schnitzler, H.-U. (1997). Acoustic flow in echo amplitudes and spectra: a viable concept for obstacle avoidance in CF-bats? *J. Acoust. Soc. Am.*, **101**, 3137.
- Mueller, R. & Schnitzler, H.-U. (2000). Acoustic flow perception in cf-bats: Extraction of parameters. *J. Acoust. Soc. Am.*, **108**, 1298-1307.
- Mueller, R. & Kuc, R. (2000). Foliage echoes: A probe into the ecological acoustics of bat echolocation. *J. Acoust. Soc. Am.*, **108**, 836-845.
- Mueller, M., Laube, B., Burda, H. & Bruns, V. (1992). Structure and function of the peripheral auditory system in the African mole rat (*Cryptomys hottentotus*): evidence for an acoustic fovea. *J. Comp. Physiol. A.*, **171**, 469-476.
- Mueller, M. (1996). The cochlear place-frequency map of the adult and developing Mongolian gerbil. *Hear. Res.*, **94**, 148-156.
- Muggenthaler, E. von (2000). Infrasonic and low-frequency vocalizations from Siberian and Bengal tigers. *J. Acoust. Soc. Am.*, **108**, 2541.
- Muller, R. & Schnitzler, H.-U. (1999). Acoustic flow perception in CF-bats: Properties of the available cues. *J. Acoust. Soc. Am.*, **105**, 2958-2966.
- Murray, S. O., Mercado, E. & Roitblat, H. L. (1998). Characterizing the graded structure of false killer whale (*Pseudorca crassidens*) vocalizations. *J. Acoust. Soc. Am.*, **104**, 1679-1688.
- Murray, S. O., Mercado, E. & Roitblat, H. L. (1998). The neural network classification of false killer whale

- (*Pseudorca crassidens*) vocalizations. *J. Acoust. Soc. Am.*, **104**, 3626-3634.
- Murthy, U., Palakal, M. J. & Wong, D. (1996). A computational model to map auditory responses. *WCNN '96 (World Congress on Neural Networks. International Neural Network Society 1996 Annual Meeting)*, pp. 547-550.
- Musicant, A. D., Chan, J. C. K. & Hind, J. E. (1990). Direction-dependent spectral properties of cat external ear: new data and cross-species comparisons. *J. Acoust. Soc. Am.*, **87**, 757-781.
- Mutlu, E. (2000). Detection of harbor porpoises and white whales (Beluga) sound using the high frequency bioacoustics and their echo structures. *J. Acoust. Soc. Am.*, **108**, 2584.
- Mutschler, N. H. & Miczek, K. A. (1998). Withdrawal from a self-administered or non-contingent cocaine binge: differences in ultrasonic distress vocalizations in rats. *Psychopharmacology*, **136**, 402-408.
- Myers, M. M., Ali, N., Brunelli, S. A., Weller, A., Tu, A. Y. & Hofer, M. A. (2001). Differences in number, amplitude, duration, shape and bout structure of separation-induced infant rat ultrasonic vocalizations (USV) before and after a brief maternal reunion (potentiation). *Dev. Psychobiol.*, **38**, 209.
- Nachtigall, P. E., Au, W. W. L., Pawloski, J. L. & Moore, P. W. B. (1995). Risso's dolphin (*Grampus griseus*) hearing thresholds in Kaneohe Bay, Hawaii. In *Sensory Systems of Marine Mammals* (R. A. Kastelein, J. A. Thomas & P. E. Nachtigall, eds.). De Spil Publishers; Woerden, Netherlands, pp. 49-53.
- Nachtigall, P. E. & Morse, P. W. B., eds. (1988). *Animal Sonar. Processes and Performance*. Plenum Press; New York.
- Nachtigall, P. E., Au, W. W. L., Pawloski, J. L. & Roitblat, H. L. (1994). Animal echolocation and signal processing. *Oceans '94*, **1**, 259-263.
- Nachtigall, P. E. (1986). Vision, audition, and chemoreception in dolphins, and other marine mammals. In *Dolphin Cognition and Behavior: A Comparative Approach* (R. Schusterman, J. Thomas and F. Wood, eds.). Erlbaum; London, pp. 79-114.
- Naito, H., Inoue, M., Suzuki, Y., Tohei, A., Watanabe, G., Taya, K. & Makino, J. (2001). Ultrasonic vocalization responses in genetically high- and low-emotional rats. *Exp. Anim.*, **50**, 285-291.
- Naito, H., Inoue, M. & Makino, J. (2000). Ultrasonic isolation calls in genetically high- and low-emotional rat pups. *Exp. Anim.*, **49**, 289-294.
- Nakahara, F., Takemura, A., Koido, T. & Hiruda, H. (1997). Target discrimination by an echolocating finless porpoise, *Neophocaena phocaenoides*. *Mar. Mamm. Sci.*, **13**, 639-649.
- Narins, P. M., Lewis, E. R., Jarvis J. J. U. M. & O'Riain, J. (1997). The use of seismic signals by fossorial Southern African mammals: A neuroethological gold mine. *Brain Res. Bull.*, **44**, 641-646.
- Neti, C., Young, E. D. & Schneider, M. H. (1992). Neural network models of sound localization based on directional filtering by the pinna. *J. Acoust. Soc. Am.*, **92**, 3140-3156.
- Neuweiler, G. & Fenton, M. B. (1988). Behaviour and foraging ecology of echolocating bats. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 535-549.
- Neuweiler, G. (1989). Foraging ecology and audition in echolocating bats. *Trends Ecol. Evol.*, **4**, 160-166.
- Neuweiler, G., Metzner, W., Heilmann, U., Ruebsamen, R., Eckrich, M. & Costa, H. H. (1987). Foraging behaviour and echolocation in the rufous horseshoe bat (*Rhinolophus rouxi*) of Sri Lanka. *Behav. Ecol. Sociobiol.*, **20**, 53-67.
- Neuweiler, G. (1990). Auditory adaptations for prey capture in echolocating bats. *Physiol. Rev.*, **70**, 615-641.
- Nevo, E. (1991). Evolution of vocal and vibratory communication in mole-rats *Spalax*: Structure and function. In *Le Rongeur et l'Espace* (M. le Berre and L. le Guelte, eds.). Chabaud; Paris, pp. 15-34 (French).
- Newborough, D., Goodson, A. D. & Woodward, B. (1998). Micro-controller based deterrents: acoustic devices to reduce harbour porpoise *Phocoena phocoena* incidental catch in gillnets. *Bioacoustics*, **9**, 232-233.
- Newman, J. D., ed. (1989). *The Physiological Control of Mammalian Vocalization*. Plenum Press; New York.
- Newton-Fisher, N., Harris, S., White, P. & Jones, G. (1993). Structure and function of red fox *Vulpes vulpes* vocalisations. *Bioacoustics*, **5**, 1-31.
- Niblock, M. M., Brunso-Bechtold, J. K. & Henkel, C. K. (1995). Fiber outgrowth and pathfinding in the developing auditory brainstem. *Dev. Brain Res.*, **85**, 288-292.
- Nicastro, N. (2001). Differential patterns in classification of domestic cat vocalizations by human listeners. *Adv. Ethol.*, **36**, 228.
- Nikol'skii, A. A. & Suchanova, M. V. (1994). Individual variability of alarm call in steppe marmot (*Marmota bobac* Müll., 1776). In *Actual Problems of Marmots Investigations* (V. Y. Rumiantsev, ed.). ABF Publishing House; Moscow, pp. 169-181.
- Nikol'skii, A. A., Nesterova, N. L. & Suchanova, M. V. (1994). Situational variations of spectral structure in *Marmota bobac* Müll. alarm signal. In *Actual Problems of Marmots Investigations* (V. Y. Rumiantsev, ed.). ABF Publ. House; Moscow, pp. 127-148.
- Nikol'skii, A. A. & Pereladova, O. B. (1994). An alarm call of Menzbier's marmot (*Marmota menzbieri* Kaschk., 1925). In *Actual Problems of Marmots Investigation* (V. Y. Rumiantsev, ed.). ABF Publishing

- House; Moscow, pp. 149-168.
- Nikol'skii, A. A. (1994). Geographical variability of the alarm call rhythmical structure in *Marmota baibacina*. In *Actual Problems of Marmots Investigation* (V. Y. Rumiantsev, ed.). ABF Publishing House; Moscow, pp. 111-126.
- Nikol'skii, A. (1996). Ecological bioacoustics of mammals. *Bioacoustics*, **6**, 302-303.
- Nikol'skii, A. A. (1996). Species specificity and interspecies parallelisms of alarm call in Eurasian marmots. In *Biodiversity in Marmots* (M. le Berre, R. Ramousse and L. le Guelte, eds.). International Network on Marmots; Moscow-Lyon, pp. 187-192.
- Noad, M. J. & Cato, D. H. (2000). Comparison of acoustic and visual surveying of humpback whales off East Australia. *J. Acoust. Soc. Am.*, **108**, 2540.
- Noad, M. J., Cato, D. H., Bryden, M. M., Jenner, M. N. & Jenner, K. C. (2000). Cultural revolution in whale songs: Humpbacks have picked up a catchy tune sung by immigrants from a distant ocean. *Nature*, **408**, 537.
- Nobili, R., Mammano, F. & Ashmore, J. (1998). How well do we understand the cochlea? *Trends Neurosci.*, **21**, 159-167.
- Nonaka, S., Sakamoto, T., Katada, A. & Unno, T. (1999). Brain stem neural mechanisms for vocalization in decerebrate cats. *Ann. Otol. Rhinol. Laryngol.*, **108**, 15-24.
- Norman, A. P., Teagle, L. & Jones, G. (1998). A method for the synchronisation and control of ultrasound recording and stereophotogrammetry in the reconstruction of animal flight. *Bioacoustics*, **9**, 207-212.
- Norman, A. P., Jones, G. & Arlettaz, R. (1999). Noctuid moths show neural and behavioural responses to sounds made by some bat-marking rings. *Anim. Behav.*, **57**, 829-835.
- Norman, R. G. & Greene, C. R. (2000). An autonomous acoustic recorder using a directional sensor for locating calling bowhead whales. *J. Acoust. Soc. Am.*, **108**, 2582.
- Norris, T. & Barlow, J. (2000). Short duration sounds recorded from blue whales (*Balaenoptera musculus*) off Peru. *J. Acoust. Soc. Am.*, **108**, 2634.
- Norris, T. F., Jacobsen, J. K. & Cerchio, S. (2000). A comparative analysis of humpback whale songs recorded in the pelagic waters of the eastern North Pacific: Preliminary findings and implications for discerning migratory routes and assessing breeding stock identity. *N.O.A.A. Technical Memorandum*. U.S. Department of Commerce; San Diego, California.
- Norris, T. F., Barlow, J. & McDonald, M. (1997). Detections of singing humpback whales (*Megaptera novaeangliae*) across the northeast Pacific during the SWAPS97 sperm whale cruise. *J. Acoust. Soc. Am.*, **102**, 3121.
- Norris, T. F., McDonald, M. & Barlow, J. (1999). Acoustic detections of singing humpback whales (*Megaptera novaeangliae*) in the eastern North Pacific during their northbound migration. *J. Acoust. Soc. Am.*, **106**, 506-514.
- Norris, J. & Evans, W. E. (1998). Advances in acoustic censusing of marine mammals. *Bioacoustics*, **9**, 158.
- Norris, K. S. (1988). The evolution of acoustic mechanisms in odontocete cetaceans. In *Evolution and Environment* (E. T. Drake, ed.).
- Norris, S. (2002). Creatures of culture? Making the case for cultural systems in whales and dolphins. *Bioscience*, **52**, 9-14.
- Notarbartolo di Sciarra, G. & Gordon, J. (1997). Bioacoustics: A tool for the conservation of cetaceans in the Mediterranean Sea. *Mar. Freshwat. Behav. Physiol.*, **30**, 125-146.
- Novacek, M. J. (1991). Aspects of the morphology of the cochlea in microchiropteran bats: an investigation of character transformation. *Bull. Am. Mus. Nat. Hist.*, **206**, 84-100.
- Nowacek, D. P., Tyack, P. L. & Wells, R. S. (2001). A platform for continuous behavioral and acoustic observation of free-ranging marine mammals: Overhead video combined with underwater audio. *Mar. Mamm. Sci.*, **17**, 191-199.
- Nowakowski, W., Rachwald, A. Y Boratynski, P. (2000). Ultrasound and audible sound emission in dormice family (Gliridae: Rodentia). *Biol. Bull. Poznan*, **37**, 153-158.
- Nowicki, S. N., Stirling, I. & Sjare, B. (1997). Duration of stereotyped underwater vocal displays by male Atlantic walrus in relation to aerobic dive limit. *Mar. Mamm. Sci.*, **13**, 566-575.
- O'Connell-Rodwell, C. E., Hart, L. A. & Arnason, B. T. (2001). Exploring the potential use of seismic waves as a communication channel by elephants and other large mammals. *Am. Zool.*, **41**, 1157-1170.
- O'Connell-Rodwell, C. E., Arnason, B. & Hart, L. A. (2000). Exploring the potential of novel low frequency auditory communication mechanisms in elephants. *Adv. Ethol.*, **35**, 51.
- O'Connell-Rodwell, C. E., Arnason, B. T. & Hart, L. A. (2000). Seismic properties of Asian elephant (*Elephas maximus*) vocalizations and locomotion. *J. Acoust. Soc. Am.*, **108**, 3066-3072.
- O'Connell-Rodwell, C. E., Arnason, B. & Hart, L. A. (2000). Exploring the possibility of low-frequency seismic communication in elephants and other large mammals. *Am. Zool.*, **40**, 1154-1155.
- O'Connor, K. N., Roitblat, H. L. & Bever, T. G. (1993). Auditory sequence complexity and hemispheric

- asymmetry of function in rats. In *Language and Communication. Comparative Perspective* (H. L. Roitblat, L. M. Herman and P. E. Nachtigall, eds.). Lawrence Erlbaum; Princeton, New Jersey, pp. 275-292.
- O'Farrell, M. J. & Miller, B. W. (1997). A new examination of echolocation calls of some neotropical bats (Emballonuridae and Mormoopidae). *J. Mammal.*, **78**, 954-963.
- O'Farrell, M. J., Miller, B. W. & Gannon, W. L. (1999). Qualitative identification of free-flying bats using the Anabat detector. *J. Mammal.*, **80**, 11-23.
- O'Farrell, M. J. & Gannon, W. L. (1999). A comparison of acoustic versus capture techniques for the inventory of bats. *J. Mammal.*, **80**, 24-30.
- O'Farrell, M. J. & Miller, B. W. (1999). Use of vocal signatures for the inventory of free-flying Neotropical bats. *Biotropica*, **31**, 507-516.
- O'Neill, W. E. (1987). The processing of temporal information in the auditory systems of echolocating bats. In *Recent Advances in the Study of Bats* (M. B. Fenton, P. A. Racey & J. M. V. Rayner, eds.). Cambridge University Press; Cambridge, pp. 171-199.
- Obrist, M. (1995). Flexible bat echolocation: the influence of individual, habitat, and conspecifics on sonar signal design. *Behav. Ecol. Sociobiol.*, **36**, 207-219.
- Obrist, M. K., Fenton, M. B., Eger, J. L. & Schlegel, P. A. (1993). What ears do for bats: a comparative study of pinna sound pressure transformation in Chiroptera. *J. Exp. Biol.*, **180**, 119-152.
- Obrist, M. (1988). Individually recognizable freeflying bats: a new method to record and analyze their echolocation calls. *Myotis*, **26**, 87-95.
- Ogutu, J. O. & Dublin, H. T. (1998). The response of lions and spotted hyaenas to sound playbacks as a technique for estimating population size. *Afr. J. Ecol.*, **36**, 83-95.
- Ohl, F. E. & Scheich, H. (1997). Learning-induced dynamic receptive field changes in primary auditory cortex of the unanaesthetized Mongolian gerbil. *J. Comp. Physiol. A.*, **181**, 685-696.
- Ohl, F. W., Schleich, H. & Freeman, W. J. (2000). Topographic analysis of epidural pure-tone-evoked potentials in gerbil auditory cortex. *J. Neurophysiol.*, **83**, 3123-3132.
- Ohlemiller, K. K., Jones, L. B., Heidbreder, A. F., Clark, W. W. & Miller, J. D. (1999). Voicing judgements by chinchillas trained with a reward paradigm. *Behav. Brain Res.*, **100**, 185-195.
- Okanoya, K., Kobayashi, K., Ohtake, M., Ozaki, R. & Park, T. J. (2001). Signature calls and brain activity in the naked mole rat. *Zool. Sci. (Tokyo)*, **18**, Suppl., 118.
- Oleson, E. M., Hildebrand, J. A., McDonald, M. A. & Calambokidis, J. (2000). Acoustic and visual monitoring for marine mammals at Cortez and Tanner Banks. *J. Acoust. Soc. Am.*, **108**, 2540.
- Olsen, J. F. & Suga, N. (1986). The auditory thalamus of the moustached bat: convergent input and coincidence of excitation from orientation sound and echo. *Neurosci. Abstr.*, **12**, 1272.
- Olshausen, B. A. & O'Connor, K. N. (2002). A new window on sound. *Nature Neurosci.*, **5**, 292-294.
- Ostwald, J., Schnitzler, H.-U. & Schuller, G. (1988). Target discrimination and target classification in echolocating bats. In *Animal Sonar: Processes and Performance* (P. Nachtigall & P. W. B. Moore, eds.). Plenum; New York, pp. 413-434.
- Ostwald, J. N., Barlow, J. & Norris, T. (2000). Acoustic identification of nine delphinid species in the eastern tropical Pacific Ocean. *J. Acoust. Soc. Am.*, **108**, 2635.
- Pack, A. A. & Herman, L. M. (1995). Sensory integration in the bottlenosed dolphin: Immediate recognition of complex shapes across the senses of echolocation and vision. *J. Acoust. Soc. Am.*, **98**, 722-733.
- Page, B. (1999). *Evolutionary implications of vocal recognition in fur seals*. Honours thesis. University of Tasmania.
- Page, B., Goldsworthy, S. D. & Hindell, M. A. (2001). Vocal traits of hybrid fur seals: intermediate to their parental species. *Anim. Behav.*, **61**, 959-967.
- Pahl, B. C., Terhune, J. M. & Burton, H. R. (1997). Repertoire and geographic variation in underwater vocalisations of Weddell seals (*Leptonychotes weddellii*, Pinnipedia: Phocidae) at the Vestfold Hills, Antarctica. *Aust. J. Zool.*, **45**, 171-187.
- Palakal, M. J., Murthy, U., Chittajallu, S. K. & Wong, D. (1995). Tonotopic representation of auditory responses using self-organizing maps. *Math. Comput. Modell.*, **22**, 7-21.
- Palakal, M. J. & Wong, D. (1999). Cortical representation of spatiotemporal pattern of firing evoked by echolocation signals: Population encoding of target features in real time. *J. Acoust. Soc. Am.*, **106**, 479-490.
- Pang, X. D. & Guinan Jr., J. J. (1997). Growth rate of simultaneous masking in cat auditory-nerve fibers: Relationship to the growth of basilar-membrane motion and the origin of two-tone suppression. *J. Acoust. Soc. Am.*, **102**, 3564-3575.
- Panksepp, J. & Burgdorf, J. (2000). 50-kHz chirping (laughter?) in response to conditioned and unconditioned tickle-induced reward in rats: effects of social housing and genetic variables. *Behav. Brain Res.*, **115**, 25-38.

- Paolini, A. G., Cotterill, E. L., Bairaktaris, D. & Clark, G. M. (1999). Muscimol suppression of the dorsal cochlear nucleus impairs frequency discrimination in rats. *Behav. Brain Res.*, **97**, 79-88.
- Parijs, S. M. van & Corkeron, P. J. (2001). Vocalizations and behaviour of pacific humpback dolphins *Sousa chinensis*. *Ethology*, **107**, 701-716.
- Parijs, S. M. van, Hastie, G. D. & Thompson, P. M. (2000). Individual and geographical variation in display behaviour of male harbour seals in Scotland. *Anim. Behav.*, **59**, 559-568.
- Parijs, S. M. van, Thompson, P. M., Tollit, D. J. & Mackay, A. (1997). Distribution and activity of male harbour seals during the mating season. *Anim. Behav.*, **54**, 35-43.
- Parijs, S. M. van, Thompson, P. M., Hastie, G. D. & Bartels, B. A. (1998). Modification and deployment of a sonobuoy for recording underwater vocalizations from marine mammals. *Mar. Mamm. Sci.*, **14**, 310-316.
- Parijs, S. M. van, Hastie, G. D. & Thompson, P. M. (1999). Geographical variation in temporal and spatial vocalization patterns of male harbour seals in the mating season. *Anim. Behav.*, **58**, 1231-1239.
- Parijs, S. M. van & Corkeron, P. J. (2001). Boat traffic affects the acoustic behaviour of Pacific humpback dolphins, *Sousa chinensis*. *J. Mar. Biol. Assoc. U.K.*, **81**, 533-538.
- Parijs, S. M. van, Parra, G. J. & Irkeron, P. J. (2000). Sounds produced by Australian irrawaddy dolphins, *Orcaella brevirostris*. *J. Acoust. Soc. Am.*, **108**, 1938-1940.
- Parijs, S. M. van, Kovacs, K. M. & Lydersen, C. (2001). Spatial and temporal distribution of vocalising male bearded seals: Implications for male mating strategies. *Behaviour*, **138**, 905-922.
- Parijs, S. M. van, Hastie, G. D. & Thompson, P. M. (2000). A design for a two-dimensional boat-bound hydrophone array for studying harbor seals, *Phoca vitulina*. *Mar. Mamm. Sci.*, **16**, 481-488.
- Park, T. J., Klug, A. & Oswald, J. P. (1998). A novel circuit in the bat's midbrain recruits neurons into sound localization processing. *Naturwissenschaften*, **85**, 176-179.
- Park, T. J. & Pollak, G. D. (1993). Gaba shapes sensitivity to interaural intensity disparities in the mustache bat's inferior colliculus: implications of encoding sound location. *J. Neurosci.*, **13**, 2050-2067.
- Park, K. J., Altringham, J. D. & Jones, G. (1996). Assortative roosting in two phonic types of *Pipistrellus pipistrellus* during the mating season. *Proc. Roy. Soc. Lond. B.*, **263**, 1495-1499.
- Park, T. J. & Grothe, B. (1996). From pattern recognition to sound localization: a by-product of growing larger during evolution. *Naturwissenschaften*, **83**, 30-32.
- Parsons, S., Boonman, A. M. & Obrist, M. K. (2000). Advantages and disadvantages of techniques for transforming and analyzing chiropteran echolocation calls. *J. Mammal.*, **81**, 927-938.
- Parsons, S. (1997). Search phase echolocation calls of the New Zealand short-tailed bat (*Mystacina tuberculata*) and long-tailed bat (*Chalinolobus tuberculatus*). *Can. J. Zool.*, **75**, 1487-1494.
- Parsons, C. H., Lanyon, R. G., Schnupp, J. W. H. & King, A. J. (1999). Effects of altering spectral cues in infancy on horizontal and vertical sound localization by adult ferrets. *J. Neurophysiol.*, **82**, 2294-2309.
- Parsons, S. (1996). A comparison of the performance of a brand of broad-band and several brands of narrow-band bat detectors in two different habitat types. *Bioacoustics*, **7**, 33-43.
- Parsons, S. (2001). Identification of New Zealand bats (*Chalinolobus tuberculatus* and *Mystacina tuberculata*) in flight from analysis of echolocation calls by artificial neural networks. *J. Zool.*, **253**, 447-456.
- Patuzzi, R. (1993). Otoacoustic emissions and the categorization of cochlear and retrocochlear lesions. *Brit. J. Audiol.*, **27**, 91-95.
- Pavan, G., Priano, M., Manghi, M. & Fossati, C. (1997). Analysis of long clicking sequences of sperm whales *Physeter macrocephalus*. *Bioacoustics*, **8**, 275.
- Pavan, G., Nascetti, D., Manghim, M., Priano, M., Fossati, C. & Borsani, J. F. (1996). Cooperative bioacoustic research in the Mediterranean Sea with the Italian Navy. *Bioacoustics*, **6**, 318-319.
- Pavan, G., Hayward, T. J., Borsani, J. F., Priano, M., Manghi, M., Fossati, C. & Gordon, J. (2000). Time patterns of sperm whale codas recorded in the Mediterranean Sea 1985-1996. *J. Acoust. Soc. Am.*, **107**, 3487-3495.
- Pavan, G., Borsani, J. F., Manghi, M. & Priano, M. (1996). Interactive digital sound library on cetaceans of the Mediterranean Sea. *European Research on Cetaceans*, **9**, 81-84.
- Pavan, G., Borsani, J. F., Fossati, C., Manghi, M. & Priano, M. (1996). Acoustic research cruises in the Mediterranean - 1994. *European Research on Cetaceans*, **9**, 85-88.
- Pavan, G., Priano, M., Manghi, M. & Fossati, C. (1998). A cetacean sound library for the Mediterranean sea. Technical aspects and concerns. *Bioacoustics*, **9**, 162.
- Pavan, G. (1992). A portable DSP workstation for real-time analysis of cetacean sounds in the field. *European Research on Cetaceans, Cambridge, UK*, **6**, 165-167.
- Pavan, G., Priano, M., Manghi, M., Nascetti, P. & Perazzi, A. (1997). Underwater acoustic recording of cetaceans made by the Italian navy. *Bioacoustics*, **8**, 273-274.
- Pavan, G., Priano, M., Manghi, M. & Fossati, C. (1998). Software tools for real-time IPI measurements on sperm whale sounds. *Bioacoustics*, **9**, 224-225.

- Pavan, G. & Borsani, J. F. (1997). Bioacoustic research on cetaceans in the Mediterranean Sea. *Mar. Freshwat. Behav. Physiol.*, **30**, 99-123.
- Pavey, C. R. & Burwell, C. J. (1998). Bat predation on eared moths: a test of the allotonic frequency hypothesis. *Oikos*, **81**, 143-151.
- Payne, K. (1997). A survey of research on low-frequency acoustic communication in elephants. *J. Acoust. Soc. Am.*, **101**, 3162-3163.
- Pearl, D. L. & Fenton, M. B. (1996). Can echolocation calls provide information about group identity in the little brown bat (*Myotis lucifugus*)? *Can. J. Zool.*, **75**, 2184-2192.
- Pearl, D. L. (1992). The effect of different backgrounds on the call structure of a gleaning bat *Macrotus waterhousii*. *Bat Res. News*, **33**, 68.
- Pedersen, S. C. (1995). Cephalometric correlates of echolocation in the Chiroptera. 2. Fetal development. *J. Morphol.*, **225**, 107-123.
- Peremans, H., Walker, A. & Hallam, J. (1997). A bionic sonarhead. *Bioacoustics*, **8**, 262.
- Perry, E. A. & Terhune, J. M. (1999). Variation of harp seal (*Pagophilus groenlandicus*) underwater vocalizations among three breeding locations. *J. Zool.*, **249**, 181-186.
- Peters, G. & Sliwa, A. S. (1996). Purring - a primitive mammalian vocalization after all? *Z. Saeugetierkd.*, **61** (Sonderheft), 48-49 (German).
- Peters, G. & Tonkin-Leyhausen, B. A. (1999). Evolution of acoustic communication signals of mammals: Friendly close-range vocalizations in Felidae (Carnivora). *J. Mammal. Evol.*, **6**, 129-159.
- Peters, G. & Hast, M. H. (1994). Hyoid structure, laryngeal anatomy, and vocalization in felids (Mammalia, Carnivora, Felidae). *Z. Saeugetierkd.*, **59**, 87-104.
- Peters, G. & Wozencraft, W. C. (1989). Acoustic communication by fissiped carnivores. In *Carnivore Behaviour, Ecology, and Evolution* (J. L. Gittleman, ed.). Chapman & Hall; London, pp. 14-56.
- Peters, G. (1996). The study of mammalian sound communication - taking stock. *Bioacoustics*, **6**, 304-305.
- Pettersson, L. (1993). Ultrasound detectors: Different techniques, purposes and methods. In *Proceedings of the first European Bat-Detector Workshop* (K. Kapteyn ed.). Netherlands Bat Research Foundation; Amsterdam, pp. 11-19.
- Philips, J. D., Nachtigall, P. E., Au, W. W. L., Pawloski, J. L. & Roitblat, H. L. (2000). Echolocation in the Risso's dolphin, *Grampus griseus*. *J. Acoust. Soc. Am.*, **108**, 2635.
- Phillips, A. V. & Stirling, I. (2000). Vocal individuality in mother and pup South American fur seals, *Arctocephalus australis*. *Mar. Mamm. Sci.*, **16**, 592-616.
- Phillips, D. P. & Burkard, R. (1999). Response magnitude and timing of auditory response initiation in the inferior colliculus of the awake chinchilla. *J. Acoust. Soc. Am.*, **105**, 2731-2737.
- Pierson, L. L., Gerhardt, K. J., Abrams, R. M. & Huang, X. (1997). Effects of intense noise exposure on the auditory brain-stem response and inner ear histology of fetal sheep. *J. Acoust. Soc. Am.*, **102**, 3110.
- Pillat, J. & Schuller, G. (1998). Audiovocal behavior of Doppler-shift compensation in the horseshoe bat survives bilateral lesion of the paralemniscal tegmental area. *Exp. Brain Res.*, **119**, 17-26.
- Pilz, P. K. D. & Oedekoven, C. (1995). Frequency of the 22 kHz call of rats is modulated by the rhythm of the heart rate. *Physiol. Behav.*, **57**, 325-330.
- Placer, J. & Slobodchikoff, C. N. (2000). A fuzzy-neural system for identification of species-specific alarm calls of Gunnison's prairie dogs. *Behav. Process.*, **52**, 1-9.
- Podhorna, J. & Brown, R. E. (1999). Inhibition of nitric oxide synthase reduces ultrasonic vocalizations of rat pups. *Eur. J. Pharmacol.*, **382**, 143-150.
- Podhorna, J. & Brown, R. E. (1999). Inhibition of nitric oxide synthase reduces ultrasonic vocalizations in rat pups. *Soc. Neurosci. Abstr.*, **25**, 2135.
- Poeggel, G. & Braun, K. (1996). Early auditory filial learning in decus (*Octodon degus*): A babies' dinner bell? *Brain Res.*, **743**, 162-170.
- Pollak, G. D. (1988). Time is traded for intensity in the bat's auditory system. *Hear. Res.*, **36**, 107-124.
- Pollak, G. D. (1993). Some comments on the proposed perception of phase and nanosecond time disparities by echolocating bats. *J. Comp. Physiol. A.*, **172**, 523-531.
- Pollak, G. D. & Casseday, J. H. (1989). *Echolocation: The Functional Organization of the Auditory Brainstem of Bats*. Springer Verlag; Berlin.
- Poole, J. H. (1999). Signals and assessment in African elephants: evidence from playback experiments. *Anim. Behav.*, **58**, 185-193.
- Popelar, J., Erre, J.-P., Aran, J.-M. & Cazals, Y. (1994). Plastic changes in ipsi-/contralateral differences of auditory cortex and inferior colliculus evoked potentials after injury to one ear in the adult guinea pig. *Hear. Res.*, **72**, 125-134.
- Popov, V. & Supin, A. (1991). Interaural intensity and latency difference in the dolphin's auditory system. *Neurosci. Lett.*, **133**, 295-297.
- Popov, V., Supin, A. & Klishin, V. O. (1992). Electrophysiological study of sound conduction in dolphins. In

- Marine Mammal Sensory Systems* (J. A. Thomas, ed.). Plenum Press; New York, pp. 269-276.
- Popov, V. V. & Supin, A. Ya. (1990). Location of an acoustic window in dolphins. *Experientia*, **46**, 53-56.
- Popov, V. V. & Supin, A. Ya. (1997). Frequency tuning in dolphins: Evoked potential study. *J. Acoust. Soc. Am.*, **102**, 3102.
- Popov, V. V. & Supin, A. Y. (1998). Auditory evoked responses to rhythmic sound pulses in dolphins. *J. Comp. Physiol. A.*, **183**, 519-524.
- Popov, V. & Supin, A. (1990). Electrophysiological studies on hearing in some cetaceans and a manatee. In *Sensory Abilities of Cetaceans* (J. Thomas & R. Kastelein, eds.). Plenum Press; New York, pp. 405-415.
- Popov, V. V. & Supin, A. Ya. (1997). Detection of temporal gaps in noise in dolphins: Evoked-potential study. *J. Acoust. Soc. Am.*, **102**, 1169-1176.
- Popov, V. V., Supin, A. Ya. & Klishin, V. O. (1997). Frequency tuning of the dolphin's hearing as revealed by auditory brain-stem response with notch-noise masking. *J. Acoust. Soc. Am.*, **102**, 3795-3801.
- Popper, A. N., Hawkins, H. L. & Gisiner, R. C. (1997). Questions in cetacean bioacoustics: some suggestions for future research. *Bioacoustics*, **8**, 163-182.
- Popper, A. N. & Fay, R. R., eds. (1995). *Hearing by Bats*. Springer Handbook of Auditory Research, Vol. 5. Springer-Verlag.
- Populin, L. C. & Yin, T. C. T. (1999). Kinematics of eye movements of cats to broadband acoustic targets. *J. Neurophysiol.*, **82**, 955-962.
- Populin, L. & Yin, T. (1998). Behavioral studies of sound localization in the cat. *J. Neurosci.*, **18**, 2147-2160.
- Portavella, M., Depaulis, A. & Vergnes, M. (1993). 22-28 kHz ultrasonic vocalizations associated with defensive reactions in male rats do not result from fear or aversion. *Psychopharmacology*, **111**, 190-194.
- Porter, R. H., Nowak, R. & Orgeur, P. (1995). Influence of a conspecific agemate on distress bleating by lambs. *Appl. Anim. Behav. Sci.*, **45**, 239-244.
- Portfors, C. V. & Wenstrup, J. J. (1999). Delay-tuned neurons in the inferior colliculus of the mustached bat: Implications for analyses of target distance. *J. Neurophysiol.*, **82**, 1326-1338.
- Portfors, C. V. & Wenstrup, J. J. (2000). Complex spectral responses in the inferior colliculus of the mustached bat. *Soc. Neurosci. Abstr.*, **26**.
- Potter, J. R., Taylor, E. & Chitre, M. (1997). Could marine mammals use ambient noise imaging techniques? *J. Acoust. Soc. Am.*, **102**, 3104.
- Prechtl, H. (1991). *Acoustic properties of neurons from the rostral colliculus inferior in the horseshoe bat *Rhinolophus rouxi**. Diplom thesis. University of Munich (German).
- Preisler, A. & Schmidt, S. (1998). Spontaneous classification of complex tones at high and ultrasonic frequencies in the bat, *Megaderma lyra*. *J. Acoust. Soc. Am.*, **103**, 2595-2607.
- Preisler, A. & Schmidt, S. (1995). Virtual pitch formation in the ultrasonic range. *Naturwissenschaften*, **82**, 45-47.
- Priano, M., Pavan, G., Manghi, M. & Fossati, C. (1998). The Cetacean Sound Library of the Interdisciplinary Center for Bioacoustics and Environmental Research. *Bioacoustics*, **9**, 233.
- Puppe, B., Schoen, P. C. & Wendland, K. (1999). Monitoring of piglets' open field activity and choice behaviour during the replay of maternal vocalization: a comparison between Observer and PID technique. *Laboratory Animals*, **33**, 215-220.
- Puria, S. & Allen, J. B. (1998). Measurements and model of the cat middle ear: Evidence of tympanic membrane acoustic delay. *J. Acoust. Soc. Am.*, **104**, 3463-3481.
- Pusenius, J. & Ostfeld, R. S. (2000). Effects of stoat's presence and auditory cues indicating its presence on tree seedling predation by meadow voles. *Oikos*, **91**, 123-130.
- Pye, J. D. (1986). Sonar signals as clues to system performance. *Acustica*, **61**, 166-175.
- Pye, J. D. (1986). Recording bat sounds by new techniques. *Myotis*, **23-24**, 245-248.
- Pye, J. D. (1993). Is fidelity futile? The true signal is illusory especially with ultrasound. *Bioacoustics*, **4**, 271-286.
- Pye, D. (1997). The emergence of animal ultrasound. *Bioacoustics*, **7**, 235-240.
- Rabon, D. R., Jr., Sawrey, D. K. & Webster, W. D. (2001). Infant ultrasonic vocalizations and parental responses in two species of voles (*Microtus*). *Can. J. Zool.*, **79**, 830-837.
- Rado, R., Terkel, J. & Wollberg, Z. (1998). Seismic communication signals in the blind mole-rat (*Spalax ehrenbergi*): electrophysiological and behavioral evidence for their processing by the auditory system. *J. Comp. Physiol. A.*, **183**, 503-512.
- Raggio, M. W. & Schreiner, C. E. (1999). Neuronal responses in cat primary auditory cortex to electrical cochlear stimulation. III. Activation patterns in short- and long-term deafness. *J. Neurophysiol.*, **82**, 3506-3526.
- Ralston, J. V. & Herman, L. M. (1995). Perception and generalization of frequency contours by a bottlenose dolphin (*Tursiops truncatus*). *J. Comp. Psychol.*, **109**, 268-277.

- Ramachandran, R., Davis, K. A. & May, B. J. (1999). Single-unit responses in the inferior colliculus of decerebrate cats. I. Classification based on frequency response maps. *J. Neurophysiol.*, **82**, 152-163.
- Randall, J. A. & Stevens, C. M. (1987). Footdrumming and other anti-predator responses in the bannertail kangaroo rat (*Dipodomys spectabilis*). *Behav. Ecol. Sociobiol.*, **20**, 187-194.
- Randall, J. A. (2000). Why do desert rodents drum their feet? *Am. Zool.*, **40**, 1182-1183.
- Randall, J. A. (1995). Modification of footdrumming signatures by kangaroo rats: changing territories and gaining new neighbours. *Anim. Behav.*, **49**, 1227-1237.
- Randall, J. A. (1997). Comparison of low-frequency communication by footdrumming in three species of solitary, desert rodent, kangaroo rats (*Dipodomys*). *J. Acoust. Soc. Am.*, **101**, 3163.
- Randall, J. A., Rogovin, K. A. & Shier, D. M. (2000). Antipredator behavior of a social desert rodent: footdrumming and alarm calling in the great gerbil, *Rhombomys opimus*. *Behav. Ecol. Sociobiol.*, **48**, 110-118.
- Randall, J. A. & Matocq, M. D. (1997). Why do kangaroo rats (*Dipodomys spectabilis*) footdrum at snakes? *Behav. Ecol.*, **8**, 404-413.
- Randall, J. A. (1997). Species-specific footdrumming in kangaroo rats: *Dipodomys ingens*, *D. deserti*, *D. spectabilis*. *Anim. Behav.*, **54**, 1167-1175.
- Randall, J. A. (1994). Discrimination of footdrumming signatures by kangaroo rats, *Dipodomys spectabilis*. *Anim. Behav.*, **47**, 45-54.
- Randall, J. A. & Lewis, E. R. (1997). Seismic communication between the burrows of kangaroo rats, *Dipodomys spectabilis*. *J. Comp. Physiol. A.*, **181**, 525-531.
- Randall, J. A. & Rogovin, K. A. (1997). Footdrumming as alarm signals in solitary and social desert rodents: warning relatives, individual defence or mate protection? *Adv. Ethol.*, **32**, 130.
- Rasmussen, M. H., Miller, L. A. & Au, W. W. L. (2002). Source levels of clicks from free-ranging white-beaked dolphins (*Lagenorhynchus albirostris* Gray 1846) recorded in Icelandic waters. *J. Acoust. Soc. Am.*, **111**, 1122-1125.
- Ratnam, R., Condon, C. J. & Feng, A. S. (1996). Neural ensemble coding of target identity in echolocating bats. *Biol. Cybern.*, **74**, 153-162.
- Rattay, F. (1998). The mammalian auditory hair cell: a simple electric circuit model. *J. Acoust. Soc. Am.*, **103**, 1558-1565.
- Rauschecker, J. P. (1999). Auditory cortical plasticity: a comparison with other sensory systems. *Trends Neurosci.*, **22**, 74-80.
- Rauschecker, J. P. (1999). Making brain circuits listen. *Science*, **285**, 1686-1687.
- Ravicz, M. E., Rosowski, J. & Voigt, H. F. (1992). Sound power collection by the auditory periphery of the Mongolian gerbil *Meriones unguiculatus*. I. Middle-ear input impedance. *J. Acoust. Soc. Am.*, **92**, 157-177.
- Razafindrakoto, Y., Rosenbaum, H. C. & Helweg, D. A. (2001). First description of humpback whale song from Antongil Bay, Madagascar. *Mar. Mamm. Sci.*, **17**, 180-186.
- Razak, K. A., Fuzessery, Z. M. & Lohuis, T. D. (1999). Single cortical neurons serve both echolocation and passive sound localization. *J. Neurophysiol.*, **81**, 1438-1442.
- Reale, R. A. & Brugge, J. F. (2000). Directional sensitivity of neurons in the primary auditory (AI) cortex of the cat to successive sounds ordered in time and space. *J. Neurophysiol.*, **84**, 435-450.
- Reby, D., Joachim, J., Lauga, J., Lek, S. & Aulagnier, S. (1998). Individuality in the groans of fallow deer (*Dama dama*) bucks. *J. Zool.*, **245**, 79-84.
- Reby, D., Cargnelutti, B., Joachim, J. & Aulagnier, S. (1999). Spectral acoustic structure of barking in roe deer (*Capreolus capreolus*). Sex-, age- and individual-related variations. *C. R. Acad. Sci. Paris, Sciences de la vie*, **322**, 271-279.
- Reby, D., Lek, S., Dimopoulos, I., Joachim, J., Lauga, J. & Aulagnier, S. (1997). Artificial neural networks as a classification method in the behavioural sciences. *Behav. Processes*, **40**, 35-43.
- Reby, D., Cargnelutti, B. & Hewison, A. J. M. (1999). Contexts and possible functions of barking in roe deer. *Anim. Behav.*, **57**, 1121-1128.
- Reby, D., McComb, K. & Fitch, T. (2001). Honest cues to fitness in the acoustics of red deer roars. *Adv. Ethol.*, **36**, 247.
- Reby, D., Hewison, M., Izquierdo, M. & Pepin, D. (2001). Red deer (*Cervus elaphus*) hinds discriminate between roars of their current harem-holder stag and those of neighbouring stags. *Ethology*, **107**, 951-959.
- Recio, A. (1998). Basilar membrane responses to clicks at the base of the chinchilla cochlea. *J. Acoust. Soc. Am.*, **103**, 1972-1989.
- Reidenberg, J. S. & Laitman, J. T. (2002). Proposed mechanisms of pneumatic sound production and transference to water in aquatic mammals: A comparative anatomical study. *FASEB Journal*, **16**, A360.
- Reidenberg, S. J. & Laitman, J. T. (1992). Anatomy of the vocal apparatus of the humpback whale (*Megaptera*

- novaeangliae*). *Anat. Rec.*, **232**, 73A.
- Reiman, A. J. & Terhune, J. M. (1993). The maximum range of vocal communication in air between a harbor seal *Phoca vitulina* pup and its mother. *Mar. Mamm. Sci.*, **9**, 182-189.
- Reiss, D. & McCowan, B. (1993). Spontaneous vocal mimicry and production by bottlenose dolphins *Tursiops truncatus*: evidence for vocal learning. *J. Comp. Psychol.*, **107**, 301-312.
- Rendell, L. E., Matthews, J. N., Gill, A., Gordon, J. C. D. & MacDonald, D. W. (1999). Quantitative analysis of tonal calls from five odontocete species, examining interspecific and intraspecific variation. *J. Zool.*, **249**, 403-410.
- Rendell, L. & Whitehead, H. (2001). Culture in whales and dolphins. *Behav. Brain Sci.*, **24**, 309-324.
- Rendell, L. E. & Gordon, J. C. D. (1999). Vocal response of long-finned pilot whales (*Globicephala melas*) to military sonar in the Ligurian Sea. *Mar. Mamm. Sci.*, **15**, 198-204.
- Reuter, T., Nummela, S. & Hemila, S. (1998). Elephant hearing. *J. Acoust. Soc. Am.*, **104**, 1122-1123.
- Rhode, W. S. & Smith, P. H. (1986). Encoding timing and intensity in the ventral cochlear nucleus of the cat. *J. Neurophysiol.*, **56**, 261-286.
- Rhode, W. S. & Recio, A. (2000). Study of mechanical motions in the basal region of the chinchilla cochlea. *J. Acoust. Soc. Am.*, **107**, 3317-3332.
- Rhode, W. S. & Smith, P. H. (1986). Physiological studies on neurons in the dorsal cochlear nucleus of cat. *J. Neurophysiol.*, **56**, 287-307.
- Rhode, W. S. & Kettner, R. E. (1987). Physiological study of neurons in the dorsal and posteroventral cochlear nucleus of the unanesthetized cat. *J. Neurophysiol.*, **57**, 414-442.
- Rice, J. J., May, B. J., Spirou, G. A. & Young, E. D. (1992). Pinna-based spectral cues for sound localization in cat. *Hear. Res.*, **58**, 132-152.
- Richards, D. G. (1986). Dolphin vocal mimicry and vocal object labeling. In *Dolphin Cognition and Behavior: a Comparative Approach* (R. J. Schusterman, J. A. Thomas and F. G. Wood, eds.). Lawrence Erlbaum Assoc., New Jersey, pp. 273-288.
- Richardson, W. J. (1998). Marine mammals and man-made noise: current issues. *Bioacoustics*, **9**, 216-217.
- Richardson, W. J., Greene, Jr., C. R., Malme, C. I. & Thomson, D. H. (1995). *Marine Mammals and Noise*. Academic Press; New York.
- Ricketts, C., Mendelson, J. R., Anand, B. & English, R. (1998). Responses to time-varying stimuli in rat auditory cortex. *Hear. Res.*, **123**, 27-30.
- Ridgway, S. H., Carder, D. A., Smith, R. R., Kamolnick, T., Schlundt, C. E. & Elsberry, W. R. (1998). Whale hearing in the deep sea. *Bioacoustics*, **9**, 152.
- Ridgway, S., Carder, D., Smith, R., Kamolnick, T. & Elsberry, W. (1997). First audiogram for marine mammals in the open ocean and at depth: Hearing and whistling by two white whales down to 30 atmospheres. *J. Acoust. Soc. Am.*, **101**, 3136.
- Ridgway, S. H. & Dolphin, W. F. (1993). New approaches for assessing the hearing capability of marine mammals. *Tenth Biennial Conference On the Biology of Marine Mammals*, Galveston, Texas.
- Ridgway, S. H., Carder, D. A., Kamolnick, T., Smith, R. R., Schlundt, C. E. & Elsberry, W. R. (2001). Hearing and whistling in the deep sea: depth influences whistle spectra but does not attenuate hearing by white whales (*Delphinapterus leucas*) (Odontoceti, Cetacea). *J. Exp. Biol.*, **204**, 3829-3841.
- Ridgway, S. H. & Carder, D. A. (1988). Nasal pressure and sound production in an echolocating white whale, *Delphinapterus leucas*. In *Animal Sonar* (P. E. Nachtigall & P. W. Moore, eds.). Plenum Press; New York, pp. 53-60.
- Ridgway, S. H. (1997). Who are the whales? *Bioacoustics*, **8**, 3-20.
- Ridgway, S. H. & Carder, D. A. (1997). Hearing deficits measured in some *Tursiops truncatus*, and discovery of a deaf/mute dolphin. *J. Acoust. Soc. Am.*, **101**, 590-594.
- Ridgway, S. & Carder, D. (2000). A preliminary study of loudness at frequencies of 5 to 120 kHz based on whistle response time (RT) in a dolphin. *J. Acoust. Soc. Am.*, **108**, 2515.
- Ridgway, S., Carder, D., Schlundt, C. & Kamolnick, T. (1997). Temporary shift in delphinoid masked hearing thresholds. *J. Acoust. Soc. Am.*, **102**, 3102.
- Riede, T. (2001). Nonlinear dynamics of sound production: Its relevance for acoustic communication: Facts and hypotheses. *Adv. Ethol.*, **36**, 17-18.
- Riede, T., Bohme, G., Frey, R., Fitch, T., East, M. L., Hofer, H. & Herzog, H. (2000). Canids and hyaenas possess morphological structures that could be responsible for nonlinear phenomena during vocalization. *Adv. Ethol.*, **35**, 63.
- Riede, T., Herzog, H., Hammerschmidt, K., Brunnberg, L. & Tembrock, G. (2001). The harmonic-to-noise ratio applied to dog barks. *J. Acoust. Soc. Am.*, **110**, 2191-2197.
- Riede, T. & Stolle-Malorny, A. (1999). The vocal change of a kitten with craniocerebellar trauma - a case study. *Bioacoustics*, **10**, 131-141.
- Riede, T., Herzog, H., Mehwald, D., Seidner, W., Trumler, E., Bohme, G. & Tembrock, G. (2000). Nonlinear

- phenomena in the natural howling of a dog-wolf mix. *J. Acoust. Soc. Am.*, **108**, 1435-1442.
- Riede, T., Wilden, I. & Tembrock, G. (1997). Subharmonics, biphonations, and frequency jumps - common components of mammalian vocalization or indicators for disorders? *Z. Saeugetierkd.*, **62** (Suppl. 2), 198-203.
- Riede, T. & Fitch, T. (1999). Vocal tract length and acoustics of vocalization in the domestic dog (*Canis familiaris*). *J. Exp. Biol.*, **202**, 2859-2868.
- Ristic, B. & Boashash, B. (1994). Scale domain analysis of a bat sonar signal. *Proc. IEEE-SP Int. Symp. Time-Frequency Time-Scale Anal.*, pp. 373-376.
- Rivers, J. A. (1997). Blue whale, *Balaenoptera musculus*, vocalizations from the waters off Central California. *Mar. Mamm. Sci.*, **13**, 186-195.
- Robbins, R. L. (2000). Vocal communication in free-ranging African wild dogs (*Lycaon pictus*). *Behaviour*, **137**, 1271-1298.
- Roberson, D. W. & Rubel, E. W. (1994). Cell division in the gerbil cochlea after acoustic trauma. *Am. J. Otol.*, **15**, 28-34.
- Rogers, T. L. & Brown, S. M. (1999). Acoustic observations of Arnoux's beaked whale (*Berardius arnuxii*) off Kemp Land, Antarctica. *Mar. Mamm. Sci.*, **15**, 192-198.
- Rogers, T. L., Cato, D. H. & Bryden, M. M. (1996). Behavioral significance of underwater vocalizations of captive leopard seals, *Hydrurga leptonyx*. *Mar. Mamm. Sci.*, **12**, 414-427.
- Rogovin, K. A. & Randall, J. A. (1997). Evolution of alarm calls among diurnal rodents: a case study of the highly social great gerbil, *Rhombomys opimus*. *Adv. Ethol.*, **32**, 131.
- Rohn, C. (1996). *Responses from domestic pigs (Sus scrofa domestica) to playbacks of conspecific sound patterns*. Diplom Thesis. Free University, Berlin (German).
- Roitblat, H. L., Moore, P. W. B., Nachtigall, P. E., Penner, R. H. & Au, W. W. L. (1989). Dolphin echolocation: identification of returning echoes using a counterpropagation network. *IJCNN (Int. Joint Conf. Neur. Networks)*, Vol. 1, pp. 295-300.
- Roitblat, H. L., Au, W. W. L., Nachtigall, P. E., Shizumura, R. & Moons, G. (1995). Sonar recognition of targets embedded in sediment. *Neural Networks*, **8**, 1263-1273.
- Roitblat, H. L., Moore, P. W. B., Nachtigall, P. E., Penner, R. H. & Au, W. W. L. (1989). Natural echolocation with an artificial neural network. *Int. J. Neur. Networks, Res. Appl.*, **1**, 239-248.
- Roitblat, H. L., Penner, R. H. & Nachtigall, P. E. (1990). Matching-to-sample by an echolocating dolphin (*Tursiops truncatus*). *J. Exp. Psychol. Anim. Behav. Proc.*, **16**, 85-95.
- Rojowsky, H., Weller, A., Hofer, M. A. & Brunelli, S. A. (2001). Maternal behavior in rats selectively bred for infant ultrasonic vocalization (USV). *Dev. Psychobiol.*, **38**, 212.
- Rouiller, E. M., Wan, X. S. T., Moret, V. & Liang, F. (1992). Mapping of c-fos expression elicited by pure tones stimulation in the auditory pathways of the rat, with emphasis on the cochlear nucleus. *Neurosci. Lett.*, **144**, 19-24.
- Roux, A. le, Jackson, T. P. & Cherry, M. I. (2001). Does Brants' whistling rat (*Parotomys brantsii*) use an urgency-based alarm system in reaction to aerial and terrestrial predators? *Behaviour*, **138**, 757-773.
- Roverud, R. C., Nitsche, V. & Neuweiler, G. (1991). Discrimination of wing beat motion by bats, correlated with echolocation sound pattern. *J. Comp. Physiol. A.*, **168**, 259-263.
- Roverud, R. C. (1988). A time window for distance information processing in the bats, *Noctilio albiventris* and *Rhinolophus rouxi*. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum; New York, pp. 513-517.
- Roverud, R. C. (1993). Neural computations for sound pattern recognition: evidence for summation of an array of frequency filters in an echolocating bat. *J. Neurosci.*, **13**, 2306-2312.
- Roverud, R. C. (1995). Frequency modulated sound pattern analysis in the lesser bulldog bat: the role of interactions between adjacent frequency elements of complex sounds. *J. Comp. Physiol. A.*, **176**, 1-9.
- Rowe, M. P. & Owings, D. H. (1996). Probing, assessment and management during interactions between ground squirrels (Rodentia: Sciuridae) and rattlesnakes (Squamata: Viperidae). 2. Cues afforded by rattlesnake rattling. *Ethology*, **102**, 856-874.
- Rowe, T. (1996). Coevolution of the mammalian middle ear and neocortex. *Science*, **273**, 651-654.
- Rubel, E. W., Dew, L. A. & Roberson, D. W. (1995). Mammalian vestibular hair cell regeneration. *Science*, **267**, 701-703.
- Ruebsamen, R. & Schweizer, H. (1986). Control of echolocation pulses by neurons of the nucleus ambiguus in the rufous horseshoe bat, *Rhinolophus rouxi*. II. Afferent and efferent connections of the motor nucleus of the laryngeal nerve. *J. Comp. Physiol., A.*, **159**, 689-699.
- Ruebsamen, R., Neuweiler, G. & Sripathi, K. (1988). Comparative collicular tonotopy in two bat species adapted to movement detection, *Hipposideros speoris* and *Megaderma lyra*. *J. Comp. Physiol.*, **163**, 271-285.
- Ruebsamen, R., Neuweiler, G. & Marimuthu, G. (1989). Ontogenesis of tonotopy in inferior colliculus of a hipposiderid bat reveals postnatal shift in frequency place-code. *J. Comp. Physiol. A.*, **165**, 755-769.

- Ruiz-Miranda, C. R., Wells, S. A., Golden, R. & Seidensticker, J. (1998). Vocalizations and other behavioral responses of male cheetahs (*Acinonyx jubatus*) during experimental separation and reunion trials. *Zoo Biol.*, **17**, 1-16.
- Ruiz-Miranda, C. R., Szymanski, M. D. & Ingals, J. W. (1993). Physical characteristics of the vocalizations of domestic goat does *Capra hircus* in response to their offspring cries. *Bioacoustics*, **5**, 99-116.
- Russ, J. M., Racey, P. A. & Jones, G. (1998). Intraspecific responses to distress calls of the pipistrelle bat, *Pipistrellus pipistrellus*. *Anim. Behav.*, **55**, 705-713.
- Russ, J. (1999). *The Bats of Britain and Ireland: Echolocation calls, sound analysis and species identification*. Alana Books; Shropshire.
- Russell, I. J. & Koessl, M. (1999). Micromechanical responses to tones in the auditory fovea of the greater mustached bat's cochlea. *J. Neurophysiol.*, **82**, 676-686.
- Russo, D. & Jones, G. (1999). The social calls of Kuhl's pipistrelles *Pipistrellus kuhlii* (Kuhl, 1819): Structure and variation (Chiroptera: Vespertilionidae). *J. Zool.*, **249**, 476-480.
- Ryan, A. F. & Woolf, N. K. (1992). Development of lower auditory system in the gerbil. In *Development of Auditory and Vestibular System* (R. Romond, ed.). Elsevier, B. V., pp. 243-271.
- Rydell, J., Johes, G. & Waters, D. (1995). Echolocating bats and hearing moths: who are the winners? *Oikos*, **73**, 419-424.
- Rydell, J. (1993). Variation in the sonar of an aerial hawking bat (*Eptesicus nilssonii*). *Ethology*, **93**, 275-284.
- Rydell, J. (1998). Bat defence in lekking ghost swifts (*Hepialus humuli*), a moth without ultrasonic hearing. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 1373-1376.
- Rydell, J. & Arlettaz, R. (1994). Low frequency echolocation enables the bat *Tadarida teniotis* to feed on tympanate insects. *Proc. R. Soc. Lond. B.*, **257**, 175-178.
- Rydell, J. (1990). Behavioural variation in echolocation pulses of the northern bat, *Eptesicus nilssoni*. *Ethology*, **85**, 103-113.
- Ryugo, D. K., Rosenbaum, B. T., Pongstaporn, T., Saada, A. A. & Niparko, J. K. (1997). The auditory nerve in congenitally deaf white cats: Correlations between anatomy and electrophysiology. *J. Acoust. Soc. Am.*, **101**, 3191.
- Sachs, B. D. & Bialy, M. (2000). Female presence during postejaculatory interval facilitates penile erection and 22-kHz vocalization in male rats. *Behav. Neurosci.*, **114**, 1203-1208.
- Sadanaga, M. & Morimitsu, T. (1995). Development of endocochlear potential and its negative component in mouse cochlea. *Hear. Res.*, **89**, 155-161.
- Saillant, P. A., Simmons, J. A., Dear, S. P. & McMullen, T. A. (1993). A computational model for echo processing and acoustic imaging in frequency-modulated echolocating bats: the spectrogram correlation and transformation receiver. *J. Acoust. Soc. Am.*, **94**, 2691-2712.
- Saint Marie, R. L., Luo, L. & Ryan, A. F. (1999). Effects of stimulus frequency and intensity on c-fos mRNA expression in the adult rat auditory brainstem. *J. Comp. Neurol.*, **404**, 258-270.
- Sales, G., Hubrecht, R., Peyvandi, A., Milligan, S. & Shield, B. (1997). Noise in dog kennelling: Is barking a welfare problem for dogs? *Appl. Anim. Behav. Sci.*, **52**, 321-329.
- Samson, F. K., Barone, P., Irons, W. A., Clarey, J. C., Poirier, P. & Imig, T. J. (2000). Directionality derived from differential sensitivity to monaural and binaural cues in the cat's medial geniculate body. *J. Neurophysiol.*, **84**, 1330-1345.
- Sanchez-Villagra, M. R. & Smith, K. K. (1995). Can marsupials hear through their jaws? Evolution of the mandibular angle in marsupials and the definition of Metatheria. *Am. Zool.*, **35**, 60A.
- Sanders, I., Weisz, D. J., Yang, B. Y., Fung, K. & Amirali, A. (2001). The mechanism of ultrasonic vocalization in the rat. *Soc. Neurosci. Abstr.*, **27**, 241.
- Sanderson, M. I. & Simmons, J. A. (2000). Neural responses to overlapping FM sounds in the inferior colliculus of echolocating bats. *J. Neurophysiol.*, **83**, 1840-1855.
- Santos, M. E. dos, Ferreira, A. J., Ramos, J., Ferreira, J. F. & Bento-Coelho, J. L. (1996). The acoustic world of the bottlenose dolphins in the Sado estuary. *European Research on Cetaceans*, **9**, 62-64.
- Santos, M. E. dos, Caporin, G., Moreira, H. O., Ferreira, A. J. & Bento Coelho, J. L. (1991). Acoustic behavior in a local population of bottlenose dolphins. In *Sensory Abilities of Cetaceans* (J. Thomas & R. Kastelein, eds.). Plenum Press; New York, pp. 585-598.
- Santucci, D., Branchi, I. & Alleva, E. (1996). Ultrasonic vocalization by infant mice to different contexts: a sonographic analysis. *Bioacoustics*, **6**, 320.
- Santucci, D., Branchi, I. & Alleva, E. (1994). Ultrasonic vocalization in infant mice: a slow motion analysis. *Bioacoustics*, **6**, 79-80.
- Santucci, D., Masterton, D. & Elwood, R. W. (1994). Effect of age, sex, and odours from conspecific adult males on ultrasonic vocalizations of infant CS1 mice. *Behav. Processes*, **32**, 285-296.
- Sanvito, S. & Galimberti, F. (2000). Bioacoustics of southern elephant seals. II. Individual and geographical variation in male aggressive vocalisations. *Bioacoustics*, **10**, 287-307.

- Sanvito, S. & Galimberti, F. (2000). Bioacoustics of southern elephant seals. I. Acoustic structure of male aggressive vocalisations. *Bioacoustics*, **10**, 259-285.
- Sato, K., Houtani, T., Ueyama, T., Ikeda, M., Yamashita, T., Kumazawa, T. & Sugomoto, T. (1993). Mapping of the cochlear nucleus subregions in the rat with neuronal Fos protein induced by acoustic stimulation with pure tones. *Acta Otolaryngol.*, **113** (Suppl. 500), 18-22.
- Sauerland, M. (1998). Underwater audiogram of a tucuxi (*Sotalia fluviatilis guianensis*). *J. Acoust. Soc. Am.*, **103**, 1199-1204.
- Saulitis, E. L. (1993). *The behavior and vocalizations of the 'AT' group of killer whales (Orcinus orca) in Prince William Sound, Alaska*. M.Sc. thesis. University of Alaska.
- Savoy, A., Carlone, R. L. & Brudzynski, S. M. (2001). Neuronal activity during ultrasonic vocalization as visualized by c-Fos immunohistochemistry in the rat brain. *Soc. Neurosci. Abstr.*, **27**, 241.
- Sayigh, L. S., Tyack, P. L. & Wells, R. S. (1993). Recording underwater sounds of free-ranging dolphins while underway in a small boat. *Mar. Mamm. Sci.*, **9**, 209-213.
- Sayigh, L. S. (1992). Development and functions of signature whistles of free-ranging bottlenose dolphins, *Tursiops truncatus*. Ph.D. thesis, MIT/WHOI Joint Program, WHOI, 92-37.
- Sayigh, L. S., Tyack, P. L., Wells, R. S., Scott, M. D. & Irvine, A. B. (1995). Sex difference in signature whistle production of free-ranging bottlenose dolphins, *Tursiops truncatus*. *Behav. Ecol. Sociobiol.*, **36**, 171-177.
- Sayigh, L. S., Tyack, P. L., Wells, R. S., Solow, A. R., Scott, M. D. & Irvine, A. B. (1999). Individual recognition in wild bottlenose dolphins: a field test using playback experiments. *Anim. Behav.*, **57**, 41-50.
- Scarpaci, C., Bigger, S. W., Corkeron, P. J. & Nugegoda, D. (2000). Bottlenose dolphins (*Tursiops truncatus*) increase whistling in the presence of 'swim-with-dolphin' tour operations. *J. Cetac. Res. Manage.*, **2**, 183-185.
- Schassburger, R. M. (1987). Wolf vocalizations: An integrated model of structure, motivation and ontogeny. In *Man and Wolf: Advances, Issues, and Problems in Captive Wolf Research* (H. Frank, ed.). Dr. W. Junk Publishers; Dordrecht, The Netherlands, pp. 313-348.
- Schassburger, R. M. (1993). Vocal communication in the timber wolf *Canis lupus* Linnaeus: structure, motivation and ontogeny. *Advances in Ethology*, No. 30. Paul Parey Scientific Publishers; Berlin.
- Scheich, H. (1990). Representational geometries of telencephalic auditory maps in birds and mammals. In *The Neocortex* (B. L. Finlay, ed.). Plenum Press; New York, pp. 119-136.
- Scheifele, P. M. (1997). Potential impacts of low-frequency anthropogenic noise on the hearing of subarctic beluga whales in the Saint Lawrence estuary. *J. Acoust. Soc. Am.*, **101**, 3164.
- Schenk, C., Staib, E. & Yasserli, A. M. (1995). Underwater calls from giant otters (*Pteronura brasiliensis*). *Z. Saegetierkd.*, **60**, 310-313 (German).
- Scherrer, J. A. & Wilkinson, G. S. (1993). Evening bat isolation calls provide evidence for heritable signatures. *Anim. Behav.*, **46**, 847-860.
- Schlangen, M. & Schmidt, U. (1995). Acoustical communication in the lesser spear-nosed bat, *Phyllostomus discolor* (Chiroptera). *Z. Saegetierkd.*, **60** (Sonderheft), 53 (German).
- Schleich, C. E. & Busch, C. (2002). Juvenile vocalizations of *Ctenomys talarum* (Rodentia: Octodontidae). *Acta Theriol.*, **47**, 25-33.
- Schlundt, C. E., Finneran, J. J., Carder, D. A. & Ridgway, S. H. (2000). Temporary shift in masked hearing thresholds of bottlenose dolphins, *Tursiops truncatus*, and white whales, *Delphinapterus leucas*, after exposure to intense tones. *J. Acoust. Soc. Am.*, **107**, 3496-3508.
- Schmidt, S. & Thaller, J. (1994). Temporal auditory summation in the echolocating bat, *Tadarida brasiliensis*. *Hear. Res.*, **77**, 125-134.
- Schmidt, S. (1988). Evidence for a spectral basis of texture perception in bat sonar. *Nature*, **331**, 617-619.
- Schmidt, S., Hanke, S. & Pillat, J. (2000). The role of echolocation in the hunting of terrestrial prey - new evidence for underestimated strategy in the gleaning bat, *Megaderma lyra*. *J. Comp. Physiol. A.*, **186**, 975-988.
- Schnitzler, H.-U. (1987). Echoes of fluttering insects: information for echolocating bats. In *Recent Advances in the Study of Bats* (M. B. Fenton, P. A. Racey & J. M. V. Rayner, eds.). Cambridge University Press; Cambridge, pp. 226-243.
- Schnitzler, H.-U. & Kalko, K. M. V. (1998). How echolocating bats search and find food. In *Bat Biology and Conservation* (T. H. Kunz and P. A. Racey, eds.). Smithsonian Institution Press; Wash.
- Schnitzler, H.-U., Kalko, E., Miller, L. & Surlykke, A. (1987). The echolocation and hunting behavior of the bat, *Pipistrellus kuhli*. *J. Comp. Physiol.*, **161**, 267-274.
- Schnitzler, H.-U., Kalko, E. K. V., Kaipf, I. & Grinnell, A. D. (1992). A plausible hypothesis for the evolution of fish-catching behavior in noctilionid bats. In *Rhythmogenesis in Neurons and Networks* (N. Elsner & D. W. Richer, eds.). Thieme; Stuttgart, p. 211.

- Schnitzler, H.-U., Kalko, E. K. V., Kaipf, I. & Mogdans, J. (1991). Comparative studies of echolocation and hunting behavior in the four species of mormoopid bats of Jamaica. *Bat Res. News*, **32**, 22-23.
- Schnitzler, H.-U., Kalko, E. K., Kaipf, I. & Grinnell, A. D. (1994). Hunting and echolocation behaviour of the fisherman bat, *Noctilio leporinus*, in the field. *Behav. Ecol. Sociobiol.*, **35**, 327-345.
- Schoen, P. C., Puppe, B. & Manteuffel, G. (2001). Linear prediction coding analysis and self-organizing feature map as tools to classify stress calls of domestic pigs (*Sus scrofa*). *J. Acoust. Soc. Am.*, **110**, 1425-1431.
- Schoen, P.-C., Puppe, B., Gromyko, T. & Manteuffel, G. (1999). Common features and individual differences in nurse grunting of domestic pigs (*Sus scrofa*): A multi-parametric analysis. *Behaviour*, **136**, 49-66.
- Schoen, P.-C., Puppe, B. & Manteuffel, G. (1998). A sound analysis system based on LabVIEW(R) applied to the analysis of suckling grunts of domestic pigs *Sus scrofa*. *Bioacoustics*, **9**, 119-133.
- Schrader, L. & Todt, D. (1996). Vocal cues reflect physiological stress response in domestic pigs (*Sus scrofa domestica*). *Proceedings 30th International Congress ISAE, Guelph*, p. 17.
- Schrader, L. & Todt, D. (1998). Vocal quality is correlated with levels of stress hormones in domestic pigs. *Ethology*, **104**, 859-876.
- Schrader, L. & Hammerschmidt, K. (1997). Computer-aided analysis of acoustic parameters in animal vocalisations: a multi-parametric approach. *Bioacoustics*, **7**, 247-265.
- Schrader, L. (1997). Relationships between vocalisations and physiological stress response in domestic pigs, *Sus scrofa domestica*. *Adv. Ethol.*, **32**, 56.
- Schrader, L. (1996). Stress responses and call characteristics in the domestic pig (*Sus scrofa domestica*). Dissertation. Freie Universität Berlin; Berlin (German).
- Schreiner, C. E. & Urbas, J. V. (1986). Representation of amplitude modulation in the auditory cortex of the cat. I. The anterior auditory field (AAF). *Hear. Res.*, **21**, 227-241.
- Schuller, G. (1986). Influence of echolocation pulse rate on Doppler shift compensation control system in the greater horseshoe bat. *J. Comp. Physiol., A.*, **158**, 239-246.
- Schultz, K. W. & Corkeron, P. J. (1994). Interspecific differences in whistles produced by inshore dolphins in Moreton Bay, Queensland, Australia. *Can. J. Zool.*, **72**, 1061-1068.
- Schultz, K. W., Cato, D. H., Corkeron, P. J. & Bryden M. M. (1995). Low frequency narrow-band sounds produced by bottlenose dolphins. *Mar. Mamm. Sci.*, **11**, 503-509.
- Schulze, H. & Langner, G. (1997). Periodicity coding in the primary auditory cortex of the Mongolian gerbil (*Meriones unguiculatus hair*): two different coding strategies for pitch and rhythm? *J. Comp. Physiol. A.*, **181**, 651-663.
- Schulze, H. & Langner, G. (1999). Auditory cortical responses to amplitude modulations with spectra above frequency receptive fields: evidence for wide spectral integration. *J. Comp. Physiol. A.*, **185**, 493-508.
- Schulze, H., Ohl, F. W., Heil, P. & Scheich, H. (1997). Field-specific responses in the auditory cortex of the unanaesthetized Mongolian gerbil to tones and slow frequency modulations. *J. Comp. Physiol. A.*, **181**, 573-589.
- Schusterman, R., Kastak, D., Southall, B. & Kastak, C. (2000). Underwater temporary threshold shifts in pinnipeds: Tradeoffs between noise intensity and duration. *J. Acoust. Soc. Am.*, **108**, 2515.
- Schusterman, R. J., Southall, B. L., Kastak, D. & Kastak, C. R. (2001). Acoustic communication in pinnipeds. *Adv. Ethol.*, **36**, 261.
- Schusterman, R. J., Kastak, D., Levenson, D. H., Reichmuth, C. J. & Southall, B. L. (2000). Why pinnipeds don't echolocate. *J. Acoust. Soc. Am.*, **107**, 2256-2264.
- Schusterman, R. J. & Kastak, D. (1997). Auditory sensitivity of a northern elephant seal (*Mirounga angustirostris*) to airborne and underwater sounds. *Adv. Ethol.*, **32**, 120.
- Schusterman, R. J., Hanggi, E. B. & Gisiner, R. (1992). Acoustic signalling in mother-pup reunions, interspecies bonding, and affiliation by kinship in California sea lions (*Zalophus californianus*). In *Marine Mammal Sensory Systems* (J. A. Thomas, R. A. Kastelein & Y. Ya. Supin, eds.). Plenum Press; New York, pp. 533-551.
- Semple, M. N. & Kitzes, L. M. (1993). Binaural processing of sound pressure level in cat primary auditory cortex: evidence for a representation based on absolute levels rather than interaural level differences. *J. Neurophysiol.*, **69**, 449-461.
- Semple, S. & McComb, K. (2000). Perception of female reproductive state from vocal cues in a mammal species. *Proc. Roy. Soc. Lond. B.*, **267**, 707-712.
- Serrano, A. & Miller, E. H. (2000). How vocal are harp seals (*Pagophilus groenlandicus*)? A captive study of seasonal and diel patterns. *Aquat. Mamm.*, **26**, 253-259.
- Serrano, A. & Terhune, J. M. (2001). Within-call repetition may be an anti-masking strategy in underwater calls of harp seals (*Pagophilus groenlandicus*). *Can. J. Zool.*, **79**, 1410-1413.
- Serrano, A. & Miller, E. H. (1998). Underwater vocalizations and vocal activity in captive harp seals *Phoca groenlandica*. *Bioacoustics*, **9**, 153.
- Serrano, A. (2001). New underwater and aerial vocalizations of captive harp seals (*Pagophilus groenlandicus*).

- Can. J. Zool.*, **79**, 75-81.
- Shair, H. N., Masmela, J. R., Brunelli, S. A. & Hofer, M. A. (1997). Potentiation and inhibition of ultrasonic vocalization of rat pups: Regulation by social cues. *Dev. Psychobiol.*, **30**, 195-200.
- Shair, H. N., Masmela, J. R. & Hofer, M. A. (1999). The influence of olfaction on potentiation and inhibition of ultrasonic vocalization of rat pups. *Physiol. Behav.*, **65**, 769-772.
- Shair, H. N., Brunelli, S. A., Velasquez, Z. & Hofer, M. A. (2001). Adult behavioral tests of rats selectively bred for infantile ultrasonic vocalization. *Dev. Psychobiol.*, **38**, 213.
- Shair, H. N., Masmela, J. R. & Hofer, M. A. (1998). The influence of olfaction on potentiation and inhibition of ultrasonic vocalization of rat pups: Regulation by social cues. *Physiol. Behav.*, **65**, 769-772.
- Sharpe, F. A., Dill, L. M., Beaver, V. & Spellman, b. (1998). Killing me softly: feeding calls of the Alaskan humpback whale. In *Abstracts of the World Marine Mammal Science Conference. Monaco. January 20-24, 1998*.
- Shen, J. X., Chen, Q. C. & Jen, P. H.-S. (1997). Binaural and frequency representation in the primary auditory cortex of the big brown bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **181**, 591-597.
- Shepherd, R. K., Baxi, J. H. & Hardie, N. A. (1999). Response of inferior colliculus neurons to electrical stimulation of the auditory nerve in neonatally deafened cats. *J. Neurophysiol.*, **82**, 1363-1380.
- Shiba, K., Miura, T., Yuza, J., Sakamoto, T. & Nakajima, Y. (1999). Laryngeal afferent inputs during vocalization in the cat. *NeuroReport*, **10**, 987-991.
- Shiba, K., Satoh, I., Kobayashi, N. & Hayashi, F. (1999). Multifunctional laryngeal motoneurons: an intracellular study in the cat. *J. Neurosci.*, **19**, 2717-2727.
- Shier, D. M. & Yoerg, S. I. (1999). What footdrumming signals in kangaroo rats (*Dipodomys heermanni*). *J. Comp. Psychol.*, **113**, 66-73.
- Shimizu, M. (2001). Vocalizations of feral cats: Sexual differences in the breeding season. *Mammal Study*, **26**, 85-92.
- Shiple, C., Buchwald, J. S. & Carterette, E. C. (1988). The role of auditory feedback in the vocalization of cats. *Exp. Brain Res.*, **69**, 431-438.
- Shofner, W. P. & Yost, W. A. (1997). Detection of tones in noise by chinchillas using the probe-signal method. *J. Acoust. Soc. Am.*, **101**, 3124.
- Shofner, W. P., Yost, W. A. & Sheft, S. (1993). Increment detection of bandlimited noises in the chinchilla. *Hear. Res.*, **66**, 67-80.
- Shriner, W. M. (1995). Yellow-bellied marmot and golden-mantled ground squirrel responses to conspecific and heterospecific alarm calls. Ph.D. thesis. University of California; Davis.
- Shriner, W. M. (1999). Antipredator responses to a previously neutral sound by free-living adult golden-mantled ground squirrel, *Spermophilus lateralis* (Sciuridae). *Ethology*, **105**, 747-758.
- Shriner, W. M. (1998). Yellow-bellied marmot and golden-mantled ground squirrel responses to heterospecific alarm calls. *Anim. Behav.*, **55**, 529-536.
- Siemers, B. M., Stiltz, P. & Schnitzler, H.-U. (2000). Why do bats hunt low over water? The acoustic world of European trawling *Myotis*. *Z. Saeugetierkd.*, Sonderheft **65**, 42.
- Sigurdson, J. (1993). Whistles as a communication medium. In *Language and Communication: Comparative Perspectives* (H. L. Roitblat, L. M. Herman & P. Nachtigall, eds.). Erlbaum; Hillsdale, N.J., pp. 153-173.
- Sigurdson, J. E. (1998). Analysing the dynamics of dolphin biosonar behaviour during search and detection tasks. *Bioacoustics*, **9**, 222-223.
- Silva, K. B. da, Kramer, D. L. & Weary, D. M. (1994). Context-specific alarm calls of the eastern chipmunk, *Tamias striatus*. *Can. J. Zool.*, **72**, 1087-1092.
- Simmons, J. A., Ferragamo, M. F., Saillant, P. A., Haresign, P. A., Wotton, J. M., Dear, S. P. & Lee, D. N. (1995). Auditory dimensions of acoustic images in echolocation. In *Hearing by Bats. Springer Handbook of Auditory Research* (R. R. Fay & A. N. Popper, eds.). Springer; Berlin, Heidelberg, New York, pp. 146-190.
- Simmons, J. A., Kick, S. A., Moffat, A. J. M., Masters, W. M. & Kon, D. (1988). Clutter interference along the target range axis in the echolocating bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **84**, 551-559.
- Simmons, J. A., Moffat, A. J. M. & Masters, W. M. (1992). Sonar gain control and echo detection thresholds in the echolocating bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **91**, 1150-1163.
- Simmons, J. A. (1995). The content of bat sonar images with respect to insect counter-measures. *Am. Zool.*, **35**, 40A.
- Simmons, J. A., Saillant, P. A., Wotton, J. M., Haresign, T., Ferragamo, M. J. & Moss, C. F. (1995). Composition of biosonar images for target recognition by echolocating bats. *Neural Networks*, **8**, 1239-1261.
- Simmons, J. A., Saillant, P. A. & Dear, S. P. (1992). Through a bat's ear. *IEEE Spectrum*, **29**, 46-48.
- Simmons, J. A., Ferragamo, M. J. & Moss, C. F. (1998). Echo-delay resolution in sonar images of the big brown

- bat, *Eptesicus fuscus*. *Proc. Natl. Acad. Sci. USA*, **95**, 12647-12652.
- Simmons, J. A. & Grinnell, A. D. (1988). The performance of echolocation: acoustic images perceived by echolocating bats. In *Animal Sonar. Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press; New York, pp. 353-385.
- Simmons, J. A. & Chen, L. (1986). The acoustic basis for target discrimination by FM echolocating bats. *J. Acoust. Soc. Am.*, **86**, 1333-1350.
- Simmons, J. A. (1997). Biosonar acoustic images for target localization and classification by bats. *Proc. SPIE (The International Society for Optical Engineering)*, **3079**, 7-13.
- Simmons, J. A. (1993). Evidence for perception of fine echo delay and phase by the FM bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **172**, 533-547.
- Sinha, S. R., Roberts, T. F. & Moss, C. F. (2000). Circuitry for orienting behavior in an FM-bat, *Eptesicus fuscus*: anatomical connections of the superior colliculus. *Soc. Neurosci. Abstr.*, **26**.
- Slobodchikoff, C. N., Ackers, S. H. & van Ert, M. (1998). Geographic variation in alarm calls of Gunnison's prairie dogs. *J. Mammal.*, **79**, 1265-1272.
- Slobodchikoff, C. N., Fischer, C. & Shapiro, J. (1986). Predator-specific alarm calls of prairie dogs. *Am. Zool.*, **26**, 557.
- Smallwood, K. S. (1993). Mountain lion vocalizations and hunting behavior. *Southwest Nat.*, **38**, 65-67.
- Smith, W. J. (1986). Signaling behavior: contributions of different repertoires. In *Dolphin Cognition and Behavior: a Comparative Approach* (R. J. Schusterman, J. A. Thomas & F. G. Wood, eds.). L. Erlbaum Assoc.; Hillsdale, pp. 315-330.
- Smolker, R. A., Mann, J. & Smuts, B. B. (1993). Use of signature whistles during separations and reunions by wild bottle-nosed dolphin mothers and infants. *Behav. Ecol. Sociobiol.*, **33**, 393-402.
- Smolker, R. & Pepper, J. W. (1999). Whistle convergence among allied male bottlenose dolphins (Delphinidae, *Tursiops* sp.). *Ethology*, **105**, 595-617.
- Smolker, R. A. (1993). Acoustic communication in bottlenose dolphins. Ph.D. thesis. University of Michigan.
- Smotherman, M. S. & Metzner, W. (2001). Quantitative analysis of the role of GABAergic and AMPAergic audio-vocal feedback in Doppler-shift compensating horseshoe bats. *Soc. Neurosci. Abstr.*, **27**, 1919.
- Smotherman, M. S. & Metzner, W. (2000). A neural substrate for auditory feedback control of call frequencies in Doppler-shift compensating horseshoe bats. *Soc. Neurosci. Abstr.*, **26**.
- Sokoloff, G., Blumberg, M. S., Lewis, S. J. & Kirby, R. F. (2000). Ultrasonic vocalizations and the autonomic nervous system in infant rats. *Soc. Neurosci. Abstr.*, **26**.
- Sokoloff, G., Blumberg, M. S., Mendella, P. & Brown, R. E. (1997). Clonidine- and separation-induced ultrasound production in infant rats: Cardiovascular interactions. *Dev. Psychobiol.*, **30**, 265.
- Sokoloff, G. & Blumberg, M. S. (1997). Thermogenic, respiratory, and ultrasonic responses of week-old rats across the transition from moderate to extreme cold exposure. *Dev. Psychobiol.*, **30**, 181-194.
- Solomon, N. P., Luschei, E. & Kang, L. (1994). Fundamental frequency and tracheal pressure during three types of vocalization elicited from anesthetized dogs. *J. Voice*, **9**, 403-412.
- Sousa Lima, R. S. & da Silva, V. M. F. (2000). Lack of species-specific vocal recognition in Amazonian manatees: *Trichechus inunguis*. *J. Acoust. Soc. Am.*, **108**, 2542.
- Sousa-Lima, R. S., Paglia, A. P. & da Fonseca, G. A. B. (2002). Signature information and individual recognition in the isolation calls of Amazonian manatees, *Trichechus inunguis* (Mammalia: Sirenia). *Anim. Behav.*, **63**, 301-310.
- Southall, B. L., Schusterman, R. J. & Kastak, D. (2000). Masking in three pinnipeds: Underwater, low-frequency critical ratios. *J. Acoust. Soc. Am.*, **108**, 1322-1326.
- Sparks, T. D. (1998). Distributions of sperm whales along the northwestern and central continental slope in the Gulf of Mexico as determined from an acoustic survey. *Bioacoustics*, **9**, 157.
- Speakman, J. R. (1995). Energetics of echolocation. *Bioacoustics*, **6**, 219.
- Speakman, J. R. & Racey, P. A. (1991). No cost of echolocation for bats in flight. *Nature*, **350**, 421-423.
- Stafford, K. M. & Fox, C. G. (1997). Low-frequency whale calls recorded on hydrophones moored in the eastern tropical Pacific. *J. Acoust. Soc. Am.*, **102**, 3122.
- Stafford, K. M. & Fox, C. G. (1997). Acoustic localizations of blue whales *Balaenoptera musculus* by fixed arrays and moored autonomous hydrophone arrays. *Bioacoustics*, **8**, 260-261.
- Stafford, K. M., Nieukirk, S. L. & Fox, C. G. (1999). Low-frequency whale sounds recorded on hydrophones moored in the eastern tropical Pacific. *J. Acoust. Soc. Am.*, **106**, 3687-3698.
- Stafford, K. M., Fox, C. G. & Clark, D. S. (1998). Long-range acoustic detection, localization of blue whale calls in the northeast Pacific Ocean. *J. Acoust. Soc. Am.*, **104**, 3616-3625.
- Stafford, K. (1994). Acoustic detection and location of blue whales (*Balaenoptera musculus*) from SOSUS by matched filtering. *J. Acoust. Soc. Am.*, **96**, 3250.
- Stafford, K. (2000). Blue whale calls recorded in the Gulf of Alaska. *J. Acoust. Soc. Am.*, **108**, 2614.
- Stafford, K. M., Nieukirk, S. L. & Fox, C. G. (2001). Geographic and seasonal variation of blue whale calls in

- the North Pacific. *J. Cetac. Res. Manage.*, **3**, 65-76.
- Stafford, K. M., Nieuwkirk, S. L. & Fox, C. G. (1999). An acoustic link between blue whales in the eastern tropical Pacific and the northeast Pacific. *Mar. Mamm. Sci.*, **15**, 1258-1268.
- Stiebler, I., Neulust, R., Fichtel, I. & Ehret, G. (1997). The auditory cortex of the house mouse: left-right differences, tonotopic organization and quantitative analysis of frequency representation. *J. Comp. Physiol. A.*, **181**, 559-571.
- Stirling, I. & Roux, J. O. (1987). Fur seal vocalizations. In *Status, Biology and Ecology of Fur Seals* (J. P. Croxall and R. L. Gentry, eds.). U.S. Dept. Com., NOAA Tech. Rep. NMFS, 51, pp. 21-202.
- Strager, H. (1995). Pod-specific call repertoires and compound calls of killer whales, *Orcinus orca* Linnaeus, 1758, in the waters of northern Norway. *Can. J. Zool.*, **73**, 1037-1047.
- Strager, H. (1993). Catalogue of underwater calls from killer whales (*Orcinus orca*) in northern Norway. M. Sc. thesis. University of Aarhus, Denmark.
- Strager, H. & Ugarte, F. (1996). A comparison of killer whale calls from Norway, British Columbia and Iceland. *European Research on Cetaceans*, **9**, 26-27.
- Strifors, H. C., Gaunaurd, G. C. & Moore, P. W. B. (1997). Analysis in the joint time-frequency domain of the identifying signatures of submerged targets insonified by dolphin clicks. *Proc. SPIE (The International Society for Optical Engineering)*, **3069**, 16-25.
- Sturtivant, C. & Datta, S. (1995). Techniques to isolate dolphin whistles and other tonal sounds from background noise. *Acoustics Lett.*, **18**, 189-193.
- Sturtivant, C. & Datta, S. (1998). Dolphin whistle classification with the "Dolphin" software. *Bioacoustics*, **9**, 224.
- Sturtivant, C. R. & Datta, S. (1996). The enhancement and identification of whistles and other tonal sounds from marine mammals among background noise. *European Research on Cetaceans*, **9**, 53-55.
- Sturtivant, C. & Datta, S. (1998). Automatic dolphin whistle detection, extraction, encoding and classification. *Bioacoustics*, **9**, 234.
- Subramaniam, M., Henderson, D. & Spongr, V. P. (1993). Protection from noise induced hearing loss: is prolonged conditioning necessary? *Hear. Res.*, **65**, 234-239.
- Suga, N. (1990). Biosonar and neural computation in bats. *Sci. Am.*, **262**, 34-41.
- Suga, N., Niwa, H., Taniguchi, I. & Margoliash, D. (1987). The personalized auditory cortex of the mustached bat: adaptation for echolocation. *J. Neurophysiol.*, **58**, 643-654.
- Suga, N. & Yajima, Y. (1989). Auditory-vocal integration in the midbrain of the mustached bat: periaqueductal gray and reticular formation. In *The Physiological Control of Mammalian Vocalization* (J. D. Newman, ed.). Plenum Press; New York, pp. 87-98.
- Supin, A. Ya, Popov, V. V. & Klishin, V. O. (1993). ABR frequency tuning curves in dolphins. *J. Comp. Physiol. A.*, **173**, 649-656.
- Supin, A. Ya & Popov, V. V. (1995). Temporal resolution in the dolphin's auditory system revealed by double-click evoked potential study. *J. Acoust. Soc. Am.*, **97**, 2586-2593.
- Supin, A. Ya. & V. V. Popov (1997). Temporal resolution of the dolphin's hearing: Evoked-potential study. *J. Acoust. Soc. Am.*, **102**, 3102.
- Supin, A. & Popov, V. (1995). Frequency tuning and temporal resolution in dolphins. In *Sensory Systems of Aquatic Mammals* (R. A. Kastelein, J. A. Thomas & P. E. Nachtigall, eds.). De Spil Publishers; Woerden, The Netherlands, pp. 95-110.
- Supin, A. Ya. & Popov, V. V. (1993). Direction dependent spectral sensitivity and interaural spectral difference in a dolphin: evoked potential study. *J. Acoust. Soc. Am.*, **93**, 3490-3495.
- Surlykke, A. & Bojesen, O. (1996). Integration time for short broad band clicks in echolocating FM-bats (*Eptesicus fuscus*). *J. Comp. Physiol. A.*, **178**, 235-241.
- Surlykke, A., Miller, L. A., Moehl, B., Andersen, B. B., Christensen-Dalsgaard, J. & Joergensen, M. B. (1993). Echolocation in two very small bats from Thailand, *Craseonycteris thonglongyai* and *Myotis siligorensis*. *Behav. Ecol. Sociobiol.*, **33**, 1-12.
- Surlykke, A. (1988). Interactions between echolocating bats and their prey. In *Animal Sonar: Processes and Performance* (P. E. Nachtigall & P. W. B. Moore, eds.). Plenum Press, New York; pp. 551-566.
- Surlykke, A. & Moss, C. F. (2000). Echolocation behavior of big brown bats, *Eptesicus fuscus*, in the field and the laboratory. *J. Acoust. Soc. Am.*, **108**, 2419-2429.
- Sutherland, D. P., Masterton, R. B. & Glendenning, K. K. (1998). Role of acoustic striae in hearing: Reflexive responses to elevated sound sources. *Behav. Brain Res.*, **97**, 1-12.
- Sutter, M. L., Schreiner, C. E., McLean, M., O'Connor, K. N. & Loftus, W. C. (1999). Organization of inhibitory frequency receptive fields in cat primary auditory cortex. *J. Neurophysiol.*, **82**, 2358-2371.
- Suzuki, R. & Buck, J. R. (2000). Extraction and tracking of bottlenose dolphin whistle contours. *J. Acoust. Soc. Am.*, **108**, 2635.
- Swaigood, R. R., Rowe, M. P. & Owings, D. H. (1999). Assessment of rattlesnake dangerousness by California

- ground squirrels: exploitation of cues from rattling sounds. *Anim. Behav.*, **57**, 1301-1310.
- Swartz, S., Clapham, P., Cole, T., Barlow, J., McDonald, M., Oleson, E. & Hildebrand, J. (2000). Locating and enumerating endangered humpback whales in the eastern Caribbean with directional (DIFAR) sonobuoys. *J. Acoust. Soc. Am.*, **108**, 2540.
- Szymanski, M. D., Bain, D. E., Kiehl, K., Pennington, S., Wong, S. & Henry, K. R. (1999). Killer whale (*Orcinus orca*) hearing: auditory brainstem response and behavioral audiograms. *J. Acoust. Soc. Am.*, **106**, 1134-1141.
- Szymanski, M. D., Bain, D. E. & Henry, K. R. (1995). Auditory evoked potentials of killer whales (*Orcinus orca*). In *Sensory Systems of Aquatic Mammals* (R. A. Kastelein, J. A. Thomas & P. E. Nachtigall, eds.). De Spil Publishers; Woerden, The Netherlands, pp. 1-9.
- Szymanski, M. D., Supin, A. Ya., Bain, D. E. & Henry, K. R. (1998). Killer whale (*Orcinus orca*) auditory potentials to rhythmic clicks. *Mar. Mamm. Sci.*, **14**, 676-691.
- Szymanski, M. D., Bain, D. E., Kiehl, K., Pennington, S., Wong, S. & Henry, K. R. (1999). Killer whale (*Orcinus orca*) hearing: Auditory brainstem response and behavioral audiograms. *J. Acoust. Soc. Am.*, **106**, 1134-1141.
- Talling, J. C., Waran, N. K., Wathes, C. M. & Lines, J. A. (1998). Sound avoidance by domestic pigs depends upon characteristics of the signal. *Appl. Anim. Behav. Sci.*, **58**, 255-266.
- Talwar, S. K. & Gerstein, G. L. (1998). Auditory frequency discrimination in the white rat. *Hear. Res.*, **126**, 135-150.
- Tamura, N. (1995). Postcopulatory mate guarding by vocalization in the Formosan squirrel. *Behav. Ecol. Sociobiol.*, **36**, 377-386.
- Tamura, N. & Yong, H. S. (1993). Vocalizations in response to predators in three species of Malaysian *Callosciurus* (Sciuridae). *J. Mammal.*, **74**, 703-714.
- Tamura, N. (1993). Role of sound communication in mating of Malaysian *Callosciurus* (Sciuridae). *J. Mammal.*, **74**, 468-476.
- Tanyeri, H., Lopez, I. & Honrubia, V. (1995). Histological evidence for hair cell regeneration after ototoxic cell destruction with local application of gentamicin in the chinchilla crista ampullaris. *Hear. Res.*, **89**, 194-202.
- Taylor, A. A. & Weary, D. M. (2000). Vocal responses of piglets to castration: identifying procedural sources of pain. *Appl. Anim. Behav. Sci.*, **70**, 17-26.
- Teeling, E. C., Scally, M., Kao, D. J., Romagnoll, M. L., Springer, M. S. & Stanhope, M. J. (2000). Molecular evidence regarding the origin of echolocation and flight in bats. *Nature*, **403**, 188-192.
- Teimoorzadeh, K. (1995). Seeing in the dark with artificial bats. In *Advances in Artificial Life. Third European Conference on Artificial Life Proceedings* (F. Moran, A. Moreno, J. J. Merelo and P. Chacon, eds.). Springer-Verlag; pp. 590-601.
- Tembrock, G. (1996). Communication by falsetto. *Bioacoustics*, **6**, 309.
- Tembrock, G. (1996). *Acoustic Communication in Mammals. The Voices of Mammals and Their Meaning*. Wissenschaftliche Buchgesellschaft; Darmstadt (German).
- Teranishi, A. M., Hildebrand, J. A., McDonald, M. A. & Moore, S. E. (1997). Acoustic and visual studies of blue whales near the California Channel Islands. *J. Acoust. Soc. Am.*, **102**, 3121.
- Terhune, J. M., Healey, S. R. & Burton, H. R. (2001). Easily measured call attributes can detect vocal differences between Weddell seals from two areas. *Bioacoustics*, **11**, 211-222.
- Terhune, J. M. (1994). Geographic variation of harp seal underwater vocalisations. *Can. J. Zool.*, **72**, 892-897.
- Terhune, J. M., Grandmaitre, N. C., Burton, H. R. & Green, K. (1994). Weddell seals lengthen many underwater calls in response to conspecific vocalizations. *Bioacoustics*, **5**, 223-226.
- Terhune, J. M. (1999). Pitch separation as a possible jamming avoidance mechanism in underwater calls of bearded seals (*Erignathus barbatus*). *Can. J. Zool.*, **77**, 1025-1034.
- Terhune, J. M., Addy, T. C., Jones, T. A. M. & Burton, H. R. (2001). Underwater calling rates of harp and Weddell seals as a function of hydrophone location. *Polar Biol.*, **35**, 144-146.
- Terhune, J. M., Burton, H. & Green, K. (1993). Classification of diverse call types using cluster analysis techniques. *Bioacoustics*, **4**, 245-258.
- Terrazas, A., Nowak, R., Serafin, N., Ferreira, G., Levy, F. & Poindron, P. (2002). Twenty-four-hour-old lambs rely more on maternal behavior than on the learning of individual characteristics to discriminate between their own and an alien mother. *Dev. Psychobiol.*, **40**, 408-418.
- Thewissen, J. G. M. & Hussain, S. T. (1993). Origin of underwater hearing in whales. *Nature*, **361**, 444-445.
- Thies, W., Kalko, E. K. V. & Schnitzler, H.-U. (1998). The roles of echolocation and olfaction in two neotropical fruit-eating bats, *Carollia perspicillata* and *C. castanea*, feeding on *Piper*. *Behav. Ecol. Sociobiol.*, **42**, 397-409.
- Thode, A. M., Mellinger, D. K., Stienessen, S., Martinez, A. & Mullin, K. D. (2000). Three-dimensional localization of diving sperm whales using a short-aperture towed horizontal array. *J. Acoust. Soc. Am.*,

- Thode, A., Norris, T. & Barlow, J. (2000). Frequency beamforming of dolphin whistles using a sparse three-element towed array. *J. Acoust. Soc. Am.*, **107**, 3581-3584.
- Thode, A. M., D'Spain, G. L. & Kuperman, W. A. (2000). Matched-field processing, geoacoustic inversion, and source signature recovery of blue whale vocalizations. *J. Acoust. Soc. Am.*, **107**, 1286-1300.
- Thomas, J., Kastelein, R. A. & Y. Yu. Supin, eds. (1993). *Marine Mammal Sensory Systems*. Plenum Press; New York.
- Thomas, T. J., Weary, D. M. & Appleby, M. C. (2001). Newborn and 5-week old calves vocalize in response to milk deprivation. *Appl. Anim. Behav. Sci.*, **74**, 165-173.
- Thomas, J. A. & Golladay, C. L. (1995). Geographic variation in leopard seal (*Hydrurga leptonyx*) underwater vocalizations. In *Sensory Systems of Aquatic Mammals* (R. A. Kastelein, J. A. Thomas and P. E. Nachtigall, eds.). De Spil Publishers; Woerden, The Netherlands, pp. 201-221.
- Thomas, J., Stoermer, M., Bowers, C., Anderson L. & Garver, A. (1988). Detection abilities and signal characteristics of echolocating false killer whales (*Pseudorca crassidens*). In *Animal Sonar: Processes and Performance* (P. Nachtigall and P. W. B. Moore, eds.). NATO ASI Series A, Vol. 156. Plenum Press; London.
- Thomas, J. A. & Turl, C. W. (1990). Echolocation characteristics and range detection threshold of a false killer whale. In *Sensory Abilities of Cetaceans* (J. Thomas & R. Kastelein, eds.). Plenum Press; New York, pp. 321-334.
- Thompson, P. O., Cummings, W. C. & Ha, S. J. (1986). Sounds, source levels, and associated behavior of humpback whales, Southeast Alaska. *J. Acoust. Soc. Am.*, **80**, 735-740.
- Thompson, P. O., Findley, L. T. & Vidal, O. (1992). 20 Hz pulses and other vocalizations of fin whales *Balaenoptera physalus* in the Gulf of California, Mexico. *J. Acoust. Soc. Am.*, **92**, 3051-3057.
- Thompson, P. O. & Cummings, W. C. (2000). Stereotyped and other vocalizations of fin whales (*Balaenoptera physalus*) off Chile. *J. Acoust. Soc. Am.*, **108**, 2634.
- Thompson, P. O., Findley, L. T., Vidal, O. & Cummings, W. C. (1996). Underwater sounds of blue whales, *Balaenoptera musculus*, in the Gulf of California, Mexico. *Mar. Mamm. Sci.*, **12**, 288-292.
- Thomsen, F., Franck, D. & Ford, J. K. (2001). Characteristics of whistles from the acoustic repertoire of resident killer whales (*Orcinus orca*) off Vancouver Island, British Columbia. *J. Acoust. Soc. Am.*, **109**, 1240-1246.
- Thomsen, F., Ford, J. K. B. & Franck, D. (1996). Whistles as close range emotive signals in wild killer whales *Orcinus orca* off Vancouver Island, British Columbia, Canada. *Bioacoustics*, **6**, 309-310.
- Thomsen, F., Ford, J. K. B. & Franck, D. (1996). Whistles as close range emotive signals in wild killer whales (*Orcinus orca*) off Vancouver Island, British Columbia. *European Research on Cetaceans*, **9**, 15-17.
- Thorpe, C. W., Bates, R. H. T. & Dawson, S. M. (1991). Intrinsic echolocation capability of Hector's dolphin, *Cephalorhynchus hectori*. *J. Acoust. Soc. Am.*, **90**, 2931-2934.
- Tian, B. & Rauschecker, J. P. (1992). Neuronal responses to frequency modulated sounds in the anterior auditory field AAF of the cat's cortex. *Soc. Neurosci. Abstr.*, **18**, 843.
- Tian, B. & Schnitzler, H.-U. (1997). Echolocation signals of the greater horseshoe bat (*Rhinolophus ferrumequinum*) in transfer flight and during landing. *J. Acoust. Soc. Am.*, **101**, 2347-2364.
- Todd, S., Stevick, P., Lien, J., Marques, F. & Ketten, D. (1996). Behavioural effects of exposure to underwater explosions in humpback whales (*Megaptera novaeangliae*). *Can. J. Zool.*, **74**, 1661-1672.
- Tokuda, I., Riede, T., Neubauer, J., Owren, M. J. & Herzog, H. (2002). Nonlinear analysis of irregular animal vocalizations. *J. Acoust. Soc. Am.*, **111**, 2908-2919.
- Tompkins, B. J. & Zegers, D. A. (2001). Behavioral responses of the eastern chipmunk, *Tamias striatus*, to the vocalizations of four common North American raptors. *J. Pennsylv. Acad. Sci.*, **75**, 13-18.
- Tost, J. & Hoerning, B. (2001). Vocalisation of bulls in a herd of free ranging. *Adv. Ethol.*, **36**, 276.
- Tougaard, J., Casseday, J. H. & Covey, E. (1998). Arctiid moths and bat echolocation: broad-band clicks interfere with neural responses to auditory stimuli in the nuclei of the lateral lemniscus of the big brown bat. *J. Comp. Physiol. A.*, **182**, 203-215.
- Triblehorn, J. D. & Yager, D. D. (2002). Implanted electrode recordings from a praying mantis auditory interneuron during flying bat attacks. *J. Exp. Biol.*, **205**, 307-320.
- Trincheri, C., Giacomini, C. & Ostellini, R. (1997). Spectrographic analysis of cat *Felis catus* vocalisations during the early months of life. *Bioacoustics*, **8**, 257-258.
- Troest, N. & Moehl, B. (1986). The detection of phantom targets in noise by serotine bats; negative evidence for the coherent receiver. *J. Comp. Physiol. A.*, **159**, 559-567.
- Tupiner, Y. (1998). The sonar in Chiroptera: Reflections on the behaviour. *Bull. Soc. Zool. France*, **123**, 255-266 (French).
- Turcott, S., Moons, C. & Zanella, A. (2001). Foal vocalizations and stress during weaning. *J. Anim. Sci.*, **79**, Suppl. 2, 109.

- Turl, C. W. & Penner, R. H. (1989). Differences in echolocation click patterns of the beluga (*Delphinapterus leucas*) and the bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. Am.*, **86**, 497-502.
- Turl, C. W. (1987). The ability of the California sea lion, *Zalophus californianus*, to bistatically detect and localize echoes from underwater targets. *J. Acoust. Soc. Am.*, **82**, 381-383.
- Turl, C. W., Penner, R. H. & Au, W. W. L. (1987). Comparison of target detection capabilities of the beluga and bottlenose dolphin. *J. Acoust. Soc. Am.*, **82**, 1487-1491.
- Turl, C. W. (1993). Low-frequency sound detection by a bottlenose dolphin. *J. Acoust. Soc. Am.*, **94**, 3006-3008.
- Turl, C. W., Skaar, D. J. & Au, W. W. L. (1991). The echolocation ability of the beluga (*Delphinapterus leucas*) to detect targets in clutter. *J. Acoust. Soc. Am.*, **89**, 896-901.
- Turnbull, S. D. & Terhune, J. M. (1993). Repetition enhances hearing detection thresholds in a harbor seal *Phoca vitulina*. *Can. J. Zool.*, **71**, 926-932.
- Tuttle, M. D., Ryan, M. J. & Belwood, J. J. (1987). Acoustic resource partitioning by two species of phyllostomid bats (*Trachops cirrhosus* and *Tonatia sylvicola*). *Anim. Behav.*, **33**, 1369-1371.
- Tyack, P. L. (1997). Development and social functions of signature whistles in bottlenose dolphins *Tursiops truncatus*. *Bioacoustics*, **8**, 21-46.
- Tyack, P. L. & Recchia, C. A. (1991). A datalogger to identify vocalizing dolphins. *J. Acoust. Soc. Am.*, **90**, 1668-1671.
- Tyack, P. (1991). If you need me, whistle. *Nat. Hist.*, **8/91**, 60-61.
- Tyack, P. L. & Clark, C. W. (1997). Long range acoustic propagation of whale vocalisations. *Adv. Ethol.*, **32**, 28.
- Tyack, P. & Sayigh, L. (1997). Vocal learning in cetaceans. In *Social Influences on Vocal Development* (C. Snowdon & M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 208-233.
- Tyack, P. (1986). Whistle repertoires of two bottlenosed dolphins, *Tursiops truncatus*: mimicry of signature whistles? *Behav. Ecol. Sociobiol.*, **18**, 251-257.
- Tyack, P. L. (2000). Dolphins whistle a signature tune. *Science*, **289**, 1310-1311.
- Uetake, K., Yyou, K. & Okamoto, T. (1996). Auditory brainstem response and objective assessment of hearing thresholds in cowshed calves. *J. Ethol.*, **14**, 73-75.
- Ulfendahl, M. & Khanna, S. M. (1993). Mechanical tuning characteristics of the hearing organ measured at the sensory cells in the gerbil temporal bone preparation. *Eur. J. Physiol.*, **424**, 95-104.
- Ulfendahl, M., Khanna, S. M. & Lofstrand, P. (1993). Changes in the mechanical tuning characteristics of the hearing organ following acoustic overstimulation. *Eur. J. Neurosci.*, **5**, 713-723.
- Valentine, D. E., Sinha, S. R. & Moss, C. F. (2002). Orienting responses and vocalizations produced by microstimulation in the superior colliculus of the echolocating bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **188**, 89-108.
- Valone, T. J. (1996). Food-associated calls as public information about patch quality. *Oikos*, **77**, 153-157.
- Vankova, D. & Malek, J. (1997). Characteristics of the vocalizations of red deer *Cervus elaphus* hinds and calves. *Bioacoustics*, **7**, 281-289.
- Vankova, D., Bartos, L. & Malek, J. (1997). The role of vocalization in the communication between red deer hinds and calves. *Ethology*, **103**, 795-808.
- Vater, M., Koessl, M. & Horn, A. K. E. (1992). GAD- and GABA-immunoreactivity in the ascending auditory pathway of horseshoe and mustached bats. *J. Comp. Neurol.*, **325**, 183-206.
- Vater, M. & Braun, K. (1994). Parvalbumin, calbindin D-28k, and calretin immunoreactivity in the ascending auditory pathway of horseshoe bats. *J. Comp. Neurol.*, **341**, 534-558.
- Vater, M. & Koessl, M. (1996). Further studies on the mechanics of the cochlear partition in the mustached bat. I. Ultrastructural observations on the tectorial membrane and its attachments. *Hear. Res.*, **94**, 63-77.
- Vaughan, N., Jones, G. & Harris, S. (1997). Identification of British bat species by multivariate analysis of echolocation call parameters. *Bioacoustics*, **7**, 189-207.
- Vaughan, N., Jones, G. & Harris, S. (1997). Habitat use by bats (Chiroptera) assessed by means of a broad-band acoustic method. *J. Appl. Ecol.*, **34**, 716-730.
- Veitl, S., Begall, S. & Burda, H. (2000). Ecological determinants of vocalisation parameters: the case of the coruro *Spalacopus cyanus* (Octodontidae), a fossorial social rodent. *Bioacoustics*, **11**, 129-148.
- Verboom, B., Boonman, A. M. & Limpens, H. J. G. A. (1999). Acoustic perception of landscape elements by the pond bat (*Myotis dasycneme*). *J. Zool.*, **248**, 59-66.
- Versnel, H., Prijs, V. F. & Schoonhoven, R. (1997). Auditory-nerve fiber responses to clicks in guinea pigs with a damaged cochlea. *J. Acoust. Soc. Am.*, **101**, 993-1009.
- Vieten, M., Kamper, K. & Diel, R. D. (1989). Social learning with bats. Behavioural science with PC-assisted acoustic measurement engineering. *Feinwerktechnik & Messtechnik*, **97**, 551-552 (German).
- Vischer, M. W., Haeusler, R. & Rouiller, E. M. (1994). Distribution of Fos-like immunoreactivity in the auditory pathway of the Sprague-Dawley rat elicited by electrical stimulation. *Neurosci. Res.*, **19**, 175-185.
- Vivian, J. A., Barros, H. M. T., Manitiu, A. & Miczek, K. A. (1997). Ultrasonic vocalizations in rat pups: Modulation at the gamma-aminobutyric receptor complex and the neurosteroid recognition site. *J.*

- Pharmacol. Exp. Therapeutics*, **282**, 318-325.
- Vivian, J. A. & Miczek, K. A. (1993). Morphine attenuates ultrasonic vocalization during agonistic encounters in adult male rats. *Psychopharmacology*, **111**, 367-375.
- Vivian, J. A. & Miczek, K. A. (1993). Diazepam and gepirone selectively attenuate either 20-32 or 32-64 kHz ultrasonic vocalizations during aggressive encounters. *Psychopharmacology*, **112**, 66-73.
- Voelk, E., Doerrie, M., Schmidt, S. & Yapa, W. B. (2001). Does the response behaviour of male *Megaderma lyra* to contact calls depend on the sex of the caller? *Adv. Ethol.*, **36**, 284.
- Volodina, E. V. (2000). Vocal repertoire of the cheetah *Acinonyx jubatus* (Carnivora, Felidae) in captivity: Sound structure and their potential for estimating the state of adult animals. *Zoologicheskii Zhurnal*, **79**, 833-843.
- Volodina, E. V. & Volodin, I. A. (2000). Bioacoustic features of self-esteem in the cheetah. *Adv. Ethol.*, **35**, 60.
- Wadsworth, J. & Moss, C. F. (2000). Vocal control of acoustic information for sonar discriminations by the echolocating bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **107**, 2265-2271.
- Wahlberg, M., Moehl, B. & Madsen, P. T. (2001). Estimating source position accuracy of a large-aperture microphone array for bioacoustics. *J. Acoust. Soc. Am.*, **109**, 397-406.
- Wahlberg, M., Lettevall, E. & Medlund, L. (1996). Estimating the length of sperm whales from interpulse intervals in their clicks. *European Research on Cetaceans*, **9**, 38-40.
- Walker, V. A., Peremans, H. & Hallam, J. C. T. (1998). One tone, two ears, three dimensions: A robotic investigation of pinnae movements used by rhinolophid and hipposiderid bats. *J. Acoust. Soc. Am.*, **104**, 569-579.
- Wallace, M. N. & Harper, M. S. (1997). Callosal connections of the ferret primary auditory cortex. *Exp. Brain Res.*, **116**, 367-374.
- Walton, J., Frisina, R. & O'Neill, W. (1998). Age-related alteration in processing of temporal sound features in the auditory midbrain of the CBA mouse. *J. Neurosci.*, **18**, 2764-2776.
- Wang, X. & Kadia, S. C. (2001). Differential representation of species-specific primate vocalizations in the auditory cortices of marmoset and cat. *J. Neurophysiol.*, **86**, 2616-2620.
- Warr, W. B. (1992). Organization of olivocochlear efferent systems in mammals. In *The Anatomy of the Mammalian Auditory Pathways* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer; New York, pp. 410-488.
- Wartzok, D., Sayegh, S., Stone, H., Barchak, J. & Barnes, W. (1992). Acoustic tracking system for monitoring under-ice movements of polar seals. *J. Acoust. Soc. Am.*, **92**, 682-687.
- Waters, D. A. (1993). The auditory response of noctuid moths to the echolocation calls of bats. Ph.D. thesis. University of Bristol.
- Waters, D. A. & Jones, G. (1995). Echolocating bats and tympanate moths: interactions and perspectives. *Bioacoustics*, **6**, 217.
- Waters, D. A. & Jones, G. (1996). The peripheral auditory characteristics of noctuid moths. I. Responses to the search-phase echolocation calls of bats. *J. Exp. Biol.*, **199**, 847-856.
- Waters, D. A. & Jones, G. (1994). Wingbeat-generated ultrasound in noctuid moths increases the discharge rate of the bat-detecting A1 cell. *Proc. Roy. Soc. Lond. B.*, **258**, 41-46.
- Waters, D. A. & Walsh, A. L. (1994). The influence of bat detector brand on the quantitative estimation of bat activity. *Bioacoustics*, **5**, 205-221.
- Waters, D. A., Rydell, J. & Jones, G. (1995). Echolocation call design and limits on prey size: a case study using the aerial-hawking bat *Nyctalus leisleri*. *Behav. Ecol. Sociobiol.*, **37**, 321-328.
- Waters, D. A. & Jones, G. (1995). Echolocation call structure and intensity in five species of insectivorous bats. *J. Exp. Biol.*, **198**, 475-489.
- Watkins, W. A., Daher, M. A., Fristrup, K. & Notarbartolo di Sciara, G. (1994). Fishing and acoustic behaviour of Fraser's dolphin (*Lagenodelphis hoseii*) near Dominica, Southeast Caribbean. *Carib. J. Sci.*, **30**, 76-82.
- Watkins, W. A., Tyack, P. & Moore, K. E. (1987). The 20 Hz signals of finback whales (*Balaenoptera physalus*). *J. Acoust. Soc. Am.*, **82**, 1901-1912.
- Watkins, W. A. (1996). Fin whale sounds. *European Research on Cetaceans*, **9**, 11-13.
- Watkins, W. A., Daher, M. A., Reppucci, G. M., George, J. E., Martin, D. L., DiMarzio, N. A. & Gannon, D. P. (2000). Seasonality and distribution of whale calls in the North Pacific. *Oceanography*, **13**, 62-67.
- Watts, J. M., Stookey, J. M., Schmutz, S. M. & Waltz, C. S. (2001). Variability in vocal and behavioural responses to visual isolation between full-sibling families of beef calves. *Appl. Anim. Behav. Sci.*, **70**, 255-273.
- Watts, J. M. & Stookey, J. M. (2001). The propensity of cattle to vocalise during handling and isolation is affected by phenotype. *Appl. Anim. Behav. Sci.*, **74**, 81-95.
- Watts, J. M. & Stookey, J. M. (2000). Vocal behaviour in cattle: the animal's commentary on its biological processes and welfare. *Appl. Anim. Behav. Sci.*, **67**, 15-33.

- Watts, J. M. & Stookey, J. M. (1998). Effects of restraint and branding on rates and acoustic parameters of vocalizations in beef cattle. *Appl. Anim. Behav. Sci.*, **62**, 125-135.
- Watts, J. M. & Stookey, J. M. (1999). Effects of restraint and branding on rates and acoustic parameters of vocalization in beef cattle. *Appl. Anim. Behav. Sci.*, **62**, 125-135.
- Weary, D. M. & Fraser, D. (1997). Vocal response of piglets to weaning: effect of piglet age. *Appl. Anim. Behav. Sci.*, **54**, 153-160.
- Weary, D. M., Ross, S. & Fraser, D. (1997). Vocalizations by isolated piglets: a reliable indicator of piglet need directed towards the sow. *Appl. Anim. Behav. Sci.*, **53**, 249-257.
- Weary, D. M. & Kramer, D. L. (1995). Response of eastern chipmunks to conspecific alarm calls. *Anim. Behav.*, **49**, 81-93.
- Weary, D. M. & Fraser, D. (1995). Calling by domestic piglets: reliable signals of need? *Anim. Behav.*, **50**, 1047-1055.
- Weary, D. M. & Fraser, D. (1999). Responses of piglets to early separation from the sow. *Appl. Anim. Behav. Sci.*, **63**, 289-300.
- Weary, D. M., Braithwaite, L. A. & Fraser, D. (1998). Vocal response to pain in piglets. *Appl. Anim. Behav. Sci.*, **56**, 161-172.
- Weary, D. M., Lawson, G. L. & Thompson, B. K. (1996). Sows show stronger responses to isolation calls of piglets associated with greater levels of piglet need. *Anim. Behav.*, **52**, 1247-1253.
- Weber, C., Kim, P., Rovnaghi, C. R., Williams, K., Dykman, R. A. & Anand, K. J. S. (2000). Ontogeny of ultrasonic vocalization (USV) following graded sensory stimuli in infant rats. *Pediatr. Res.*, **47**, 35A.
- Weber, M. (2000). Conditioned changes in ultrasonic vocalizations to an aversive olfactory stimulus are lateralized in 6-day-old rats. *Dev. Psychobiol.*, **37**, 121-128.
- Webster, D. B., Popper, A. N. & Fay, R. R., eds. (1992). *The Mammalian Auditory Pathway: Neuroanatomy*. Springer-Verlag; New York.
- Wegner, T. & Schmidt, U. (1996). Dynamic changes of echolocation properties induced by small band noise in *Rhinopoma microphyllum* (Chiroptera). *Z. Säugetierkd.*, **61** (Sonderheft), 67 (German).
- Weid, R. & von Helversen, O. (1987). Echolocation calls of European bats in hunting flight in open areas. *Myotis*, **25**, 5-27 (German).
- Weilgart, L. & Whitehead, H. (1997). Group-specific dialects and geographical variation in coda repertoire in South Pacific sperm whales. *Behav. Ecol. Sociobiol.*, **40**, 277-285.
- Weilgart, L. & Whitehead, H. (1993). Coda communication by sperm whales (*Physeter macrocephalus*) off the Galapagos Islands. *Can. J. Zool.*, **71**, 744-752.
- Weller, A. & Gispan, I. H. (2000). A cholecystokinin receptor antagonist blocks milk-induced but not maternal-contact-induced decrease of ultrasonic vocalization in rat pups. *Dev. Psychobiol.*, **37**, 35-43.
- Wenstrup, J. J. (1999). Frequency organization and responses to complex sounds in the medial geniculate body of the mustached bat. *J. Neurophysiol.*, **82**, 2528-2544.
- Wetzel, W., Wagner, T., Ohl, F. W. & Scheich, H. (1998). Categorical discrimination of direction in frequency-modulated tones by Mongolian gerbils. *Behav. Brain Res.*, **91**, 29-39.
- Wetzel, W. W., Ohl, F. W., Neubauer, H., Wagner, T. & Scheich, H. (2001). Impairment of tone sequence discrimination learning by auditory cortex lesions in Mongolian gerbils. *Soc. Neurosci. Abstr.*, **27**, 2255.
- White, N. R., Gonzales, R. N. & Barfield, F. J. (1993). Do vocalizations of the male rat elicit calling from the female? *Behav. Neural Biol.*, **59**, 76-78.
- White, N. R., Prasad, M., Barfield, R. J. & Nyby, J. G. (1998). 40 and 70 kHz vocalizations of mice (*Mus musculus*) during copulation: Do they facilitate courtship of mice? *Physiol. Behav.*, **63**, 467-473.
- White, R. G., DeShazer, J. A., Tressler, C. J., Borchert, G. M., Davey, S., Wanninge, A., Parkhurst, A. M., Milanuk, M. J. & Clemens, E. T. (1995). Vocalization and physiological response of pigs during castration with or without a local anesthetic. *J. Anim. Sci.*, **73**, 381-386.
- Whitehead, H. & Weilgart, I. (1990). Click rates from sperm whales. *J. Acoust. Soc. Am.*, **87**, 1798-1806.
- Whitehead, M. L., Stagner, B. B., Lonsbury-Martin, B. L. & Martin, G. K. (1994). Measurement of otoacoustic emissions for hearing assessment. *IEEE, Engineering in Medicine and Biology Magazine*, **13**, 210-226.
- Whitehead, H., Dillon, M., Dufault, S., Weilgart, L. & Wright, J. (1998). Non-geographically based population structure of South Pacific sperm whales: dialects, fluke-markings and genetics. *J. Anim. Ecol.*, **67**, 253-262.
- Wiegand, L. & Schmidt, S. (1996). Temporal integration in the echolocating bat, *Megaderma lyra*. *Hear. Res.*, **102**, 35-42.
- Wilden, I., Herzog, H., Peters, G. & Tembrock, G. (1998). Subharmonics, biphonation, and deterministic chaos in mammal vocalization. *Bioacoustics*, **9**, 171-196.
- Wilden, I. & Tembrock, G. (1994). On the call repertoire of the African wild dog (*Lycaon pictus*, Canidae) and

- on postnatal ontogenesis. *Z. Säugetierkd.*, **59** (Sdh.), 50.
- Wilkins, K. T., Roberts, J. C., Roorda, C. S. & Hawkins, J. E. (1999). Morphometrics and functional morphology of middle ears of extant pocket gophers (Rodentia: Geomyidae). *J. Mammal.*, **80**, 180-198.
- Wilkinson, G. S. (1992). Vocal advertisement and group foraging in greater spear-nosed bats. *Bat Res. News*, **33**, 80.
- Wilkinson, G. S. & Boughman, J. W. (1998). Social calls coordinate foraging in greater spear-nosed bats. *Anim. Behav.*, **55**, 337-350.
- Williams, M. T., Hennessy, M. B. & Davis, H. N. (1998). Stress during pregnancy alters rat offspring morphology and ultrasonic vocalizations. *Physiol. Behav.*, **63**, 337-343.
- Winslow, J. T., Hearn, E. F., Ferguson, J., Young, L. J., Matzuk, M. M. & Insel, T. R. (2000). Infant vocalization, adult aggression, and fear behavior of an oxytocin null mutant mouse. *Horm. Behav.*, **37**, 145-155.
- Wintink, A. J. & Brudzynski, S. M. (2001). The related roles of dopamine and glutamate in the initiation of 50-kHz ultrasonic calls in adult rats. *Pharmacol. Biochem. Behav.*, **70**, 317-323.
- Wise, K. K., Conover, M. R. & Knowlton, F. F. (1999). Response of coyotes to avian distress calls: Testing the startle-predator and predator-attraction hypotheses. *Behaviour*, **136**, 935-950.
- Withington-Wray, D. J., Binns, K. E., Dhanjal, S. D., Brickley, S. G. & Keating, M. J. (1990). The maturation of the superior collicular map of auditory space in the guinea-pig is disrupted by developmental auditory deprivation. *Eur. J. Neurosci.*, **2**, 693-703.
- Withington, D. J. (1992). The effect of binocular lid suture on auditory responses in the guinea-pig superior colliculus. *Neurosci. Lett.*, **136**, 153-156.
- Wolski, L. F., Anderson, R. C. & Bowles, A. E. (2000). A comparison of behavioral and auditory brainstem response methods for examining hearing sensitivities in the harbor seal (*Phoca vitulina*). *J. Acoust. Soc. Am.*, **108**, 2516.
- Wong, J., Stewart, P. D. & MacDonald, D. W. (1999). Vocal repertoire in the European badger (*Meles meles*): Structure, context, and function. *J. Mammal.*, **80**, 570-588.
- Wong, G. S. K. & Zhu, S. (1995). Speed of sound in seawater as a function of salinity, temperature, and pressure. *J. Acoust. Soc. Am.*, **97**, 1732-1736.
- Woodward, B. & Coggrave, C. R. (1996). Tracking cetaceans by sonar click detection. *European Research on Cetaceans*, **9**, 50-52.
- Woodward, B. (1998). Principles of tracking bio-sonar sources underwater. *Bioacoustics*, **9**, 234-235.
- Woody, C. D., Wang, X. F. & Gruen, E. (1998). Acoustic transmission in the dentate nucleus. I. Patterns of activity to click and hiss. II. Changes in activity and excitability after conditioning. *Brain Res.*, **789**, 74-83.
- Wotton, J. M., Haresign, T. & Simmons, J. A. (1995). Spatially dependent acoustic cues generated by the external ear of the big brown bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **98**, 1423-1445.
- Wotton, J. M., Haresign, T., Ferragamo, M. J. & Simmons, J. A. (1996). Sound source elevation and external ear cues influence the discrimination of spectral notches by the big brown bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **100**, 1764-1776.
- Wotton, J. M. & Jenison, R. L. (1997). A backpropagation network model of the monaural localization information available in the bat echolocation system. *J. Acoust. Soc. Am.*, **101**, 2964-2972.
- Wotton, J. M., Jenison, R. L. & Hartley, D. J. (1997). The combination of echolocation emission and ear reception enhances directional spectral cues of the big brown bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **101**, 1723-1733.
- Wotton, J. M. & Simmons, J. A. (2000). Spectral cues and perception of the vertical position of targets by the big brown bat, *Eptesicus fuscus*. *J. Acoust. Soc. Am.*, **107**, 1034-1041.
- Xin, H., DeShazer, J. A. & Leger, D. W. (1989). Pig vocalization under selected husbandry practices. *Transactions ASAE*, **32**, 2181-2184.
- Xu, L. & Middlebrooks, J. C. (2000). Individual differences in external-ear transfer functions of cats. *J. Acoust. Soc. Am.*, **107**, 1451-1459.
- Yahr, J. S., Baseheart, B. J., Land, C. L., Akamatsu, T., Yan, H. Y. & Barron, S. (2000). An examination of the types of ultrasonic vocalizations displayed by neonatal rats. *Soc. Neurosci. Abstr.*, **26**.
- Yajima, Y. & Hayashi, Y. (1992). Convergence of excitatory inputs from the central grey matter, vocal center and inferior colliculus to a single reticular neuron in the rat. *Soc. Neurosci. Abstr.*, **18**, 1052.
- Yamanaka, Y., Sakamoto, T., Wada, K. & Nakajima, Y. (1993). Activities of the intralaryngeal muscles during electrically induced vocalization in decerebrate cats. *Neurosci. Res.*, **17**, 77-81.
- Yan, J. & Suga, N. (1996). Corticofugal modulation of time-domain processing of biosonar information in bats. *Science*, **273**, 1100-1103.
- Yan, J. & Suga, N. (1996). The midbrain creates and the thalamus sharpens echo-delay tuning for the cortical

- representation of target-distance information in the mustached bat. *Hear. Res.*, **93**, 102-110.
- Yan, J. & Suga, N. (1999). Corticofugal amplification of facilitative auditory responses of subcortical combination sensitive neurons in the mustached bat. *J. Neurophysiol.*, **81**, 817-824.
- Yin, S. (2002). A new perspective on barking in dogs (*Canis familiaris*). *J. Comp. Psychol.*, **116**, 189-193.
- Youfu, X. & Rongcai, J. (1986). Underwater signals of the Baiji, *Lipotes vexillifer*. In *Biology and Conservation of River Dolphins* (W. F. Perrin et al., eds.). IUCN Species Survival Commission, Occasional Paper 3.
- Young, B. J. & Leaton, R. N. (1992). Amygdala central nucleus lesions attenuate the bradycardia, tachycardia and behavioral freezing elicited by acoustic stimuli in rats. *Soc. Neurosci. Abstr.*, **18**, 1565.
- Young, A. (1988). Echolocation - listening in the dark. *Australian Science magazine*, **2**, 26-29.
- Zaslavskiy, G. L. (1998). Double-click representation in the dolphin auditory system. *Bioacoustics*, **9**, 226.
- Zaslavskiy, G. L. (1998). The time resolution of the dolphin's sonar: what is actual? *Bioacoustics*, **9**, 235.
- Zbinden, K. & Zingg, P. (1986). Search and hunting signals of echolocating European free-tailed bats, *Tadarida teniotis*. *Mammalia*, **50**, 9-25.
- Zenner, H. P. & Ernst, A. (1993). Cochlear motor transduction and signal transfer tinnitus: models for three types of cochlear tinnitus. *Eur. Arch. Oto-Rhino-Laryngol.*, **249**, 447-454.
- Zhang, Y. & Suga, N. (2000). Modulation of responses and frequency tuning of thalamic and collicular neurons by cortical activation in mustached bats. *J. Neurophysiol.*, **84**, 325-333.
- Zhang, J. P., Jen, P. H.-S. & Sun, X. (2000). Direction-dependent corticofugal modulation of frequency-tuning curves on inferior collicular neurons in the big brown bat, *Eptesicus fuscus*. *J. Comp. Physiol. A.*, **186**, 913-922.
- Zhao, H.-B. & Liang, Z.-A. (1996). Processing of modulation frequency in the dorsal cochlear nucleus of the guinea pig: sinusoidal frequency-modulated tones. *Hear. Res.*, **95**, 120-134.
- Zheng, X. Y., Henderson, D., McFadden, S. L., Ding, D. L. & Salvi, R. J. (1999). Auditory nerve fiber responses following chronic cochlear deafferentation. *J. Comp. Neurol.*, **406**, 72-86.
- Zhou, X. & Jen, P. H.-S. (2001). The effect of sound intensity on duration-tuning characteristics of bat inferior collicular neurons. *J. Comp. Physiol. A.*, **187**, 63-73.
- Zhou, X. M. & Jen, P. H.-S. (2000). Neural inhibition sharpens auditory spatial selectivity of bat inferior colliculus neurons. *J. Comp. Physiol. A.*, **186**, 389-398.
- Zimmerberg, B., Brunelli, S. A. & Hofer, M. A. (1994). Reduction of rat pup ultrasonic vocalizations by the neuroactive steroid allopregnanolone. *Pharmacol. Biochem. Behav.*, **47**, 735-738.
- Zimmerberg, B. & McDonald, B. C. (1996). Prenatal alcohol exposure influences the effects of neuroactive steroids on separation-induced ultrasonic vocalizations in rat pups. *Pharmacol. Biochem. Behav.*, **55**, 541-547.
- Zmarich, C., Vernier, E. & Ferrero, F. (1997). Methodological considerations on the acoustic signal analysis for two species of bats (Chiroptera, Vespertilionidae). *Bioacoustics*, **8**, 275-276.

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- Adam, G. (1993). Communication in animals. In *Acta Neurochirurgica Supplementum, Vol. 56. Language and Speech* (E. Pasztor, J. Vajda & F. Loew, eds). Springer-Verlag; Vienna, pp. 9-13.
- Addington, R. L. (1992). *Food calls and group foraging in red-bellied tamarins*. M.S. thesis, Bucknell University.
- Ahissar, E., Abeles, M., Ahissar, M., Haidarliu, S. & Vaadia, E. (1998). Hebbian-like functional plasticity in the auditory cortex of the behaving monkey. *Neuropharmacology*, **37**, 633-655.
- Aichi, H., Moos-Heilen, R. & Zimmerman, E. (1990). Vocalizations of adult gelada baboons (*Theropithecus gelada*): acoustic structure and behavioural context. *Folia Primatol.*, **55**, 109-132.
- Anderson, M. J., Ambrose, L., Bearder, S. K., Dixson, A. F. & Pullen, S. (2000). Intraspecific variation in the vocalizations and hand pad morphology of southern lesser bush babies (*Galago moholi*): A comparison with *G. senegalensis*. *Int. J. Primatol.*, **21**, 537-555.
- Arcadi, A. C., Daniel, R. & Boesch, C. (1998). Buttress drumming by wild chimpanzees: Temporal patterning, phrase integration into loud calls, and preliminary evidence for individual distinctiveness. *Primates*, **39**, 505-518.
- Arcadi, A. C. (2000). Vocal responsiveness in male wild chimpanzees: implications for the evolution of language. *J. Human Evol.*, **39**, 205-223.
- Arcadi, A. C. (1996). Phrase structure of wild chimpanzee pant hoots: Patterns of production and interpopulation variability. *Am. J. Primatol.*, **39**, 159-178.
- Bauers, K. A. (1993). A functional analysis of staccato grunt vocalizations in the stump-tailed macaque *Macaca arctoides*. *Ethology*, **94**, 147-161.

- Bauers, K. A. & de Waal, F. B. M. (1991). "Coo" vocalizations in stumptailed macaques: a controlled functional analysis. *Behaviour*, **118**, 143-160.
- Becker, M., Wheatley, K., Buder, E., Price, M. & Ward, J. (2001). Spectrographic evidence of bushbaby pillow talk. *Am. J. Primatol.*, **54**, Suppl. 1, 42.
- Benz, J. J. (1993). Food-elicited vocalization in golden lion tamarins: design features for representational communication. *Anim. Behav.*, **45**, 443-455.
- Bercovitch, F. B., Hauser, M. D. & Jones, J. H. (1995). The endocrine stress response and alarm vocalization in rhesus macaques. *Anim. Behav.*, **49**, 1703-1706.
- Bermejo, M. & Omedes, A. (1999). Preliminary vocal repertoire and vocal communication of wild bonobos (*Pan paniscus*) at Lilungu (Democratic Republic of Congo). *Folia Primatol.*, **70**, 328-357.
- Berntson, G. G., Boysen, S. T. & Torello, M. W. (1993). Vocal perception, brain event related potentials in a chimpanzee. *Dev. Psychobiol.*, **26**, 305-319.
- Biben, M. & Bernhard, D. (1995). Vocal ontogeny of the squirrel monkey, *Saimiri boliviensis peruviansis*. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman and U. Juergens, eds.). Plenum Press; New York, pp. 99-120.
- Biben, M. (1993). Recognition of order effects in squirrel monkey antiphonal call sequences. *Am. J. Primatol.*, **29**, 109-124.
- Bieser, A. & Mueller-Preuss, P. (1989). Temporal processing through auditory neurons: periodicity decoding and spike rate. *Eur. J. Neurosci.*, **Suppl. 2**, 260.
- Bieser, A. & Mueller-Preuss, P. (1992). Organization of the auditory cortex in the squirrel monkey. In *Rhythmogenesis in Neurons and Networks* (N. Elsner & D. W. Richter, eds.). Thieme; Stuttgart.
- Bieser, A. & Mueller-Preuss, P. (1996). Auditory responsive cortex in the squirrel monkey: neural responses to amplitude-modulated sounds. *Exp. Brain Res.*, **108**, 273-284.
- Bieser, A. & Mueller-Preuss, P. (1991). Physiological and cytoarchitectonic characterization of auditory responsive cortical areas in the awake squirrel monkey. *Eur. J. Neurosci.*, **Suppl. 4**, 42.
- Bieser, A. (1998). Processing of twitter-call fundamental frequencies in insula and auditory cortex of squirrel monkeys. *Exp. Brain Res.*, **122**, 139-148.
- Blumstein, D. T. (1995). Golden-marmot alarm calls. II. Asymmetrical production and perception of situationally specific vocalizations? *Ethology*, **101**, 25-32.
- Boinski, S. & Campbell, A. F. (1996). The huh vocalization of white-faced capuchins: a spacing call disguised as a food call? *Ethology*, **102**, 826-840.
- Boinski, S., Gross, T. S. & Davis, J. K. (1999). Terrestrial predator alarm vocalizations are a valid monitor of stress in captive brown capuchins (*Cebus apella*). *Zoo Biology*, **18**, 295-312.
- Boinski, S. (1993). Vocal coordination of troop movement among white-faced capuchin monkeys *Cebus capucinus*. *Am. J. Primatol.*, **30**, 85-100.
- Boinski, S. & Mitchell, C. L. (1995). Wild squirrel monkey (*Saimiri sciureus*) 'caregiver' calls: contexts and acoustic structure. *Am. J. Primatol.*, **35**, 129-137.
- Boinski, S. & Campbell, A. F. (1995). Use of trill vocalizations to coordinate troop movement among white-faced capuchins: a second field test. *Behaviour*, **132**, 875-901.
- Boinski, S. & Mitchell, C. L. (1997). Chuck vocalizations of wild female squirrel monkeys (*Saimiri sciureus*) contain information on caller identity and foraging activity. *Int. J. Primatol.*, **18**, 975-994.
- Boinski, S., Moraes, E., Kleiman, D. G., Dietz, J. M. & Baker, A. J. (1994). Intra-group vocal behaviour in wild golden lion tamarins, *Leontopithecus rosalia*: Honest communication of individual activity. *Behaviour*, **130**, 53-75.
- Brockelman, W. Y. & Srikosamatara, S. (1993). Estimation of density of gibbon groups by use of loud songs. *Am. J. Primatol.*, **29**, 93-108.
- Brosch, M., Schulz, A. & Scheich, H. (1999). Processing of sound sequences in macaque auditory cortex: response enhancement. *J. Neurophysiol.*, **82**, 1542-1559.
- Brown, C. H. & Cannito, M. P. (1995). Modes of vocal variation in Syke's monkey (*Cercopithecus albogularis*) squeals. *J. Comp. Psychol.*, **109**, 398-415.
- Brown, M. M., Kreiter, N. A., Maple, J. T. & Sinnott, J. M. (1992). Silhouettes elicit alarm calls from captive vervet monkeys *Cercopithecus aethiops*. *J. Comp. Psychol.*, **106**, 350-359.
- Brown, C. H., Sinnott, J. M. & Kressley, R. A. (1994). Perception of chirps by Syke's monkeys (*Cercopithecus albogularis*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **108**, 243-251.
- Brown, C. H. & Gomez, R. (1992). Functional design features in primate vocal signals: the acoustic habitat and sound distortion. In *Topics in Primatology. Vol. 1: Human origins* (T. Nishida, W. C. McGrew, P. Marler, M. Pickford & F. M. B. de Waal, eds.). University of Tokyo Press; Tokyo, pp. 177-198.
- Brown, C. H., Gomez, R. & Waser, P. M. (1995). Old World monkey vocalizations: adaptations to the local habitat? *Anim. Behav.*, **50**, 945-961.
- Burling, R. (1993). Primate calls, human language, and nonverbal communication. *Curr. Anthropol.*, **34**, 25-53.

- Caine, N. C., Addinton, R. L. & Windfelder, T. L. (1995). Factors affecting the rates of food calls given by red-bellied tamarins. *Anim. Behav.*, **50**, 53-60.
- Cantalupo, C. & Hopkins, W. D. (2001). Asymmetric Broca's area in great apes: A region of the ape brain is uncannily similar to one linked with speech in humans. *Nature*, **414**, 505.
- Castro, N. A. & Snowdon, C. T. (2000). Development of vocal responses in infant cotton-top tamarins. *Behaviour*, **137**, 629-646.
- Caywood, M. S., Blake, D. T., Houde, J. & Merzenich, M. M. (2001). Vocalization suppresses neurons in primary auditory cortex of monkey. *Soc. Neurosci. Abstr.*, **27**, 1345.
- Cheney, D. L., Seyfarth, R. M. & Silk, J. B. (1995). The role of grunts in reconciling opponents and facilitating interactions among adult female baboons. *Anim. Behav.*, **50**, 249-257.
- Cheney, D. L., Seyfarth, R. M. & Palombit, R. (1996). The function and mechanisms underlying baboon "contact" barks. *Anim. Behav.*, **52**, 507-518.
- Cheney, D. L. & Seyfarth, R. M. (1997). Reconciliatory grunts by dominant female baboons influence victims' behaviour. *Anim. Behav.*, **54**, 409-418.
- Cheney, D. L. & Seyfarth, R. M. (1996). Function and intention in the calls of nonhuman primates. *Proc. Br. Acad.*, **88**, 59-76.
- Cheney, D. L. & Seyfarth, R. M. (1999). Mechanisms underlying the vocalizations of nonhuman primates. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 629-644.
- Cheung, S. W., Wong, A. & Blake, D. T. (2002). Spectral and temporal learning properties and their functional modality in marmoset vocal plasticity. *J. Invest. Med.*, **50**, 84A.
- Cheung, S. W., Bedenbaugh, P. H., Nagarajan, S. S. & Schreiner, C. E. (2001). Functional organization of squirrel monkey primary auditory cortex: Responses to pure tones. *J. Neurophysiol.*, **85**, 1732-1749.
- Clark, A. P. & Wrangham, R. W. (1994). Chimpanzee arrival pant hoots: Do they signify food or status? *Int. J. Primatol.*, **15**, 185-205.
- Clark, A. P. & Wrangham, R. W. (1993). Acoustic analysis of wild chimpanzee pant hoots: do Kibale Forest chimpanzees have an acoustically distinct food arrival pant hoot. *Am. J. Primatol.*, **31**, 99-109.
- Clark, A. P. (1993). Rank differences in the production of vocalizations by wild chimpanzees as a function of social context. *Am. J. Primatol.*, **31**, 159-179.
- Comuzzie, D. K. C. (1993). Baboon vocalizations as measures of psychological well-being. *Lab. Prim. Newslett.*, **32**, 5-6.
- Connor, K. N. O., Barruel, P., Hajalilou, R. & Sutter, M. (1999). Auditory temporal integration in the rhesus macaque (*Macaca mulatta*). *J. Acoust. Soc. Am.*, **106**, 954-965.
- Cornick, L. A. & Markowitz, H. (2002). Diurnal vocal patterns of the black howler monkey (*Alouatta pigra*) at Lamanai, Belize. *J. Mamm.*, **83**, 159-166.
- Cowlshaw, G. (1997). Alarm calling and implications for risk perception in a desert baboon population. *Ethology*, **103**, 384-394.
- Cowlshaw, G. & O'Connell, S. M. (1996). Male-male competition, paternity certainty and copulation calls in female baboons. *Anim. Behav.*, **51**, 235-238.
- Cowlshaw, G. (1996). Sexual selection and information content in gibbon song bouts. *Ethology*, **102**, 272-284.
- Dallmann, R. & Geissmann, T. (2000). Individuality in the female songs of wild silvery gibbons (*Hylobates moloch*) of Java, Indonesia. *Folia Primatol.*, **71**, 220.
- Dallmann, R. & Geissmann, T. (2001). Different levels of variability in the female song of wild silvery gibbons (*Hylobates moloch*). *Behaviour*, **138**, 629-648.
- Dallmann, R. & Geissmann, T. (2001). Individuality in the female songs of wild silvery gibbons (*Hylobates moloch*) on Java, Indonesia. *Contrib. Zool.*, **70**, 41-50.
- Deacon, T. W. (1992). The neural circuitry underlying primate calls and human language. In *Language Origin: A Multidisciplinary Approach* (J. Wind, B. Chiarelli, B. Bichakjian, A. Nocentini & A. Jonker, eds.). Kluwer; Dordrecht, pp. 121-162.
- deCharms, R. C., Blake, D. T. & Merzenich, M. M. (1998). Optimizing sound features for cortical neurons. *Science*, **280**, 1439-1443.
- Drubbel, R. V. & Gautier, J. P. (1993). On the occurrence of nocturnal and diurnal loud calls, differing in structure and duration, in red howlers (*Alouatta seniculus*) of French Guyana. *Folia Primatol.*, **60**, 195-209.
- Duesterhoeft, F., Haeusler, U. & Juergens, U. (2000). On the search for the vocal pattern generator. A single-unit recording study. *NeuroReport*, **11**, 2031-2034.
- Eliades, S. J. & Wang, X. (2000). Suppression of neural activities prior to and during vocalization suggests sensory-motor interactions in the primate auditory cortex. *Soc. Neurosci. Abstr.*, **26**.
- Elowson, A. M., Snowdon, C. T. & Lazaro-Perea, C. (1998). Infant "babbling" in a nonhuman primate: Complex vocal sequences with repeated call types. *Behaviour*, **135**, 643-664.

- Elowson, A. M. & Snowdon, C. T. (1994). Pygmy marmosets, *Cebuella pygmaea*, modify vocal structure in response to changed social environment. *Anim. Behav.*, **47**, 1267-1277.
- Elowson, A. M., Snowdon, C. T. & Lazaro-Perea, C. (1998). "Babbling" and social context in infant monkeys: Parallels to human infants. *Trends Cogn. Sci.*, **2**, 31-37.
- Erickson, C. J., Nowicki, S., Dollar, L. & Goehring, N. (1998). Percussive foraging: Stimuli for prey location aye-ayes (*Daubentonia madagascariensis*). *Int. J. Primatol.*, **19**, 111-122.
- Erickson, C. A., Chawla, M. K., Poremba, A., Worley, P. F., Guzowski, J. F. & Barnes, C. A. (2001). The effects of auditory experience on neural activity revealed by expression of the immediate-early gene Arc. *Soc. Neurosci. Abstr.*, **27**, 834.
- Fastl, H., Widmann, U. & Mueller-Preuss, P. (1991). Correlations between hearing and vocal activity in man and the squirrel monkey. *Acustica*, **73**, 35-36.
- Fastl, H., Hesse, A., Schorer, E., Urbas, J. & Mueller-Preuss, P. (1986). Searching for neural correlates of the hearing sensation fluctuation strength in the auditory cortex of squirrel monkeys. *Hear. Res.*, **23**, 199-203.
- Fernandez, C., Lysakowsky, A. & Goldberg, J. M. (1995). Hair-cell counts and afferent innervation patterns in the cristae ampullares of the squirrel monkey with a comparison to the chinchilla. *J. Neurophysiol.*, **73**, 1253-1269.
- Fichtel, C. & Kappeler, P. M. (2002). Anti-predator behavior of group-living Malagasy primates: Mixed evidence for a referential alarm call system. *Behav. Ecol. Sociobiol.*, **51**, 262-275.
- Fichtel, C. & Hammerschmidt, K. (2001). Information content of redfronted lemur (*Eulemur fulvus*) alarm calls. *Adv. Ethol.*, **36**, 16-17.
- Fichtel, C., Hammerschmidt, K. & Juergens, U. (2000). Aversion correlated changes in the vocalisation of squirrel monkeys (*Saimiri sciureus*). *Folia Primatol.*, **71**, 192.
- Fichtel, C., Hammerschmidt, K. & Juergens, U. (2001). On the vocal expression of emotion. A multi-parametric analysis of different states of aversion in the squirrel monkey. *Behaviour*, **138**, 97-116.
- Fischer, J., Hammerschmidt, K., Cheney, D. L. & Seyfarth, R. M. (2002). Acoustic features of male baboon loud calls: influences of context, age, and individuality. *J. Acoust. Soc. Am.*, **111**, 1465-1474.
- Fischer, J., Hammerschmidt, K., Cheney, D. L. & Seyfarth, R. M. (2001). Acoustic features of female chacma baboon barks. *Ethology*, **107**, 33-54.
- Fischer, J., Cheney, D. L. & Seyfarth, R. M. (2000). Development of infant baboons' responses to graded bark variants. *Proc. Roy. Soc. Lond. B.*, **267**, 2317-2321.
- Fischer, J. & Hammerschmidt, K. (2002). An overview of the barbary macaque, *Macaca sylvanus*, vocal repertoire. *Folia Primatol.*, **73**, 32-45.
- Fischer, J. & Hammerschmidt, K. (2001). Functional referents and acoustic similarity revisited: the case of barbary macaque alarm calls. *Anim. Cogn.*, **4**, 29-35.
- Fischer, J. (1996). Perception of sound categories bei barbary macaques (*Macaca sylvanus*). Ph.D. thesis. Freie Universität Berlin.
- Fischer, J. (1997). Geographic variation in alarm calls of barbary macaques. *Adv. Ethol.*, **32**, 115.
- Fischer, J., Metz, M., Cheney, D. L. & Seyfarth, R. M. (2001). Baboon responses to graded bark variants. *Anim. Behav.*, **61**, 925-931.
- Fischer, J. (1998). Barbary macaques categorize shrill barks into two call types. *Anim. Behav.*, **55**, 799-807.
- Fischer, J., Hammerschmidt, K. & Todt, D. (1995). Factors affecting acoustic variation in barbary-macaque (*Macaca sylvanus*) disturbance calls. *Ethology*, **101**, 51-66.
- Fischer, J., Hammerschmidt, K. & Todt, D. (1998). Local variation in Barbary macaque shrill barks. *Anim. Behav.*, **56**, 623-629.
- Fishman, Y. I., Reser, D. H., Arezzo, J. C. & Steinschneider, M. (2000). Complex tone processing in primary auditory cortex of the awake monkey. II. Pitch versus critical band representation. *J. Acoust. Soc. Am.*, **108**, 247-262.
- Fishman, Y. I., Reser, D. H., Arezzo, J. C. & Steinschneider, M. (2000). Complex tone processing in primary auditory cortex of the awake monkey. I. Neural ensemble correlates of roughness. *J. Acoust. Soc. Am.*, **108**, 235-246.
- Fitch, W. T. (2000). The phonetic potential of nonhuman vocal tracts: comparative cineradiographic observations of vocalizing animals. *Phonetica*, **57**, 205-218.
- Fitch, W. T. (1997). Vocal tract length and formant frequency dispersion correlate with body size in rhesus macaques. *J. Acoust. Soc. Am.*, **101**, 3136.
- Fitch, W. T. & Hauser, M. D. (1995). Vocal production in nonhuman primates: Acoustic, physiology, and functional constraints on honest advertisement. *Am. J. Primatol.*, **37**, 191-219.
- Fitch, W. T. (1997). Vocal tract length and formant frequency dispersion correlate with body size in rhesus macaques. *J. Acoust. Soc. Am.*, **102**, 1213-1222.
- Freudenstein, T., Hammerschmidt, K. & Juergens, U. (2000). Developmental changes in squirrel monkey

- vocalisations (*Saimiri sciureus*). *Folia Primatol.*, **71**, 224.
- Friedman, E. M., Boinski, S. & Coe, C. L. (1995). Interleukin-1 induces sleep-like behavior and alters call structure in juvenile rhesus monkeys. *Am. J. Primatol.*, **35**, 143-153.
- Gamba, M. & Giacoma, C. (2001). Evidence of relatedness among *Eulemur* species from acoustic comparisons. *Folia Primatol.*, **72**, 150-151.
- Gamba, M. & Giacoma, C. (2001). A methodological approach to the classification of vocalisations in red-bellied lemurs (*Eulemur rubriventer*). *Folia Primatol.*, **72**, 136.
- Gamba, M. & Giacoma, C. (2001). Comparison of the vocal repertoire of *Eulemur macaco* subspecies. *Folia Primatol.*, **72**, 135.
- Gamba, M. & Giacoma, C. (2001). Vocal communication in Lemuridae: New evidence in *Eulemur* and *Varecia*. *Adv. Ethol.*, **36**, 160.
- Gamba, M., Trincherio, C. & Giacoma, C. (2000). Development of vocalisations in *Varecia variegata variegata*. *Folia Primatol.*, **71**, 297.
- Gautier, J.-P. (1998). Acoustic communication in primates. *Bull. Soc. Zool. France*, **123**, 239-254 (French).
- Geiss, S. & Schrader, L. (1996). Temporal and structural features in infant calls in relation to caregiving behaviour in common marmosets, *Callithrix j. jacchus*. *Behav. Processes*, **38**, 183-191.
- Geissmann, T. & Orgeldinger, M. (1997). Pair bond and duet songs in siamangs (*Hylobates syndactylus*). *Adv. Ethol.*, **32**, 123.
- Geissmann, T. (2000). Gibbon songs and human music in an evolutionary perspective. In *The Origins of Music* (N. L. Wallin, B. Merker and S. Brown, eds.). MIT Press; Cambridge, Massachusetts.
- Geissmann, T. (1986). Mate change enhances duetting activity in the siamang gibbon (*Hylobates syndactylus*). *Behaviour*, **96**, 17-27.
- Geissmann, T. (2002). Duet-splitting and the evolution of gibbon songs. *Biol. Rev. Camb. Philos. Soc.*, **77**, 57-76.
- Geissmann, T. & Nijman, V. (2000). Do male silvery gibbons have anything to say? *Folia Primatol.*, **71**, 225.
- Geissmann, T. (2000). Duet songs of the siamang, *Hylobates syndactylus*: I. Structure and organisation. *Primate Report*, **56**, 33-60.
- Geissmann, T. (1987). Songs of hybrid gibbons (*Hylobates pileatus x H. lar*). *Int. J. Primatol.*, **8**, 540.
- Geissmann, T. (1995). The yellow-cheeked gibbon (*Hylobates gabriellae*) in Nam Bai Cat Tien (Southern Vietnam) revisited. *Primates*, **36**, 447-455.
- Geissmann, T. (1999). Duet songs of the siamang, *Hylobates syndactylus*: II. Testing the pair-bonding hypothesis during a partner exchange. *Behaviour*, **136**, 1005-1039.
- Geissmann, T. (1993). *Evolution of communication in gibbons (Hylobatidae)*. Ph.D. thesis. Anthropological institute, Philosoph. Faculty II. Zürich University.
- Geissmann, T. (2000). Duet-splitting in the evolution of gibbon songs. *Folia Primatol.*, **71**, 194.
- Geissmann, T. & Orgeldinger, M. (2000). The relationship between duet songs and pair bonds in siamangs, *Hylobates syndactylus*. *Anim. Behav.*, **60**, 805-809.
- Gemba, H., Kyuhou, S., Matsuzaki, R. & Amino, Y. (1999). Cortical field potentials associated with audio-initiated vocalization in monkeys. *Neurosci. Lett.*, **272**, 45-48.
- Ghazanfar, A. A. & Hauser, M. D. (2000). Temporal cues, orienting asymmetries and brain lateralization in the perception of species-specific vocalizations by rhesus macaques: field studies. *Soc. Neurosci. Abstr.*, **26**.
- Ghazanfar, A. A., Smith-Rohrberg, D. & Hauser, M. D. (2001). The role of temporal cues in rhesus monkey vocal recognition: orienting asymmetries to reversed calls. *Brain Behav. Evol.*, **58**, 163-172.
- Ghazanfar, A. A., Flombaum, J. I., Miller, C. T. & Hauser, M. D. (2001). The units of perception in the antiphonal calling behavior of cotton-top tamarin monkeys (*Saguinus oedipus*): playback experiments with long calls. *J. Comp. Physiol. A.*, **187**, 27-35.
- Ghazanfar, A. A. & Hauser, M. D. (2001). The auditory behaviour of primates: a neuroethological perspective. *Curr. Opin. Neurobiol.*, **11**, 712-720.
- Ghazanfar, A. A. & Hauser, M. D. (1999). The neuroethology of primate vocal communication: substrates for the evolution of speech. *Trends Cogn. Sci.*, **3**, 377-384.
- Glenn, M. (2002). Loud calls in adult male mona monkeys on the island of Grenada, West Indies. *Am. J. Phys. Anthropol.*, Suppl., **34**, 76.
- Goedeking, P. & Immelmann, K. (1986). Vocal cues in cotton-top tamarin play vocalizations. *Ethology*, **73**, 219-224.
- Gouzoules, H., Gouzoules, S. & Miller, K. (1996). Skeptical responding in rhesus monkeys (*Macaca mulatta*). *Int. J. Primatol.*, **17**, 549-568.
- Gouzoules, H., Gouzoules, S. & Marler, P. (1986). Vocal communication: a vehicle for the study of social relationships. In *The Cayo Santiago macaques* (R. G. Rawlins & M. J. Kessler, eds.). State University of New York press; Albany, N. Y., pp. 111-129.

- Gouzoules, H. & Gouzoules, S. (1995). Recruitment screams of pigtail monkeys (*Macaca nemestrina*): ontogenetic perspectives. *Behaviour*, **132**, 431-450.
- Gouzoules, H. & Gouzoules, S. (1990). Body size effects on the acoustic structure of pigtail macaque (*Macaca nemestrina*) screams. *Ethology*, **85**, 324-334.
- Gouzoules, H., Gouzoules, S. & Ashley, J. (1995). Representational signaling in nonhuman primate vocal communication. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum; New York, pp. 235-252.
- Gouzoules, H., Gouzoules, S. & Tomaszycki, M. (1998). Agonistic screams and the classification of dominance relationships: are monkeys fuzzy logicians? *Anim. Behav.*, **55**, 51-60.
- Gouzoules, H. & Gouzoules, S. (2000). Agonistic screams differ among four species of macaques: the significance of motivation-structural rules. *Anim. Behav.*, **59**, 501-512.
- Grohrock, P., Haeusler, U. & Juergens, U. (1997). Dual-channel telemetry system for recording vocalization-correlated neuronal activity in freely moving squirrel monkeys. *J. Neurosci. Methods*, **76**, 7-13.
- Grunewald, A., Linden, J. F. & Andersen, R. A. (1999). Responses to auditory stimuli in macaque lateral intraparietal area. I. Effects of training. *J. Neurophysiol.*, **82**, 330-342.
- Gust, D. A., St Andre, E., Minter, C., Gordon, T. & Gouzoules, H. (1990). Female copulatory vocalisations in a captive group of sooty mangabeys (*Cercocebus torquatus atys*). *Am. J. Primatol.*, **20**, 196.
- Hackett, T. A., Stepniewska, I. & Kaas, J. H. (1999). Prefrontal connections of the parabelt auditory cortex in macaque monkeys. *Brain Res.*, **817**, 45-58.
- Haeusler, U. (2000). Vocalization-correlated respiratory movements in the squirrel monkey. *J. Acoust. Soc. Am.*, **108**, 1443-1450.
- Haeusler, U. (1996). Respiratory movements during vocalization in the squirrel monkey. *Exp. Biol. Online*, **1**, 9.
- Hafen, T., Neveu, H., Rumpler, Y., Wilden, I. & Zimmermann, E. (1998). Acoustically dimorphic advertisement calls separate morphologically and genetically homogenous populations of the grey mouse lemur. *Folia Primatol.*, **69**, 342-356.
- Halloy, M. & Kleiman, D. G. (1994). Acoustic structure of long calls in free-ranging groups of golden lion tamarins, *Leontopithecus rosalia*. *Am. J. Primatol.*, **32**, 303-310.
- Hammerschmidt, K. & Fischer, J. (1998). The vocal repertoire of barbary macaques: A quantitative analysis of a graded signal system. *Ethology*, **104**, 203-216.
- Hammerschmidt, K. & Fischer, J. (1998). Maternal discrimination of offspring vocalizations in barbary macaques (*Macaca sylvanus*). *Primates*, **39**, 231-236.
- Hammerschmidt, K., Newman, J. D., Champoux, M. & Suomi, S. J. (2000). Changes in rhesus macaque 'coo' vocalizations during early development. *Ethology*, **106**, 873-886.
- Hammerschmidt, K. & Juergens, U. (2000). Amplitude correlated changes in the vocalisation of squirrel monkeys (*Saimiri sciureus*). *Folia Primatol.*, **71**, 195-196.
- Hammerschmidt, K. & Fichtel, C. (2001). 'Call pitch' as an indicator of the intensity of affective states. *Adv. Ethol.*, **36**, 16.
- Hammerschmidt, K. (1990). *Individual sound patterns in barbary macaques (Macaca sylvanus): A contribution to the understanding of their vocal communication*. Ph.D. Dissertation, Freie Universität; Berlin. (German).
- Hammerschmidt, K. & Newman, J. (1996). A quantitative analysis of vocal development in captive Rhesus macaques. *Abstr. XVIth Congr. of the IPS, Madison*, p. 411.
- Hammerschmidt, K., Newman, J. D., Champoux M. & Suomi, S. J. (1997). An analysis of developmental changes in Rhesus macaque coo vocalisations. *Adv. Ethol.*, **32**, 100.
- Hammerschmidt, K. & Todt, D. (1995). Individual differences in vocalisations of young barbary macaques (*Macaca sylvanus*): a multi-parametric analysis to identify critical cues in acoustic signalling. *Behaviour*, **132**, 381-399.
- Hammerschmidt, K., Ansorge, V., Fischer, J. & Todt, D. (1994). Dusk calling in barbary macaques (*Macaca sylvanus*): Demand for social shelter. *Am. J. Primatol.*, **18**, 324-335.
- Hammerschmidt, K., Ansorge, V., Fischer, J. & Todt, D. (1994). Age-related variations in the vocal repertoire of barbary macaques. In *Current Primatology, Vol. 2* (J. J. Roeder, B. Thierry, J. R. Anderson & N. Herrenschmidt, eds.), pp. 287-296.
- Haraway, M. M. & Maples, E. G. (1998). Flexibility in the species-typical songs of gibbons. *Primates*, **39**, 1-12.
- Harcourt, A. H. & Stewart, K. J. (1996). Function and meaning of wild gorilla "close" calls. 2. Correlations with rank and relatedness. *Behaviour*, **133**, 827-845.
- Harcourt, A. H., Stewart, K. J. & Hauser, M. (1993). Functions of wild gorilla close calls. I. Repertoire context and interspecific comparison. *Behaviour*, **124**, 89-122.
- Harrington, I. A., Heffner, R. S. & Heffner, H. E. (2001). An investigation of sensory deficits underlying the aphasia-like behavior of macaques with auditory cortex lesions. *NeuroReport*, **12**, 1217-1221.
- Hashiwaka, T., Molinari, M., Rausell, E. & Jones, E. G. (1995). Patchy laminar terminations of medial

- geniculate axons in monkey auditory cortex. *J. Comp. Neurol.*, **362**, 195-208.
- Hauser, M. D. (1989). Ontogenetic changes in the comprehension and production of vervet monkey (*Cercopithecus aethiops*) vocalizations. *J. Comp. Psychol.*, **103**, 149-158.
- Hauser, M. D. & Wrangham, R. W. (1990). Recognition of predator and competitor calls in nonhuman primates and birds: a preliminary report. *Ethology*, **86**, 116-130.
- Hauser, M. D. (1999). The evolution of a lopsided brain: asymmetries underlying facial and vocal expressions in nonhuman primates. In *The Design of Animal Communication* (M. D. Hauser & M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 597-628.
- Hauser, M. D. & Akre, K. (2001). Asymmetries in the timing of facial and vocal expressions by rhesus monkeys: implications for hemispheric specialization. *Anim. Behav.*, **61**, 391-400.
- Hauser, M. D. & Schoen Ybarra, M. (1994). The role of lip configuration in monkey vocalizations: experiments using xylocaine as a nerve block. *Brain and Language*, **46**, 232-244.
- Hauser, M. D. (1996). Vocal communication in macaques: causes of variation. In *Evolution and Ecology of Macaque Societies* (J. E. Fa and D. G. Lindburg, eds.). Cambridge University Press; Cambridge, pp. 551-577.
- Hauser, M. D. (1998). Functional referents and acoustic similarity: field playback experiments with rhesus monkeys. *Anim. Behav.*, **55**, 1647-1658.
- Hauser, M. D. & Andersson, K. (1994). Left hemisphere dominance for processing vocalizations in adult, but not infant rhesus monkeys: field experiments. *Proc. Natl. Acad. Sci. USA*, **91**, 3946-3948.
- Hauser, M. D. & Fowler, C. (1991). Declination in fundamental frequency is not unique to human speech: Evidence from nonhuman primates. *J. Acoust. Soc. Am.*, **91**, 363-369.
- Hauser, M. D., Agnetta, B. & Perez, C. (1998). Orienting asymmetries in rhesus monkeys: the effect of time-domain changes on acoustic perception. *Anim. Behav.*, **56**, 41-47.
- Hauser, M. D., Teixidor, P., Fields, L. & Flaherty, R. (1993). Food elicited calls in chimpanzees: effects of food quantity and divisibility. *Anim. Behav.*, **45**, 817-819.
- Hauser, M. D., Evans, C. S. & Marler, P. (1993). The role of articulation in the production of rhesus monkey *Macaca mulatta* vocalizations. *Anim. Behav.*, **45**, 423-433.
- Hauser, M. D. (2000). A primate dictionary? Decoding the function and meaning of another species' vocalizations. *Cogn. Sci.*, **24**, 445-475.
- Hauser, M. D. (1993). The evolution of nonhuman primate vocalizations: effects of phylogeny, body weight, and social context. *Am. Natur.*, **142**, 528-542.
- Hauser, M. D. (1993). Do vervet monkey infants cry wolf? *Anim. Behav.*, **45**, 1242-1244.
- Hauser, M. D. & Marler, P. (1993). Food associated calls in rhesus macaques *Macaca mulatta*. II. Costs and benefits of call production and suppression. *Behav. Ecol.*, **4**, 206-212.
- Hauser, M. D. & Marler, P. (1993). Food associated calls in rhesus macaques *Macaca mulatta*. I. Socioecological factors. *Behav. Ecol.*, **4**, 194-205.
- Hauser, M. D. (1993). Rhesus monkey (*Macaca mulatta*) copulation calls: honest signals for female choice? *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **254**, 93-96.
- Henzi, S. P. (1996). Copulation calls and paternity in chacma baboons. *Anim. Behav.*, **51**, 233-234.
- Hook-Castigan, M. & Rogers, L. J. (1998). Lateralized use of the mouth in production of vocalizations by marmosets. *Neuropsychologia*, **36**, 1265-1273.
- Hostetter, A. B., Cantero, M. & Hopkins, W. D. (2001). Differential use of vocal and gestural communication by chimpanzees (*Pan troglodytes*) in response to the attentional status of a human (*Homo sapiens*). *J. Comp. Psychol.*, **115**, 337-343.
- Hultsch, H. (1992). Scientific documentation of acoustic signals in frequency spectrograms: how should sonograms be read? In *Lemurs in the zoo: current research results, species protection, prospects* (V. Ceska, H.-U. Hoffmann & K.-H. Winkelstraeter, eds). Verlag Paul Parey; Berlin, pp. 78-80 (German).
- Izumi, A. (2002). Auditory stream segregation in Japanese monkeys. *Cognition*, **82**, B113-B122.
- Jackson, L. L., Heffner, R. S. & Heffner, H. E. (1999). Free-field audiogram of the Japanese macaque (*Macaca fuscata*). *J. Acoust. Soc. Am.*, **106**, 3017-3023.
- Johns, A. J. (1986). Behavioural responses of two Malaysian primates (*Hylobates lar* and *Presbytis melalophos*) to selective logging: vocal behaviour, territoriality, and nonmigration. *Int. J. Primatol.*, **6**, 423-433.
- Jones, B. S., Harris, D. H. R. & Catchpole, C. K. (1993). The stability of the vocal signature in phee calls of the common marmoset *Callithrix jacchus*. *Am. J. Primatol.*, **31**, 67-75.
- Jones, E. G., Dell'Anna, M. E., Molinari, M., Rausell, E. & Hashikawa, T. (1995). Subdivisions of macaque monkey auditory cortex revealed by calcium-binding protein immunoreactivity. *J. Comp. Neurol.*, **362**, 153-165.
- Jorgensen, D. D. & French, J. A. (1998). Individuality but not stability in marmoset long calls. *Ethology*, **104**, 709-742.
- Jovanovic, T. & Gouzoules, H. (2001). Effects of nonmaternal restraint on the vocalizations of infant rhesus

- monkeys (*Macaca mulatta*). *Am. J. Primatol.*, **53**, 33-45.
- Jovanovic, T. & Gouzoules, H. (1997). Vocalisations of kidnapped rhesus infants elicit differential responses from their mothers. *Adv. Ethol.*, **32**, 124.
- Jovanovic, T., Megna, N. L. & Maestriperi, D. (2000). Early maternal recognition of offspring vocalizations in rhesus macaques (*Macaca mulatta*). *Primates*, **41**, 421-428.
- Jovanovic, T., Davis, J. E., Stoinski, T., Mayo, L. & Muller, C. (2001). Individual and contextual differences in orangutan (*Pongo pygmaeus*) vocalisation. *Adv. Ethol.*, **36**, 186-187.
- Juergens, U. (2001). Neurobiology of primate vocal communications. *Adv. Ethol.*, **36**, 17.
- Juergens, U. (1998). Neuronal control of mammalian vocalization, with special reference to the squirrel monkey. *Naturwissenschaften*, **85**, 376-388.
- Juergens, U. (2002). Neural pathways underlying vocal control. *Neurosci. Biobehav. Rev.*, **26**, 235-258.
- Juergens, U. (1995). Neuronal control of vocal production in nonhuman and human primates. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York.
- Juergens, U. & Lu, C. (1993). Interactions between glutamate, GABA, acetylcholine and histamine in the periaqueductal gray's control of vocalizations in the squirrel monkey. *Neurosci. Lett.*, **152**, 5-8.
- Juergens, U. & Zwirner, P. (2000). Individual hemispheric asymmetry in vocal fold control of the squirrel monkey. *Behav. Brain Res.*, **109**, 213-217.
- Juergens, U. & Lu, C.-L. (1993). The effects of periaqueductally injected transmitter antagonists on forebrain-elicited vocalization in the squirrel monkey. *Eur. J. Neurosci.*, **5**, 735-741.
- Juergens, U. (1992). On the neurobiology of vocal communication. In *Nonverbal Vocal Communication* (H. Papousek, U. Juergens & M. Papousek, eds.). Cambridge University Press; Cambridge, pp. 31-42.
- Juergens, U. (2000). Localization of a pontine vocalization controlling area. *J. Acoust. Soc. Am.*, **108**, 1393-1396.
- Kajikawa, S. & Hasegawa, T. (2000). Acoustic variation of pant hoot calls by male chimpanzees: a playback experiment. *J. Ethol.*, **18**, 133-139.
- Kamada, T. & Kameda, K. (1992). Neural responses in the auditory cortex of Japanese monkey to the combination of two pure tones. *Jpn. J. Physiol.*, **42** (Suppl.), 195.
- Karpany, S. M. & Grella, R. (2001). Lemur responses to diurnal raptor calls in Ranomafana National Park, Madagascar. *Folia Primatol.*, **72**, 100-103.
- Kipper, S. & Todt, D. (2002). The use of vocal signals in the social play of barbary macaques. *Primates; J. Primatol.*, **43**, 3-17.
- Kirzinger, A. & Juergens, U. (1991). Vocalization-correlated single-unit activity in the brainstem of squirrel monkeys. *Exp. Brain Res.*, **84**, 545-560.
- Kohler, E., Umiltà, M. A., Keysers, C., Gallese, V., Fogassi, L. & Rizzolatti, G. (2001). Auditory mirror neurons in the ventral premotor cortex of the monkey. *Soc. Neurosci. Abstr.*, **27**, 336.
- Kojima, S. (2001). Early vocal development in a chimpanzee infant. *Prim. Orig. Human Cogn. Behav.*, **2001**, 190-196.
- Krunkelsven, E. van, Dupain, J., van Elsacker, L. & Verheyen, R. F. (1996). Food calling by captive bonobos (*Pan paniscus*): An experiment. *Int. J. Primatol.*, **17**, 207-217.
- Kureta, Y. (1997). Vocal exchange of cotton-top tamarins in an isolated situation. *Adv. Ethol.*, **32**, 125.
- Kaas, J. H., Hackett, T. A. & Tramo, M. J. (1999). Auditory processing in primate cerebral cortex. [Erratum: p. 500]. *Curr. Opin. Neurobiol.*, **9**, 164-170.
- Lan, D.-Y. (1993). Feeding and vocal behaviours of black gibbons *Hylobates concolor* in Yunnan: a preliminary study. *Folia Primatol.*, **60**, 94-105.
- Lasky, R. E., Snodgrass, E. B., Laughlin, N. K. & Hecox, K. E. (1995). Distortion product otoacoustic emissions in *Macaca mulatta* and humans. *Hear. Res.*, **89**, 35-51.
- Lasky, R. E., Maier, M. M., Snodgrass, E. B., Laughlin, N. K. & Hecox, K. E. (1995). Auditory evoked brainstem and middle latency responses in *Macaca mulatta* and humans. *Hear. Res.*, **89**, 212-225.
- Laughlin, N. K., Hartup, B. K., Lasky, R. E., Meier, M. M. & Hecox, K. E. (1999). The development of auditory event related potentials in the rhesus monkey (*Macaca mulatta*). *Dev. Psychobiol.*, **34**, 37-56.
- Laughlin, N. K., Hartup, B. K., Lasky, R. E., Meier, M. M. & Hecox, K. E. (1999). The development of auditory event related potentials in the rhesus monkey (*Macaca mulatta*). *Dev. Psychobiol.*, **34**, 37-56.
- Le Prell, C. G., Hauser, M. D. & Moody, D. B. (2002). Discrete and graded variation within rhesus monkey screams? Psychophysical experiments on classification. *Anim. Behav.*, **63**, 47-62.
- Le Prell, C. G. & Moody, D. B. (2000). Factors influencing the salience of temporal cues in the discrimination of synthetic Japanese monkey (*Macaca fuscata*) coo calls. *J. Exp. Psychol. Anim. Behav. Process.*, **26**, 261-273.
- Le Prell, C. G. & Moody, D. B. (1997). Perceptual salience of acoustic features of Japanese monkey coo calls. *J. Comp. Psychol.*, **111**, 261-274.

- Leinonen, L., Linnankoski, I. & Laakso, M.-L. (2000). Shared features in emotional vocalization of *Macaca arctoides* and man. *Acta Physiol. Scand.*, **170**, A112-A113.
- Liang, L., Lu, T. & Wang, X. (1999). Temporal encoding of amplitude modulated sounds with noise carrier in the lateral belt areas of the auditory cortex in awake marmoset monkeys. *Soc. Neurosci. Abstr.*, **25**, 396.
- Linden, J. F., Grunewald, A. & Andersen, R. A. (1999). Responses to auditory stimuli in macaque lateral intraparietal area. II. Behavioral modulation. *J. Neurophysiol.*, **82**, 343-358.
- Locke, J. L. & Snow, C. (1997). Social influences on vocal learning in human and nonhuman primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 274-292.
- Locke, J. L. & Hauser, M. D. (1999). Sex and status effects on primate volubility: Clues to the origin of vocal languages? *Evol. Human Behav.*, **20**, 151-158.
- Lu, C. L. & Juergens, U. (1993). Effects of chemical stimulation in the periaqueductal gray on vocalization in the squirrel monkey. *Brain Res. Bull.*, **32**, 143-151.
- Luethe, L., Haeusler, U. & Juergens, U. (2000). Neuronal activity in the medulla oblongata during vocalization. A single-unit recording study in the squirrel monkey. *Behav. Brain Res.*, **116**, 197-210.
- Macedonia, J. M. (1994). The vocal repertoire of the ringtailed lemur (*Lemur catta*). *Folia Primatol.*, **61**, 186-217.
- Macedonia, J. M. (1990). What is communicated in the antipredator calls of lemurs: Evidence from antipredator call playbacks to ring-tailed and ruffed lemurs. *Ethology*, **86**, 177-190.
- Macedonia, J. M. (1993). The vocal repertoire of the ringtailed lemur (*Lemur catta*). *Folia Primatol.*, **61**, 186-217.
- Macedonia, J. M. & Evans, C. S. (1993). Variation among mammalian alarm call systems and the problem of meaning in animal signals. *Ethology*, **93**, 177-197.
- Macedonia, J. M. & Stanger, K. F. (1994). Phylogeny of the Lemuridae revisited: evidence from communication signals. *Folia Primatol.*, **63**, 1-43.
- Maeda, T. & Masataka, N. (1987). Locale-specific vocal behaviour of the tamarin (*Saguinus l. labiatus*). *Ethology*, **75**, 25-30.
- Manser, M. B., Seyfarth, R. M. & Cheney, D. L. (2002). Suricate alarm calls signal predator class and urgency. *Trends Cogn. Sci.*, **6**, 55-57.
- Manser, M. B., Bell, M. B. & Fletcher, L. B. (2001). The information that receivers extract from alarm calls in suricates. *Proc. Roy. Soc. Lond. B.*, **268**, 2485-2491.
- Marshall, A. J., Wrangham, R. W. & Arcadi, A. C. (1999). Does learning affect the structure of vocalizations in chimpanzees? *Anim. Behav.*, **58**, 825-830.
- Martin-Malivel, J. & Fagot, J. (2001). Cross-modal integration and conceptual categorization in baboons. *Behav. Brain Res.*, **122**, 209-213.
- Masataka, N. & Thierry, B. (1993). Vocal communication of Tonkean macaques in confined environments. *Primates*, **34**, 169-180.
- Masataka, N. (1987). The perception of sex-specificity in long calls of the tamarin (*Saguinus labiatus labiatus*). *Ethology*, **76**, 56-64.
- Masataka, N. (1989). Motivational referents of contact calls in Japanese macaques. *Ethology*, **80**, 265-273.
- Mascagni, O. & Doyle, G. A. (1993). Infant distress vocalizations in the Southern African lesser bushbaby *Galago moholi*. *Int. J. Primatol.*, **14**, 41-60.
- McCowan, B. & Reiss, D. (1997). Vocal learning in captive bottlenose dolphins: A comparison with humans and nonhuman animals. In *Social Influence on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 178-207.
- McCowan, B., Franceschini, N. V. & Vicino, G. A. (2001). Age differences and developmental trends in alarm peep responses by squirrel monkeys (*Saimiri sciureus*). *Am. J. Primatol.*, **53**, 19-31.
- Mendez-Cardenas, M. G. (2000). Vocal variation in howler monkey (genus *Alouatta*) on allopatric and sympatric populations and its use for phylogenetic analysis. *Am. J. Primatol.*, **51**, Suppl. 1, 72-73.
- Merker, B. & Cox, C. (1999). Development of the female great call in *Hylobates gabriellae*: A case study. *Folia Primatol.*, **70**, 97-106.
- Miller, C. T., Dibble, E. & Hauser, M. D. (2001). Amodal completion of acoustic signals by a nonhuman primate. *Nature Neurosci.*, **4**, 783-784.
- Mitani, J. C. (1996). Comparative studies of African ape vocal behaviour. In *Great Ape Societies* (W. C. McGrew, L. F. Marchant and T. Nishida, eds.). Cambridge University Press; Cambridge, pp. 241-254.
- Mitani, J. C., Hunley, K. L. & Murdoch, M. E. (1999). Geographic variation in the calls of wild chimpanzees: A reassessment. *Am. J. Primatol.*, **47**, 133-152.
- Mitani, J. C., Gros-Louis, J. & Macedonia, J. M. (1996). Selection for acoustic individuality within the vocal repertoire of wild chimpanzees. *Int. J. Primatol.*, **17**, 569-583.

- Mitani, J. C. & Stuht, J. (1998). The evolution of nonhuman primate loud calls: Acoustic adaptation for long-distance transmission. *Primates*, **39**, 171-182.
- Mitani, J. C. & Nishida, T. (1993). Contexts and social correlates of long-distance calling by male chimpanzees. *Anim. Behav.*, **45**, 735-746.
- Mitani, J. C. & Gros-Louis, J. (1998). Chorusing and call convergence in chimpanzees: Tests of three hypotheses. *Behaviour*, **135**, 1041-1064.
- Mitani, J. C. & Brandt, K. L. (1994). Social factors influence the acoustic variability in the long-distance calls of male chimpanzees. *Ethology*, **96**, 233-252.
- Mitani, J. C. (1988). Male gibbon (*Hylobates agilis*) singing behaviour: natural history, song variations and function. *Ethology*, **79**, 177-194.
- Molinari, M., Dell'Anna, M. E., Rausell, E., Leggio, M. G., Hashikawa, T. & Jones, E. G. (1995). Auditory thalamocortical pathways defined in monkeys by calcium-binding protein immunoreactivity. *J. Comp. Neurol.*, **362**, 171-194.
- Moody, D. B., Stebbins, W. C. & May, B. J. (1990). Auditory perception of communication signals by Japanese monkeys. In *Comparative perception: Complex Signals. Vol. II* (W. C. Stebbins & M. A. Berkley, eds.). Wiley & Sons; New York, pp. 311-343.
- Moody, D. B., Le Prell, C. G. & Niemiec, A. J. (1998). Monaural phase discrimination by macaque monkeys: Use of multiple cues. *J. Acoust. Soc. Am.*, **103**, 2618-2623.
- Morel, A., Garraghty, P. E. & Kaas, J. H. (1993). Tonotopic organization, architectonic fields, and connections of auditory cortex in macaque monkeys. *J. Comp. Neurol.*, **335**, 437-459.
- Morel, A. & Kaas, H. (1992). Subdivisions and connections of auditory cortex in owl monkeys. *J. Comp. Neurol.*, **318**, 27-63.
- Mueller-Preuss, P., Bieser, A., Preuss, A. & Fastl, H. (1988). Neural processing of AM-sounds within central parts of the auditory pathway. In *Auditory Pathway: Structure and Function* (J. Syka & B. Masterton, eds.). Plenum; New York, pp. 327-331.
- Mueller-Preuss, P., Flachskamm, C. & Bieser, A. (1994). Neural encoding of amplitude modulation within the auditory midbrain of squirrel monkeys. *Hear. Res.*, **80**, 197-208.
- Muroyama, Y. & Thierry, B. (1998). Species differences of male loud calls and their perception in Sulawesi macaques. *Primates*, **39**, 115-126.
- Muroyama, Y. & Thierry, B. (1997). Species differences of male loud calls and their perception in Sulawesi macaques. *Adv. Ethol.*, **32**, 118.
- Nagarajan, S., Cheung, S. W., Bedenbaugh, P., Beitel, R. E., Schreiner, C. E. & Merzenich, M. M. (2002). Representation of spectral and temporal envelope of twitter vocalizations in common marmoset primary auditory cortex. *J. Neurophysiol.*, **87**, 1723-1737.
- Nakagawa, N. (1998). Indiscriminate response to infant calls in wild Patas monkeys. *Folia Primatol.*, **69**, 93-99.
- Newman, J. D. (1997). Evolution of the primate isolation call. *Adv. Ethol.*, **32**, 128.
- Newman, J. D. & Bachevalier, J. (1997). Neonatal ablations of the amygdala and inferior temporal cortex alter the vocal response to social separation in rhesus macaques. *Brain Res.*, **758**, 180-186.
- Newman, J. D. & Goedecking, P. (1992). Noncategorical vocal communication in primates: The example of common marmoset phee calls. In *Nonverbal Vocal Communication* (H. Papousek, U. Juergens & M. Papousek, eds.). Cambridge University Press; Cambridge, pp. 87-101.
- Newman, J. D. (1995). Vocal ontogeny in macaques and marmosets: convergent and divergent lines of development. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newmann & U. Juergens, eds.). Plenum Press; New York, pp. 73-97.
- Nietsch, A. & Kopp, M.-L. (1998). Role of vocalization in species differentiation of Sulawesi tarsiers. *Folia Primatol.*, **69**, 371-378.
- Nietsch, A. (1999). Duet vocalizations among different populations of Sulawesi tarsiers. *Int. J. Primatol.*, **20**, 567-584.
- Norcross, J. L. & Newman, J. D. (1993). Context and gender specific differences in the acoustic structure of common marmoset *Callithrix jacchus* phee calls. *Am. J. Primatol.*, **30**, 37-54.
- Norcross, J. L. & Newman, J. D. (1999). Effects of separation and novelty on distress vocalizations and cortisol in the common marmoset (*Callithrix jacchus*). *Am. J. Primatol.*, **47**, 209-222.
- Norcross, J. L. & Newman, J. D. (1997). Social context affects phee call production by nonreproductive common marmosets (*Callithrix jacchus*). *Am. J. Primatol.*, **43**, 135-146.
- Norcross, J. L., Newman, J. D. & Cofrancesco, L. M. (1999). Context and sex differences exist in the acoustic structure of phee calls by newly-paired common marmosets (*Callithrix jacchus*). *Am. J. Primatol.*, **48**, 165-181.
- Norcross, J. L., Newman, J. D. & Fitch, W. (1994). Responses to natural and synthetic phee calls by common marmosets (*Callithrix jacchus*). *Am. J. Primatol.*, **33**, 15-29.
- Nunn, C. L. (2000). Maternal recognition of infant calls in ring-tailed lemurs. *Folia Primatol.*, **71**, 142-146.

- O'Connell, S. M. & Cowlshaw, G. (1994). Infanticide avoidance, sperm competition and mate choice: the function of copulation calls in female baboons. *Anim. Behav.*, **48**, 687-694.
- O'Connor, K. N., Barruel, P. & Sutter, M. L. (2000). Global processing of spectrally complex sounds in macaques (*Macaca mullata*) and humans. *J. Comp. Physiol. A.*, **186**, 903-912.
- Oda, R. (1996). Effects of contextual and social variables on contact call production in free-ranging ringtailed lemurs (*Lemur catta*). *Int. J. Primatol.*, **17**, 191-205.
- Oda, R. & Masataka, N. (1996). Interspecific responses of ringtailed lemurs to playback of antipredator alarm calls given by Verreaux's sifakas. *Ethology*, **102**, 441-453.
- Oda, R. (1999). Scent marking and contact call production in ring-tailed lemurs (*Lemur catta*). *Folia Primatol.*, **70**, 21-64.
- Oda, R. (1998). The responses of Verreaux's sifakas to anti-predator alarm calls given by sympatric ring-tailed lemurs. *Folia Primatol.*, **69**, 357-360.
- Oda, R. & Masataka, N. (1995). Function of copulatory vocalizations in mate choice by females of Japanese macaques (*Macaca fuscata*). *Folia Primatol.*, **64**, 132-139.
- Okamoto, K. & Matsumura, S. (1998). A preliminary study on the variables correlated with the emission of loud calls in wild moor macaques. *Folia Primatol.*, **69**, 277-283.
- Olsen, J. F. & Rauschecker, J. P. (1992). Medial geniculate neurons in the squirrel monkey sensitive to combinations of components in a species-specific vocalization. *Soc. Neurosci. Abstr.*, **18**, 882.
- Olupot, W., Waser, P. M. & Chapman, C. A. (1998). Fruit finding by mangabeys (*Lophocebus albigena*): Are monitoring of fig trees and use of sympatric frugivore calls possible strategies? *Int. J. Primatol.*, **19**, 339-353.
- Owren, M. J., Dieter, M. J., Seyfarth, R. M. & Cheney, D. L. (1993). Vocalizations of rhesus (*Macaca mulatta*) and Japanese (*M. fuscata*) macaques cross-fostered between species show evidence of only limited modification. *Dev. Psychobiol.*, **26**, 389-406.
- Owren, M. J., Seyfarth, R. M. & Cheney, D. L. (1997). The acoustic features of vowel-like grunt calls in chacma baboons (*Papio cynocephalus ursinus*): implications for production processes and functions. *J. Acoust. Soc. Am.*, **101**, 2951-2963.
- Owren, M. J. & Linker, C. D. (1995). Some analysis methods that may be useful to acoustic primatologists. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, London.
- Owren, M. J., Dieter, J. A., Seyfarth, R. M. & Cheney, D. L. (1992). Evidence of limited modification in the vocalizations of cross-fostered rhesus (*Macaca mulatta*) and Japanese (*Macaca fuscata*) macaques. In *Topics in Primatology, Vol. 1: Human Origins* (T. Nishida, W. C. McGrew, P. Marler, M. Pickford and F. B. M. DeWaal, eds.). University of Tokyo Press; Tokyo, pp. 257-270.
- Owren, M. J. & Rendall, D. (1997). An affect-conditioning model of nonhuman primate vocal signalling. In *Perspectives in Ethology, Vol. 12* (D. H. Owings, M. D. Beecher and N. S. Thompson, eds.). Plenum; New York, pp. 299-346.
- Owren, M. J., Hopp, S. L., Sinnott, J. M. & Petersen, M. R. (1988). Absolute auditory threshold in three old world monkey species (*Cercopithecus aethiops*, *C. neglectus*, *Macaca fuscata*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **102**, 99-107.
- Owren, M. J. & Rendall, D. (2001). Sound on the rebound: Bringing form and function back to the forefront in understanding nonhuman primate vocal signaling. *Evolutionary Anthropology: Issues, News, and Reviews*, **10**, 58-71.
- Owren, M. J. (1990). Acoustic classification of alarm calls by vervet monkeys (*Cercopithecus aethiops*) and humans (*Homo sapiens*). II. Synthetic calls. *J. Comp. Psychol.*, **104**, 29-40.
- Owren, M. J. (1990). Acoustic classification of alarm calls by vervet monkeys (*Cercopithecus aethiops*) and humans (*Homo sapiens*). I. Natural calls. *J. Comp. Psychol.*, **104**, 20-28.
- Owren, M. J., Seyfarth, R. M. & Hopps, S. L. (1992). Categorical vocal signaling in nonhuman primates. In *Nonverbal Communication: Comparative and Developmental Approaches* (H. Papousek, U. Juergens & M. Papousek, eds.). Cambridge University Press; Cambridge, pp. 102-112.
- Palombit, R. A., Cheney, D. L. & Seyfarth, R. M. (1999). Male grunts as mediators of social interaction with females in wild chacma baboons (*Papio cynocephalus ursinus*). *Behaviour*, **136**, 221-242.
- Partan, S. & Marler, P. (1999). Communication goes multimodal. *Science*, **283**, 1272-1273.
- Pelleg-Toiba, R. & Wollberg, Z. (1991). Discrimination of communication calls in the squirrel monkey: call detectors or cell ensembles? *J. Basic Clin. Physiol. Pharmacol.*, **2**, 257-272.
- Pepperberg, I. M. (1997). Social influences on the acquisition of human-based codes in parrots and nonhuman primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 157-177.
- Pereira, M. E. & Macedonia, J. M. (1990). Ringtailed lemur antipredator calls denote predators not response urgency. *Anim. Behav.*, **41**, 543-544.

- Peters, H. H. (2001). Tool use to modify calls by wild orang-utans. *Folia Primatol.*, **72**, 242-244.
- Poremba, A., Carson, R. E., Malloy, M. M., Territo, W., Saunders, R. C., Herscovitch, P. & Mishkin, M. (2001). FDG-PET imaging reveals hemispheric lateralization in macaque rostral superior temporal gyrus for species-specific monkey calls. *Soc. Neurosci. Abstr.*, **27**, 906.
- Preuschoft, S. (1995). *'Laughter' and 'Smiling' in Macaques: an Evolutionary Approach*. University of Utrecht Press; Utrecht.
- Preuss, A. & Mueller-Preuss, P. (1990). Processing of amplitude modulated sounds in the medial geniculate body of squirrel monkeys. *Exp. Brain Res.*, **79**, 207-211.
- Provine, R. R. (1996). Laughter. *Am. Sci.*, **84**, 38-45.
- Ramakrishnan, U. & Coss, R. G. (2000). Age differences in the responses to adult and juvenile alarm calls by bonnet macaques (*Macaca radiata*). *Ethology*, **106**, 131-144.
- Ramakrishnan, U. & Coss, R. G. (2000). Recognition of heterospecific alarm vocalizations by bonnet macaques (*Macaca radiata*). *J. Comp. Psychol.*, **114**, 3-12.
- Ramus, F., Hauser, M. D., Miller, C., Morris, D. & Mehler, J. (2000). Language discrimination by human newborns and by cotton-top tamarin monkeys. *Science*, **288**, 349-351
- Rasoloharijaona, S., Altrichter, H., Rakotosamimanana, B. & Zimmermann, E. (2001). Sex- and individual-specificity in the signaling system of a sexually monomorphic, nocturnal primate, the Milne Edwards sportive lemur (*Lepilemur edwardsi*). *Adv. Ethol.*, **36**, 246.
- Rauschecker, J. P. & Tian, B. (2000). Mechanisms and streams for processing of 'what' and 'where' in auditory cortex. *Proc. Natl. Acad. Sci. USA*, **97**, 11800-11806.
- Rauschecker, J. P., Tian, B. & Hauser, M. (1995). Processing of complex sounds in the macaque nonprimary auditory cortex. *Science*, **268**, 111-114.
- Rauschecker, J. p. & Tian, B. (2001). Spectral and temporal integration in rhesus monkey auditory cortex. *Adv. Ethol.*, **36**, 21.
- Recanzone, G. H., Guard, D. C., Phan, M. L. & Su, T. K. (2000). Correlation between the activity of single auditory cortical neurons and sound-localization behavior in the macaque monkey. *J. Neurophysiol.*, **83**, 2723-2739.
- Recanzone, G. H., Guard, D. C. & Phan, M. L. (2000). Frequency and intensity response properties of single neurons in the auditory cortex of the behaving macaque monkey. *J. Neurophysiol.*, **83**, 2315-2331.
- Recanzone, G. H., Schreiner, C. E., Sutter, M. L., Beitel, R. E. & Merzenich, M. M. (1999). Functional organization of spectral receptive fields in the primary auditory cortex of the owl monkey. *J. Comp. Neurol.*, **415**, 460-481.
- Renard, S., Savage-Rumbaugh, E. S. & Greaves, W. (2001). Intonation and meanings in Bonobo vocalizations. *Am. J. Primatol.*, **54**, Suppl. 1, 71-72.
- Rendall, D., Rodman, P. S. & Emond, R. E. (1996). Vocal recognition of individuals and kin in free-ranging rhesus monkeys. *Anim. Behav.*, **51**, 1007-1015.
- Rendall, D., Seyfarth, R. M., Cheney, D. L. & Owren, M. J. (1999). The meaning and function of grunt variants in baboons. *Anim. Behav.*, **57**, 583-592.
- Rendall, D., Owren, M. J. & Rodman, P. S. (1998). The role of vocal tract filtering in identity cueing in rhesus monkey (*Macaca mulatta*) vocalizations. *J. Acoust. Soc. Am.*, **103**, 602-614.
- Rendall, D., Cheney, D. L. & Seyfarth, R. M. (2000). Proximate factors mediating 'contact' calls in adult female baboons and their infants. *J. Comp. Psychol.*, **114**, 36-46.
- Reser, D. H., Fishman, Y. I., Arezzo, J. C. & Steinschneider, M. (1997). Rate encoding of binaurally alternating low-frequency tone bursts in macaque A1. *J. Acoust. Soc. Am.*, **101**, 3123.
- Riede, T. (1996). Vocalization in Japanese macaque infants *Macaca fuscata*: individual differences and parameter dynamics. *Bioacoustics*, **6**, 321.
- Riede, T. & Tembrock, G. (1997). Subharmonics, biphonations and frequency jumps in the vocalisation of Japanese macaques *Macaca fuscata*. *Bioacoustics*, **8**, 256-257.
- Rigamonti, M. M., Previde, E. P. & Poli, M. D. (1997). Physical and functional features of vocalisation in the young of *Macaca nemestrina*: A preliminary study. *Bioacoustics*, **8**, 271.
- Rocca, F., Boero, D. L. & Lenti, C. (2001). Individual differences in the human infant cry in a comparative perspective. *Folia Primatol.*, **72**, 137.
- Romanski, L. M. & Goldman-Rakic, P. S. (2002). An auditory domain in primate prefrontal cortex. *Nature Neurosci.*, **5**, 15-16.
- Roush, R. S. & Snowdon, C. T. (2001). Food transfer and development of feeding behavior and food-associated vocalizations in cotton-top tamarins. *Ethology*, **107**, 415-429.
- Roush, R. S. & Snowdon, C. T. (1999). The effects of social status on food-associated calling behaviour in captive cotton-top tamarins. *Anim. Behav.*, **58**, 1299-1305.
- Roush, R. S. (1996). Food-associated calling behaviour in cotton-top tamarins (*Saguinus oedipus*): environmental and developmental factors. Ph.D. thesis. University of Wisconsin, Madison.

- Roush, R. S. & Snowdon, C. T. (1994). Ontogeny of food-associated calls in cotton-top tamarins. *Anim. Behav.*, **47**, 263-273.
- Roush, R. S. & Snowdon, C. T. (2000). Quality, quantity, distribution and audience effects on food calling in cotton-top tamarins. *Ethology*, **106**, 673-690.
- Sakuro, O. (1989). Variability in contact calls between troops of Japanese macaques: a possible case of neutral evolution of animal culture. *Anim. Behav.*, **38**, 900-902.
- Savage-Rumbaugh, E. S. (1990). Language acquisition in a nonhuman species: Implications for the innateness debate. *Devl. Psychobiol.*, **23**, 599-620.
- Savage-Rumbaugh, S., Spircu, T. & Tagliatalata, J. (2001). Vocal speech in a nonhuman primate. *Adv. Ethol.*, **36**, 9.
- Schoen Ybarra, M. A. (1995). A comparative approach to the non-human primate vocal tract: implications for sound production. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, pp. 185-198.
- Schrader, L. & Todt, D. (1993). Contact call parameters covary with social context in common marmosets, *Callithrix j. jacchus*. *Anim. Behav.*, **46**, 1026-1028.
- Schroeder, C. E., Lindley, R. W., Specht, C., Marcovici, A., Smiley, J. & Javitt, D. C. (2001). Somatosensory input to auditory association cortex in the macaque monkey. *J. Neurophysiol.*, **85**, 1322-1327.
- Semple, S., McComb, K., Alberts, S. & Altmann, J. (2002). Information content of female copulation calls in yellow baboons. *Am. J. Primatol.*, **56**, 43-56.
- Semple, S. (1998). *Female copulation calls in primates*. Ph.D. thesis. University of Sussex.
- Semple, S. (1998). The function of barbary macaque copulation calls. *Proc. Roy. Soc. Lond., Ser. B., Biol. Sci.*, **265**, 287-291.
- Semple, S. (2001). Individuality and male discrimination of female copulation calls in the yellow baboon. *Anim. Behav.*, **61**, 1023-1028.
- Seyfarth, R. M., Cheney, D. L., Harcourt, A. H. & Stewart, K. J. (1994). The acoustic features of gorilla double grunts and their relation to behavior. *Am. J. Primatol.*, **33**, 31-50.
- Seyfarth, R. M. (1987). Vocal communication and its relation to language. In *Primate Societies* (B. Smuts, D. Cheney, R. Seyfarth, R. Wrangham & T. Struhsaker, eds.). University of Chicago Press; Chicago, pp. 440-451.
- Seyfarth, R. M. & Cheney, D. L. (1999). Production, usage, and response in nonhuman primate vocal development. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 391-417.
- Seyfarth, R. M. & Cheney, D. L. (1997). Some general features of vocal development in nonhuman primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 249-273.
- Seyfarth, R. M. & Cheney, D. L. (1997). Behavioral mechanisms underlying vocal communication in nonhuman primates. *Anim. Learn. Behav.*, **25**, 249-267.
- Shizawa, Y. (2001). Vocalization before grooming interactions in Japanese macaques. *Jap. J. Anim. Psychol.*, **51**, 39-46.
- Silk, J. B., Kaldor, E. & Boyd, R. (2000). Cheap talk when interests conflict. *Anim. Behav.*, **59**, 423-432.
- Sinnott, J. M. & Saporita, T. A. (2000). Differences in American English, Spanish, and monkey perception of the say-stay trading relation. *Percept. Psychophysics*, **62**, 1312-1319.
- Sinnott, J. M. & Brown, C. H. (1993). Effects of varying signal and noise levels on pure-tone frequency discrimination in humans and monkeys. *J. Acoust. Soc. Am.*, **93**, 1535-1540.
- Sinnott, J. M. & Brown, C. H. (1993). Effects of varying signal duration on pure-tone frequency discrimination in humans and monkeys. *J. Acoust. Soc. Am.*, **93**, 1541-1546.
- Skirl, J. & Todt, D. (1996). Laughter in response to tickling: a comparative approach. *Bioacoustics*, **6**, 321-322.
- Smith, D. W. & Olszyk, V. B. (1997). Auditory behavioral thresholds for Japanese macaques using insert earphones. *Am. J. Primatol.*, **41**, 323-329.
- Snowdon, C. T. & Elowson, A. M. (1999). Pygmy marmosets modify call structure when paired. *Ethology*, **105**, 893-908.
- Snowdon, C. T. (1993). A vocal taxonomy of the callitrichids. In *Marmosets and Tamarins: Systematics, Behaviour, and Ecology* (A. B. Rylands, ed.). Oxford University Press; New York, pp. 78-94.
- Snowdon, C. T., Elowson, A. M. & Roush, R. S. (1997). Social influences on vocal development in New World primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 234-249.
- Snowdon, C. T. (1997). Is speech special? Lessons from New World primates. In *New World Primates: Ecology, Evolution, and Behavior* (W. G. Kinzey, ed.). Walter de Gruyter; New York, pp. 75-93.
- Snowdon, C. T. & de la Torre, S. (2002). Multiple environmental contexts and communication in pygmy marmosets (*Cebuella pygmaea*). *J. Comp. Psychol.*, **116**, 182-188.

- Snowdon, C. T. & Elowson, A. M. (1992). Ontogeny of primate vocal communication. In *Topics in Primatology, Vol. 1: Human Origins* (T. Nishida, W. C. McGrew, P. Marler, M. Pickford & F. B. M. de Waal, eds.). University of Tokyo Press; Tokyo, pp. 279-290.
- Soltis, J., Newman, J. D., Bernhards, D. & Donkin, H. (2001). The structure and function of the chuck vocalization in captive squirrel monkeys. *Am. J. Primatol.*, **54**, Suppl. 1, 38.
- Soltis, J., Bernhards, D., Donkin, H. & Newman, J. D. (2002). Squirrel monkey chuck call: vocal response to playback chucks based on acoustic structure and affiliative relationship with the caller. *Am. J. Primatol.*, **57**, 119-130.
- Stanger, K. F. (1993). Structure and function of the vocalizations of nocturnal prosimians (Cheirogaleidae). Ph.D. dissertation. Eberhard-Karls-Universität. Tübingen.
- Steenbeek, R., Assink, P. & Wich, S. A. (1999). Tenure related changes in wild Thomas's langurs. II. Loud calls. *Behaviour*, **136**, 627-650.
- Steenbeek, R. & Assink, P. (1998). Individual differences in long-distance calls of male wild Thomas langurs. *Folia Primatol.*, **69**, 77-80.
- Steenbeek, R. (1999). Tenure related changes in wild Thomas's langurs. I: Between-group interactions. *Behaviour*, **136**, 595-626.
- Steinschneider, M., Reser, D. H., Fishman, Y. I., Schroeder, C. E. & Arezzo, J. C. (1998). Click train encoding in primary auditory cortex of the awake monkey: Evidence for two mechanisms subserving pitch perception. *J. Acoust. Soc. Am.*, **104**, 2935-2955.
- Stewart, K. J. & Harcourt, A. H. (1994). Gorilla's vocalizations during rest periods: signals of impending departure? *Behaviour*, **130**, 29-40.
- Su, T. K., Woods, T. M. & Recanzone, G. H. (2001). Responses of auditory cortical neurons to frequency modulated sweeps and conspecific vocalizations in the macaque monkey. *Soc. Neurosci. Abstr.*, **27**, 1345.
- Suarez, S. (2002). The response of white-bellied spider monkeys to the vocalizations of sympatric frugivores. *Am. J. Phys. Anthropol.*, Suppl., **34**, 151.
- Sugiura, H. (1998). Matching of acoustic features during the vocal exchange of coo calls by Japanese macaques. *Anim. Behav.*, **55**, 673-687.
- Sugiura, H. & Masataka, N. (1995). Temporal and acoustic flexibility in vocal exchanges of coo calls in Japanese macaques (*Macaca fuscata*). In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, pp. 121-140.
- Sugiura, H. (1993). Temporal and acoustic correlates in vocal exchange of coo calls in Japanese macaques. *Behaviour*, **124**, 207-225.
- Symmes, D. & Biben, M. (1986). Maternal recognition of individual infant squirrel monkeys from isolation call playbacks. *Am. J. Primatol.*, **9**, 39-46.
- Symmes, D. & Biben, M. (1992). Vocal development in nonhuman primates. In *Nonverbal Vocal Communication* (H. Papousek, U. Juergens & M. Papousek, eds.). Cambridge University Press; Cambridge, pp. 123-140.
- Tagliabue, J. P. & Savage-Rumbaugh, E. S. (2000). Vocalization production and usage in language-competent, captive bonobos (*Pan paniscus*). *Am. J. Primatol.*, **51**, Suppl. 1, 95.
- Teixidor, P. & Byrne, R. W. (1999). The 'whinny' of spider monkeys: Individual recognition before situational meaning. *Behaviour*, **136**, 279-308.
- Teixidor, P. & Byrne, R. W. (1997). Can spider monkeys (*Ateles geoffroyi*) discriminate vocalizations of familiar individuals and strangers? *Folia Primatol.*, **68**, 254-264.
- Tembrock, G. (1996). Communication by falsetto. *Bioacoustics*, **6**, 309.
- Thoms, G. & Juergens, U. (1987). Common input of the cranial motor nuclei involved in phonation in the squirrel monkey. *Exp. Neurol.*, **95**, 85-99.
- Tian, B., Reser, D., Durham, A., Kustov, A. & Rauschecker, J. P. (2001). Functional specialization in rhesus monkey auditory cortex. *Science*, **292**, 290-293.
- Todt, D. (1996). The dynamic of crying and its interactional role: phasic versus tonic components. In *Social and Biological Aspects of Infant Crying* (B. Lester, J. D. Newman & F. Pederson, eds.). Plenum Press; New York.
- Todt, D., Hammerschmidt, K., Ansorge, V. & Fischer, J. (1995). The vocal behavior of barbary macaques (*Macaca sylvanus*): call features and their performance in infants and adults. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, pp. 141-160.
- Todt, D. & Hultsch, H. (1996). Functional aspects of parameter variation in serial vocalizations. In *Proceedings of the XXth Congress of the International Primatology Society, Djakarta* (J. Supriatna, ed.).
- Tomaszycki, M. L., Davis, J. E., Gouzoules, H. & Wallen, K. (2001). Sex differences in infant rhesus macaque separation-rejection vocalizations and effects of prenatal androgens. *Horm. Behav.*, **39**, 267-276.

- Torre, S. de la & Snowdon, C. T. (2002). Environmental correlates of vocal communication of wild pygmy marmosets, *Cebuella pygmaea*. *Anim. Behav.*, **63**, 847-856.
- Torre, S. de la (1999). Environmental correlates of vocal communication of wild pygmy marmosets, *Cebuella pygmaea*. Ph.D. dissertation. University of Wisconsin. Madison.
- Tramo, M. J., Rosenbaum, E. R., Cariani, P. A. & Hauser, M. D. (2001). Differential responses of auditory cortex neurons to natural and unnatural vocalizations in alert *Macaca mulatta*. *Soc. Neurosci. Abstr.*, **27**, 1920.
- Tramo, M. J., Bellew, B. F. & Hauser, M. D. (1996). Discharge patterns of auditory cortical neurons evoked by species-specific vocalizations and synthetic complex signals in alert *Macaca mulatta*. *Soc. Neurosci. Abstr.*, **22**, 1623.
- Trincheri, C., Gamba, M., Ampollini, M. & Giacoma, C. (2000). Ontogeny of vocalisations of captive black-and-white ruffed lemur (*Varecia variegata variegata*). *Folia Primatol.*, **72**, 282-283.
- Trincheri, C., Giacoma, C., Gamba, M. & Ampollini, M. (1997). Vocalisations of captive black and white ruffed lemurs *Varecia variegata*: stability and mother-offspring comparison. *Bioacoustics*, **8**, 258.
- Ujhelyi, M. (1999). Territorial song and facial gesture: A language precursor in apes. *Behav. Brain Sci.*, **22**, 572.
- Valone, T. J. (1996). Food-associated calls as public information about patch quality. *Oikos*, **77**, 153-157.
- VanderHorst, V. G., Terasawa, E. & Ralston, H. J. 3rd. (2001). Monosynaptic projections from the nucleus retroambiguus region to laryngeal motoneurons in the rhesus monkey. *Neurosci.*, **107**, 117-125.
- Vogt, B. A. & Barbas, H. (1988). Structure and connections of the cingulate vocalization region in the rhesus monkey. In *The Physiological Control of Mammalian Vocalization* (J. D. Newman, ed.). Plenum Press; New York, pp. 203-225.
- Wang, X., Pistorio, A. & Snider, R. K. (2001). Ontogenetic changes in vocal production and usage in common marmoset monkeys. *Soc. Neurosci. Abstr.*, **27**, 1433.
- Wang, X. & Kadia, S. C. (2001). Differential representation of species-specific primate vocalizations in the auditory cortices of marmoset and cat. *J. Neurophysiol.*, **86**, 2616-2620.
- Wang, X., Merzenich, M. M., Beitel, R. & Schreiner, C. E. (1995). Representation of a species-specific vocalization in the primary auditory cortex of the common marmoset: temporal and spectral characteristics. *J. Neurophysiol.*, **74**, 2685-2702.
- Webster, D. B., Popper, A. N. & Fay, R. R., eds. (1992). *The Mammalian Auditory Pathway: Neuroanatomy*. Springer-Verlag; New York.
- Weiss, D. J., Garibaldi, B. T. & Hauser, M. D. (2001). The production and perception of long calls by cotton-top tamarins (*Saguinus oedipus*): acoustic analysis and playback experiments. *J. Comp. Psychol.*, **115**, 258-271.
- Whitehead, J. M. (1995). Vox Allouatinae: a preliminary survey of the acoustic characteristics and behavioral consequences of long-distance calls of howling monkeys. *Int. J. Primatol.*, **16**, 121-144.
- Wich, S. A., Assink, P. R., Becher, F. & Sterck, E. H. M. (2002). Playbacks of loud calls to wild Thomas langurs (Primates; *Presbytis thomasi*): The effect of familiarity. *Behaviour*, **139**, 79-87.
- Wienicke, A., Haeusler, U. & Juergens, U. (2001). Auditory frequency discrimination in the squirrel monkey. *J. Comp. Physiol. A.*, **187**, 189-195.
- Windfelder, T. L. (2001). Interspecific communication in mixed-species groups of tamarins: evidence from playback experiments. *Anim. Behav.*, **61**, 1193-1201.
- Windfelder, T. L. (1997). *Polyspecific association and interspecific communication between two neotropical primates: saddle-back tamarins (Saguinus fuscicollis) and emperor tamarins (Saguinus imperator)*. PhD. thesis. Duke University.
- Wissinger, L. S. (1986). *The taxonomic implications of mangabey and baboon vocalizations*. M.S. Thesis. Purdue University.
- Wright, A. A. (1999). Auditory list memory and interference processes in monkeys. *J. Exp. Psychol., Anim. Behav. Proc.*, **25**, 284-296.
- Wright, A. A. & Rivera, J. J. (1997). Memory of auditory lists by rhesus monkeys (*Macaca mulatta*). *J. Exp. Psychol.: Anim. Behav. Processes*, **23**, 441-449.
- Wright, A. A., Rivera, J. J., Hulse, S. H., Shyan, M. & Neiwirth, J. J. (2000). Music perception and octave generalization in rhesus monkeys. *J. Exp. Psychol.*, **129**, 291-307.
- Waal, F. de (1988). The communicative repertoire of captive bonobos (*Pan paniscus*), compared to that of chimpanzees. *Behaviour*, **106**, 183-251.
- Yajima, Y. & Larson, C. R. (1993). Multifunctional properties of ambiguous neurons identified electrophysiologically during vocalization in the awake monkey. *J. Neurophysiol.*, **70**, 529-540.
- Ybarra, M. A. S. (1992). A comparative approach to the nonhuman primate vocal tract: implications for sound production. *J. Acoust. Soc. Am.*, **91**, 2465.
- Zanzoni, M., Vitale, A. & Chiarotti, F. (2001). Social context affects the emission of food-calls in common marmosets (*Callithrix jacchus*). *Folia Primatol.*, **72**, 137-138.

- Zimmermann, E. (1996). Castration affects the emission of an ultrasonic vocalization in a nocturnal primate, the grey mouse lemur (*Microcebus murinus*). *Physiol. Behav.*, **60**, 693-697.
- Zimmermann, E. (1995). Acoustic communication in nocturnal prosimians. In *Creatures of the Dark. Biology of Nocturnal Prosimians* (L. Alterman, G. A. Doyle & M. K. Izard, eds.). Plenum Press; New York.
- Zimmermann, E. (1995). Loud calls in nocturnal prosimians: Structure, evolution and ontogeny. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, 47-72.
- Zimmermann, E., Newman, J. D. & Juergens, U., eds. (1995). *Current Topics in Primate Vocal Communication*. Plenum Press; New York and London.
- Zimmermann, E., Vorobieva, E., Wrogemann, D. & Hafen, T. (2000). Use of vocal fingerprinting for specific discrimination of gray (*Microcebus murinus*) and rufous mouse lemurs (*Microcebus rufus*). *Int. J. Primatol.*, **21**, 837-852.
- Zimmermann, E. & Hafen, T. G. (2001). Colony specificity in a social call of mouse lemurs (*Microcebus* spp.). *Am. J. Primatol.*, **54**, 129-141.
- Zimmermann, E. & Lerch, C. (1993). The complex acoustic design of an advertisement call in male mouse lemurs *Microcebus murinus* (Prosimii, Primates), and sources of its variation. *Ethology*, **93**, 211-224.
- Zimmermann, E., Binz, H. & Rahmann, H. (1992). Changes in hearing and sound induced 2-DG-pattern in the auditory system of developing tree shrews. *Soc. Neurosci. Abstr.*, **18**, 1195.
- Zimmermann, E. (1993). Behavioral measures of auditory thresholds in developing tree shrews (*Tupaia belangeri*). *J. Acoust. Soc. Am.*, **94**, 3071-3075.
- Zuberbuehler, K., Jenny, D. & Bshary, R. (1999). The predator deterrence function of primate alarm calls. *Ethology*, **105**, 477-490.
- Zuberbuehler, K., Noe, R. & Seyfarth, R. M. (1997). Diana monkey long-distance calls: messages for conspecifics and predators. *Anim. Behav.*, **53**, 589-604.
- Zuberbuehler, K. (2000). Referential labelling in Diana monkeys. *Anim. Behav.*, **59**, 917-927.
- Zuberbuehler, K. (2000). Causal cognition in a non-human primate: field playback experiments with Diana monkeys. *Cognition*, **76**, 195-207.
- Zuberbuehler, K. (2001). Predator-specific alarm calls in Campbell's monkeys, *Cercopithecus campbelli*. *Behav. Ecol. Sociobiol.*, **50**, 414-422.
- Zuberbuehler, K. (2002). A syntactic rule in forest monkey communication. *Anim. Behav.*, **63**, 293-299.
- Zuberbuehler, K., Cheney, D. L. & Seyfarth, R. M. (1999). Conceptual semantics in a nonhuman primate. *J. Comp. Psychol.*, **113**, 33-42.

MAN

- Abrams, R. M., Gerhardt, K. J. & Peters, A. J. M. (1995). Transmission of sound and vibration to the fetus. I *Fetal Development: A Psychobiological Perspective* (J.-P. Lecanuet, W. P. Fifer, N. A. Krasnegor and W. P. Smotherman, eds.). Erlbaum; Hillsdale, New Jersey, pp. 315-330.
- Adam, G. (1993). Communication in animals. In *Acta Neurochirurgica Supplementum, Vol. 56. Language and Speech* (E. Pasztor, J. Vajda & F. Loew, eds). Springer-Verlag; Vienna, pp. 9-13.
- Aitchison, J. (1996). *The Seeds of Speech: Language Origin and Evolution*. Cambridge University Press; Cambridge and New York.
- Alipour, F. & Scherer, R. C. (1995). Pulsatile airflow during phonation: An excised larynx model. *J. Acoust. Soc. Am.*, **97**, 1241-1248.
- Arcadi, A. C. (2000). Vocal responsiveness in male wild chimpanzees: implications for the evolution of language. *J. Human Evol.*, **39**, 205-223.
- Arias, C. & Ramos, O. A. (1997). Psychoacoustic tests for the study of human echolocation ability. *Appl. Acoustics*, **51**, 399-419.
- Ashmead, D. H., LeRoy, D. & Odon, R. D. (1990). Perception of the relative distances of nearby sound sources. *Percept. Psychophysics*, **47**, 326-331.
- Au, W. W. L. & Martin, D. W. (1988). Sonar discrimination of metallic plates by dolphins and humans. In *Animal Sonar Processes and Performance* (P. E. Nachtigall and P. W. B. Moore, eds.). Plenum Publishing Corp.; New York, pp. 809-814.
- Avery, J. D. & Liss, J. M. (1996). Acoustic characteristics of less-masculine-sounding male speech. *J. Acoust. Soc. Am.*, **99**, 3738-3748.
- Barbujani, G. (1991). What do languages tell us about human microevolution? *Trends Ecol. Evol.*, **6**, 151-156.
- Bateman, R., Goddard, I., O'Grady, R., Funk, V. A., Mooi, R., Kress, W. J. & Cannell, P. (1990). The feasibility of reconciling human phylogeny and the history of language. *Curr. Antropol.*, **31**, 1-24.

- Belin, P., Zatorre, R. J., Lafaille, P., Ahadt, P. & Pike, B. (2000). Voice-selective areas in human auditory cortex. *Nature*, **403**, 309-312.
- Benzaquen, S., Gagnon, R., Hunse, C. & Foreman, J. (1990). The intrauterine sound environment of the human fetus during labor. *Am. J. Obstet. Gyn.*, **163**, 484-490.
- Berlin, C. I., Hood, L. J., Hurley, A. E., Wen, H. & Kemp, D. T. (1995). Binaural noise suppresses linear click-evoked otoacoustic emissions more than ipsilateral or contralateral noise. *Hear. Res.*, **87**, 96-103.
- Berry, D. A., Herzel, H., Titze, I. R. & Krischer, K. (1994). Interpretation of biomechanical simulations of normal and chaotic vocal fold oscillations with empirical eigenfunctions. *J. Acoust. Soc. Am.*, **95**, 3595-3604.
- Bickerton, D. (1990). *Language and Species*. University of Chicago Press; Chicago.
- Bradshaw, J. L. & Rodgers, L. (1993). *The Evolution of Lateral Asymmetries, Language, Tool Use and Intellect*. Academic Press; London.
- Brown, C. H., Sinnott, J. M. & Kressley, R. A. (1994). Perception of chirps by Syke's monkeys (*Cercopithecus albogularis*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **108**, 243-251.
- Burling, R. (1993). Primate calls, human language, and nonverbal communication. *Curr. Anthropol.*, **34**, 25-53.
- Burling, R. (1992). *Patterns of Language: Structure, Variation, Change*. Academic Press; New York.
- Carlsson, P., Haakansson, B. & Ringdahl, A. (1995). Force threshold for hearing by direct bone conduction. *J. Acoust. Soc. Am.*, **97**, 1124-1129.
- Carre, R., Lindblom, B. & MacNeilage, P. (1995). Acoustic factors in the evolution of the human vocal tract. *Compt. Rend. Acad. Sci. Ser. II*, **320**, 471-476 (French).
- Cavalli-Sforza, L. L., Piazza, A., Menozzi, P. & Mountain, J. (1988). Reconstruction of human evolution: bringing together genetic, archaeological, and linguistic data. *Proc. Natl. Acad. Sci. USA*, **85**, 6002-6006.
- Cavalli-Sforza, L. L. (1997). Genes, peoples and languages. *Proc. Natl. Acad. Sci. USA*, **94**, 7719-7724.
- Cavalli-Sforza, L. L. (2000). *Genes, Peoples, and Languages*. North Point Press (Farrar, Straus and Giroux); New York.
- Cavalli-Sforza, L. L. (1991). Genes, people and languages. *Sci. Am.*, **265**(5), 104-110.
- Collins, S. A. (2000). Men's voices and women's choices. *Anim. Behav.*, **60**, 773-780.
- Colton, R. H. & Caspar, J. K. (1996). *Understanding Voice Problems*. Williams and Wilkins; Baltimore.
- Corina, D. P., Vaid, J. & Bellugi, U. (1992). The linguistic basis of left hemisphere specialization. *Science*, **255**, 1258-1260.
- Crelin, E. (1987). *The Human Vocal Tract: Anatomy, Function, Development, and Evolution*. Vantage Press; New York.
- Crowley, T. (1992). *An Introduction to Historical Linguistics. 2nd ed.* Oxford University Press; Oxford.
- Davis, P. J. & Fletcher, N. H. (1996). *Vocal Fold Physiology*. Singular Publ. Group Inc.; San Diego, London.
- Deacon, T. W. (1997). *The Symbolic Species: The Co-evolution of Language and the Brain*. W. W. Norton.
- Deacon, T. W. (1992). The neural circuitry underlying primate calls and human language. In *Language Origin: A Multidisciplinary Approach* (J. Wind, B. Chiarelli, B. Bichakjian, A. Nocentini & A. Jonker, eds.). Kluwer; Dordrecht, pp. 121-162.
- DeCaspar, A. & Spence, M. (1986). Prenatal maternal speech influences newborns' perception of speech sounds. *Infant Behav. and Devel.*, **9**, 113-150.
- DeCasper, A. J., Lecanuet, J.-P., Busnel, M. C., Granier-Deferre, C. & Maugeais, R. (1994). Fetal reaction to recurrent maternal speech. *Infant Behav. Dev.*, **17**, 159-164.
- Dewsbury, D. A. (1992). Surplusage, audience effects and George John Romanes. *Behav. Brain Sci.*, **15**, 152.
- Dhondt, A. A., Lambrechts, M. M. & Bijnens, L. (1989). Acoustic communication in birds and its differences from human language. In *Studies of Language Origins* (J. Wind, E. G. Pulleyblank, E. de Grolier & B. H. Bichakjian, eds.). John Benjamins; Amsterdam, pp. 273-281.
- Dobie, R. A. & Wiederhold, M. L. (1992). Ultrasonic hearing. *Science*, **255**, 1584-1585.
- Doupe, A. J. & Kuhl, P. K. (1999). Birdsong and human speech: common themes and mechanisms. *Ann. Rev. Neurosci.*, **22**, 567-631.
- Dunbar, R. I. M. (1995). Neocortical size and language. *Behav. Brain Sci.*, **18**, 388-389.
- Dunbar, R. I. M. (1993). Coevolution of neocortical size, group size and language in humans. *Behav. Brain Sci.*, **16**, 681-735.
- Easton, R. D., Greene, A. J., DiZio, P. & Lackner, J. R. (1998). Auditory cues for orientation and postural control in sighted and congenitally blind people. *Exp. Brain Res.*, **118**, 541-550.
- Ehret, G. & Fleschhutz, D. B. (2001). Common rules of communication sound perception in mice and men. *Adv. Ethol.*, **36**, 24.
- Ehret, G. & Riecke, S. (2002). Mice and humans perceive multiharmonic communication sounds in the same way. *Proc. Natl. Acad. Sci. USA*, **99**, 479-482.
- Eilers, R. E., Oller, D. K., Levine, S., Basinger, D., Lynch, M. P. & Urbano, R. (1993). The role of prematurity:

- an socioeconomic status in the onset of canonical babbling in infants. *Infant Behav. Dev.*, **16**, 297-315.
- Elowson, A. M., Snowdon, C. T. & Lazaro-Perea, C. (1998). "Babbling" and social context in infant monkeys: Parallels to human infants. *Trends Cogn. Sci.*, **2**, 31-37.
- Eriksson, A. & Traunmueller, H. (2002). Perception of vocal effort and distance from the speaker on the basis of vowel utterances. *Percept. Psychophysics*, **64**, 131-139.
- Fastl, H., Widmann, U. & Mueller-Preuss, P. (1991). Correlations between hearing and vocal activity in man and the squirrel monkey. *Acustica*, **73**, 35-36.
- Feng, A. S. & Ratnam, R. (2000). Neural basis of hearing in real-world situations. *Annu. Rev. Psychol.*, **51**, 699-725.
- Fitch, W. T. & Reby, D. (2001). The descended larynx is not uniquely human. *Proc. Roy. Soc. Lond. B.*, **268**, 1669-1675.
- Fitch, W. T. (1994). *Vocal tract length perception and the evolution of language*. Ph.D. thesis. Brown University.
- Fort, A. & Manfredi, C. (1998). Acoustic analysis of newborn infant cry signals. *Medic. Engin. Physics*, **20**, 432-442.
- Furlow, F. B. (1997). Human neonatal cry quality as an honest signal of fitness. *Evol. Human Behav.*, **18**, 175-193.
- Gabrieli, J. D. E., Poldrack, R. A. & Desmond, J. E. (1998). The role of left prefrontal cortex in language and memory. *Proc. Natl. Acad. Sci. USA*, **95**, 906-913.
- Gay, T., Boe, L.-J., Perrier, P., Feng, G. & Swayne, E. (1991). The acoustic sensitivity of vocal tract constrictions: A preliminary report. *J. Phonetics*, **19**, 445-452.
- Geissmann, T. (2000). Gibbon songs and human music in an evolutionary perspective. In *The Origins of Music* (N. L. Wallin, B. Merker and S. Brown, eds.). MIT Press; Cambridge, Massachusetts.
- Gerratt, B. R. & Kreiman, J. (1995). The utility of acoustic measures of voice quality. In *Workshop on Acoustic Voice Analysis* (D. Wong, ed.). National Center for Voice and Speech; Denver.
- Goberman, A. M. & Robb, M. P. (1999). Acoustic examination of pre-term and full-term infant cries: the long-time average spectrum. *J. Speech Language Hear. Res.*, **42**, 850-861.
- Goldin-Meadow, S. (1997). The resilience of language in humans. In *Social Influence on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 293-311.
- Goldstein, M. H. & West, M. J. (1999). Consistent responses of human mothers to prelinguistic infants: The effect of prelinguistic repertoire size. *J. Comp. Psychol.*, **113**, 52-57.
- Goldstein, J. L. (1995). Relations among compression, suppression, and combination tones in mechanical responses of the basilar membrane: data and MBPNL model. *Hear. Res.*, **89**, 52-68.
- Haldane, J. B. S. (1992). Animal communication and the origin of human language. *Reprint. Curr. Sci.* (Bangalore), **63**, 604-611.
- Harris, C. R. (1999). The mystery of ticklish laughter. *Amer. Sci.*, **87**, 344-351.
- Hasson, O. (1997). The maintenance of a symbolic language and the burden of proof: why do we so rarely lie? *Adv. Ethol.*, **32**, 138.
- Hattori, K. (1999). Two origins of language evolution: Unilateral gestural language and bilateral vocal language, hypotheses from IQ test data. *Mankind Quart.*, **39**, 399-436.
- Hauser, M. D. & Marler, P. (1992). How do and should studies of animal communication affect interpretations of child phonological development? In *Phonological development: models, research, implications* (C. Ferguson, L. Menn & C. Stoel-Gammon, eds). York Press, Maryland, pp. 663-680.
- Hauser, M. D. & Fowler, C. (1991). Declination in fundamental frequency is not unique to human speech: Evidence from nonhuman primates. *J. Acoust. Soc. Am.*, **91**, 363-369.
- Helmstaedter, C., Kurthen, M., Gleissner, U., Linke, D. B. & Elger, C. E. (1997). Natural atypical language dominance and language shifts from the right to the left hemisphere in right hemisphere pathology. *Naturwissenschaften*, **84**, 250-252.
- Hepper, P. G., Scott, D. & Shahidullah, S. (1993). Newborn and fetal response to maternal voice. *J. Reproduct. Infant Psychol.*, **11**, 147-153.
- Hepper, P. G. & Shahidullah, B. S. (1994). Development of fetal hearing. *Archives of Diseases in Childhood*, **71**, F81-F87.
- Herzel, H. (1993). Bifurcation and chaos in voice signals. *Appl. Mech. Rev.*, **46**, 399-413.
- Herzel, H. & Reuter, R. (1996). Biphonation in voice signals. In *Nonlinear, Chaotic, and Advanced Signal Processing Methods for Engineers and Scientists* (R. A. Katz, T. W. Frison, J. B. Kadtko and A. R. Bulsara, eds.). American Institute of Physics; Woodbury, pp. 644-657.
- Herzel, H., Berry, D., Tietze, I. R. & Saleh, S. (1994). Analysis of vocal disorders with methods from nonlinear dynamics. *J. Speech Hear. Res.*, **37**, 1008-1019.
- Hirano, M. (1989). Objective evaluation of the human voice: Clinical aspects. *Folia Phoniatr.*, **41**, 89-144.
- Hodge, M. (1993). Assessment and treatment of a child with a developmental speech disorder: a biological

- Behavioural perspective. *Semin. Speech Lang.*, **14**, 128-140.
- Hsu, H.-C., Fogel, A. & Cooper, R. B. (2000). Infant vocal development during the first 6 months: speech quality and melodic complexity. *Infant and Child Development*, **9**, 1-16.
- Jackendoff, R. (1994). *Patterns in the Mind: Language and Human Nature*. Basic Books.
- Jackendoff, R. (1999). Possible stages in the evolution of the language capacity. *Trends Cogn. Sci.*, **3**, 272-279.
- Jarvis, E. D. (2001). Insights from vocal learning birds into the neurobiology of human language. *Soc. Neurosci. Abstr.*, **27**, 843.
- Jiang, J. J., Raviv, J. R. & Hanson, D. G. (2001). Comparison of the phonation-related structures among pig, dog, white-tailed deer, and human larynges. *Ann. Otol. Rhinol. Laryngol.*, **110**, 1120-1125.
- Jin, C., Schenkel, M. & Carlile, S. (2000). Neural system identification model of human sound localization. *J. Acoust. Soc. Am.*, **108**, 1215-1235.
- Johnson, K., Ladefoged, P. & Lindau, M. (1993). Individual differences in vowel production. *J. Acoust. Soc. Am.*, **94**, 701-714.
- Jouanjan-L'Antoene, A. (1997). Reciprocal interactions and the development of communication and language between parents and children. In *Social Influence on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 312-327.
- Juergens, U. (1995). Neuronal control of vocal production in nonhuman and human primates. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York.
- Jusczyk, P. W. & Hohne, E. A. (1997). Infants' memory for spoken words. *Science*, **277**, 1984-1986.
- Kagawa, Y., Shimoyama, R., Yamabuchi, T., Murai, T. & Takarada, K. (1992). Boundary element models of the vocal tract and radiation field and their response characteristics. *J. Sound Vib.*, **157**, 385-403.
- Kay, R. F., Cartmill, M. & Balow, M. (1998). The hypoglossal canal and the origin of human vocal behavior. *Proc. Natl. Acad. Sci. USA*, **95**, 5417.
- Kimura, D. (1993). *Neuromotor Mechanisms in Human Communication*. Oxford University Press; Oxford.
- Kuhl, P. K. (1987). The special-mechanisms debate in speech research: categorization tests on animals and infants. In *Categorical Perception* (S. Harnad, ed.). Cambridge University press; Cambridge, pp. 355-386.
- Kuhl, P. K. (1999). Speech, language, and the brain: Innate preparation for learning. In *The Design of Animal Communication* (M. D. Hauser and M. Konishi, eds.). MIT Press; Cambridge, Massachusetts, pp. 419-450.
- Kuhl, P. K. (2000). A new view of language acquisition. *Proc. Natl. Acad. Sci. USA*, **97**, 11850-11857.
- Laitman, J. T. & Reidenberg, J. S. (1993). Specializations of the human upper respiratory and upper digestive systems as seen through comparative and developmental anatomy. *Dysphagia*, **8**, 318-325.
- Lane, J. D., Kasian, S. J., Owens, J. E. & Marsh, G. R. (1998). Binaural auditory beats affect vigilance performance and mood. *Physiol. Behav.*, **63**, 249-252.
- Langner, G., Sams, M., Heil, P. & Schulze, H. (1997). Frequency and periodicity are represented in orthogonal maps in the human auditory cortex: evidence from magnetoencephalography. *J. Comp. Physiol. A.*, **181**, 665-676.
- Lasky, R. E., Maier, M. M., Snodgrass, E. B., Laughlin, N. K. & Hecox, K. E. (1995). Auditory evoked brainstem and middle latency responses in *Macaca mulatta* and humans. *Hear. Res.*, **89**, 212-225.
- Lasky, R. E., Snodgrass, E. B., Laughlin, N. K. & Hecox, K. E. (1995). Distortion product otoacoustic emissions in *Macaca mulatta* and humans. *Hear. Res.*, **89**, 35-51.
- Lecanuet, J.-P., Granier-Deferre, C., Jacquet, A. Y., Capponi, I. & Ledru, L. (1993). Prenatal discrimination of a male and a female voice uttering the same sentence. *Early Dev. Parent.*, **2**, 217-222.
- Lecanuet, J. P., Granier-Deferre, C., Jacquet, A.-Y. & DeCasper, A. J. (2000). Fetal discrimination of low-pitched musical notes. *Dev. Psychobiol.*, **36**, 29-39.
- Leinonen, L., Linnankoski, I. & Laakso, M.-L. (2000). Shared features in emotional vocalization of *Macaca arctoides* and man. *Acta Physiol. Scand.*, **170**, A112-A113.
- Levi, E. C., Folsom, R. C. & Dobie, R. A. (1995). Coherence analysis of envelope-following responses (EFRs) and frequency-following responses (FFRs) in infants and adults. *Hear. Res.*, **89**, 21-27.
- Lewald, J. & Ehrenstein, W. H. (1996). The effect of eye position on auditory lateralization. *Exp. Brain Res.*, **108**, 473-485.
- Lieberman, A. M. & Mattingly, I. G. (1989). A specialization for speech perception. *Science*, **243**, 489-494.
- Lieberman, P. & Blumstein, S. E. (1988). *Speech Physiology, Speech Perception and Acoustic Phonetics*. Cambridge University Press; New York.
- Lina-Granade, G. & Collet, L. (1995). Effect of interstimulus interval on evoked otoacoustic emissions. *Hear. Res.*, **87**, 55-61.
- Lind, K. & Wermke, K. (2002). Development of the vocal fundamental frequency of spontaneous cries during the first 3 months. *Int. J. Pediatr. Otorhinolaryngol.*, **64**, 97-104.

- Lippmann, R. P. (1997). Speech recognition by machines and humans. *Speech Communication*, **22**, 1-15.
- Little, A. D., Mershon, D. H. & Cox, P. H. (1992). Spectral content as a cue to perceived auditory distance. *Perception*, **21**, 405-416.
- Locke, J. L. (1993). *The Child's Path to Spoken Language*. Harvard University Press; Cambridge, Mass.
- Locke, J. L. & Hauser, M. D. (1999). Sex and status effects on primate volubility: Clues to the origin of vocal languages? *Evol. Human Behav.*, **20**, 151-158.
- Locke, J. L. & Snow, C. (1997). Social influences on vocal learning in human and nonhuman primates. In *Social Influences on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 274-292.
- MacLarnon, A. M. & Hewitt, G. P. (1999). The evolution of human speech: the role of enhanced breathing control. *Am. J. Phys. Antropol.*, **109**, 341-363.
- MacNeilage, P. F. & Davis, B. L. (2000). On the origin of internal structure of word forms *Science*, **288**, 527-531.
- Maeda, S. (1991). Discussion summaries: Toward better models of speech production. *J. Phonetics*, **19**, 493-495.
- Maekelae, J. P. & McEvoy, L. (1996). Auditory evoked fields to illusory sound source movements. *Exp. Brain Res.*, **110**, 446-454.
- Makeig, S., Mueller, M. M. & Rockstroh, B. (1996). Effects of voluntary movements on early auditory brain processes. *Exp. Brain Res.*, **110**, 487-492.
- Masataka, N. (1992). Pitch characteristics of Japanese maternal speech to infants. *J. Child Lang.*, **19**, 213-223.
- Masataka, N. (1993). Relation between pitch contour of prelinguistic vocalizations and communicative functions in Japanese infants. *Infant Behav. Dev.*, **16**, 397-401.
- Masterton, J. J. & Oller, D. K. (1999). Use of technology in phonological assessment: evaluation of early meaningful speech and prelinguistic vocalizations. *Semin. Speech Language*, **20**, 133-147.
- Mastropieri, D. & Turkewitz, G. (2001). Prenatal experience and neonatal responsiveness to vocal expressions of emotion. *Dev. Psychobiol.*, **35**, 204-214.
- McAdams, S. & Bigand, E., eds. (1993). *Thinking in Sound: The Cognitive Psychology of Human Audition*. Oxford University Press; Oxford.
- McCowan, B. & Reiss, D. (1997). Vocal learning in captive bottlenose dolphins: A comparison with humans and nonhuman animals. In *Social Influence on Vocal Development* (C. T. Snowdon and M. Hausberger, eds.). Cambridge University Press; Cambridge, pp. 178-207.
- McGowan, R. S. (1991). Nonlinearities for one-dimensional propagation in the vocal tract. *J. Phonetics*, **19**, 425-432.
- McPherson, D. L. & Starr, A. (1995). Auditory time-intensity cues in the binaural interaction component of the auditory evoked potentials. *Hear. Res.*, **89**, 162-171.
- Mende, W., Herzl, H. & Wermke, K. (1990). Bifurcations and chaos in newborn infant cries. *Phys. Lett. A*, **145**, 418-424.
- Mergell, P. & Herzl, H. (1997). Modelling biphonation - The role of the vocal tract. *Speech Communication*, **22**, 141-154.
- Mershon, D. H., Ballenger, W. L., Little, A. D., McMurtry, P. L. & Buchanan, J. L. (1989). Effects of room reflectance and background noise on perceived auditory distance. *Perception*, **18**, 403-416.
- Mershon, D. H. (1997). Phenomenal geometry and the measurement of perceived auditory distance. In *Binaural and Spatial Hearing in Real and Virtual Environments* (R. H. Gilkey and T. R. Anderson, eds.). Lawrence Erlbaum Associates; Mahwah, New Jersey.
- Moon, C., Cooper, R. P. & Fifer, W. P. (1993). Two-day-olds prefer their native language. *Infant Behav. Dev.*, **16**, 495-500.
- Moore, J. K., Perazzo, L. M. & Braun, A. (1995). Time course of axonal myelination in the human brainstem auditory pathway. *Hear. Res.*, **87**, 21-31.
- Moore, C. A. (1992). The correspondence of vocal tract resonance with volumes obtained from magnetic resonance images. *J. Speech Hearing Res.*, **35**, 1009-1024.
- Moore, B. C. J. & Glasberg, B. R. (1993). Simulation of the effects of loudness: recruitment and threshold elevation on the intelligibility of speech in quiet and in a background of speech. *J. Acoust. Soc. Am.*, **94**, 2050-2062.
- Morizot-Martinet, S., Petiot, J.-C., Smolik, H.-J., Trapet, P. & Gisselmann, A. (1997). Effects of road traffic noise and of a benzodiazepine, individually and combined, upon auditory brainstem evoked potentials. *C. R. Acad. Sci. Paris, Sciences de la vie*, **320**, 877-884 (French).
- Muhlnickel, W., Elbert, T., Taub, E. & Flor, H. (1998). Reorganization of auditory cortex in tinnitus. *Proc. Natl. Acad. Sci. USA*, **95**, 10340-10343.
- Nicastro, N. (2001). Differential patterns in classification of domestic cat vocalizations by human listeners. *Adv. Ethol.*, **36**, 228.
- Nittrouer, S. (1995). Children learn separate aspects of speech production at different rates: Evidence from

- spectral moments. *J. Acoust. Soc. Am.*, **97**, 520-530.
- Njegovan, M., Weisman, R., Ito, S. & Mewhort, D. (1993). How grouping improves the categorisation of frequency in song birds and humans and why song birds do it better. *Canad. Acoustics*, **21**, 87-88.
- Njegovan, M., Ito, S., Mewhort, D. & Weisman, R. (1995). Classification of frequencies into ranges by songbirds and humans. *J. Exp. Psychol.: Anim. Behav. Proc.*, **21**, 33-42.
- Nwokah, E. E., Hsu, H.-C., Davies, P. & Fogel, A. (1999). The integration of laughter and speech in vocal communication: A dynamic systems perspective. *J. Speech Language Hear. Res.*, **42**, 880-894.
- O'Connor, K. N., Barruel, P. & Sutter, M. L. (2000). Global processing of spectrally complex sounds in macaques (*Macaca mullata*) and humans. *J. Comp. Physiol. A.*, **186**, 903-912.
- Olive, J. P., Greenwood, A. & Coleman, J. (1993). *Acoustics of American English speech: A dynamic Approach*. Springer-Verlag; New York.
- Omori, K., Kojima, H., Kakani, R., Slavitt, D. H. & Blaugrund, S. M. (1997). Acoustic characteristics of rough voice: Subharmonics. *J. Voice*, **11**, 40-47.
- Owren, M. J., Hopp, S. L., Sinnott, J. M. & Petersen, M. R. (1988). Absolute auditory threshold in three old world monkey species (*Cercopithecus aethiops*, *C. neglectus*, *Macaca fuscata*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **102**, 99-107.
- Owren, M. J. (1990). Acoustic classification of alarm calls by vervet monkeys (*Cercopithecus aethiops*) and humans (*Homo sapiens*). I. Natural calls. *J. Comp. Psychol.*, **104**, 20-28.
- Owren, M. J. (1990). Acoustic classification of alarm calls by vervet monkeys (*Cercopithecus aethiops*) and humans (*Homo sapiens*). II. Synthetic calls. *J. Comp. Psychol.*, **104**, 29-40.
- Oyama, S. (1990). Commentary. The idea of innateness: Effects on language and communication research. *Devl. Psychobiol.*, **23**, 741-747.
- Papaeliou, C., Minadakis, G. & Cavouras, D. (2002). Acoustic patterns of infant vocalizations expressing emotions and communicative functions. *J. Speech Language Hear. Res.*, **45**, 311-317.
- Patterson, D. K. (1998). Acoustic and articulatory correlates of stop consonants in a parrot and a human subject. *J. Acoust. Soc. Am.*, **103**, 2197-2215.
- Patterson, D. K. & Pepperberg, I. M. (1994). A comparative study of human and parrot phonation: Acoustic and articulatory correlates of vowels. *J. Acoust. Soc. Am.*, **96**, 634-648.
- Pennisi, E. (1997). The architecture of hearing. *Science*, **278**, 1223-1224.
- Penny, D., Watson, E. E. & Steel, M. A. (1993). Trees from languages and genes are very similar. *Syst. Biol.*, **42**, 382-384.
- Pepperberg, I. M. (1988). The importance of social interaction and observation in the acquisition of communicative competence: possible parallels between avian and human learning. In *Social Learning: A Comparative Approach* (T. T. Zentall & B. G. Galef, Jr., eds.). Erlbaum; Hillsdale, N. J., pp. 279-299.
- Petersen, J. (1990). Estimation of loudness and apparent distance of pure tones in a free field. *Acoustica*, **70**, 61-65.
- Petit, C., Leveilliers, J. & Hardelin, J.-P. (2001). Molecular genetics og hearing loss. *Annu. Rev. Genet.*, **35**, 589-645.
- Petitto, L. & Marentette, P. F. (1991). Babbling in the manual mode: evidence for the ontogeny of language. *Science*, **251**, 1493-1496.
- Philbeck, J. W. & Mershon, D. H. (2002). Knowledge about typical source output influences perceived auditory distance. *J. Acoust. Soc. Am.*, **111**, 1980-1983.
- Pichora-Fuller, M. K., Schneider, B. A. & Daneman, M. (1995). How young and old adults listen to and remember speech in noise. *J. Acoust. Soc. Am.*, **97**, 593-608.
- Pijl, S. & Schwarz, D. W. F. (1995). Melody recognition and musical interval perception by deaf subjects stimulated with electrical pulse trains through single cochlear implant electrodes. *J. Acoust. Soc. Am.*, **98**, 886-895.
- Pijl, S. & Schwarz, D. W. F. (1995). Intonation of musical intervals by deaf subjects stimulated with single bipolar cochlear implant electrodes. *Hear. Res.*, **89**, 203-211.
- Pinker, S. (1995). *The Language Instinct: How the mind creates language*. Harper-Collins; New York.
- Provine, R. R. (1996). Laughter. *Am. Sci.*, **84**, 38-45.
- Provine, R. R. (1993). Laughter punctuates speech: Linguistic, social and gender contexts of laughter. *Ethology*, **95**, 291-298.
- Provine, R. R. (2000). The laughing species. *Natural History*, **12/2000-1/2001**, 72-77.
- Pulvermueller, F. (1995). Neurobiology of the word treatment. *Naturwissenschaften*, **82**, 279-287 (German).
- Ramos, O. A. & Arias, C. (1997). Human echolocation: the ECOTEST system. *Appl. Acoustics*, **51**, 439-445.
- Ramus, F., Hauser, M. D., Miller, C., Morris, D. & Mehler, J. (2000). Language discrimination by human newborns and by cotton-top tamarin monkeys. *Science*, **288**, 349-351
- Rauschecker, J. P. (1999). Auditory cortical plasticity: a comparison with other sensory systems. *Trends*

- Neurosci.*, **22**, 74-80.
- Robb, J. (1993). A social prehistory of European languages. *Antiquity*, **67**, 747-760.
- Robb, M. P. & Saxman, S. H. (1988). Acoustic observations in young children's non-cry vocalizations. *J. Acoust. Soc. Am.*, **83**, 1876-1882.
- Rocca, F., Boero, D. L. & Lenti, C. (2001). Individual differences in the human infant cry in a comparative perspective. *Folia Primatol.*, **72**, 137.
- Roch, J. B., Comze, F., Eyraud, A. & Deubreuil, C. (1990). Synchronization of glottography and laryngeal stroboscopy. *Folia Phoniat.*, **43**, 53-59.
- Roederer, J. G. (1995). *The Physics and Psychophysics of Music*. Springer; New York.
- Rosen, S. (1992). Temporal information in speech: acoustic, auditory and linguistic aspects. *Phil. Trans. R. Soc. Lond. B.*, **336**, 367-373.
- Rothenberg, M. (1987). Così Fan Tutti and what it means, or nonlinear source-tract interaction in the soprano voice and some implications for the definition of vocal efficiency. In *Laryngeal Function in Phonation and Respiration* (T. Bear, C. Sasaki & K. Harris, eds.). College-Hill; Boston, pp. 254-269.
- Saito, N. & Maekawa, M. (1993). Birdsong: the interface with human language. *Brain Dev.*, **15**, 31-40.
- Sams, M., Hari, R., Rif, J. & Knuutila, J. (1993). The human auditory sensory memory trace persists about 10 sec: Neuromagnetic evidence. *J. Cogn. Neurosci.*, **5**, 363-370.
- Sander, K. & Scheich, H. (2001). Auditory perception of laughing and crying activates human amygdala regardless of attentional state. *Cogn. Brain Res.*, **12**, 181-198.
- Sataloff, R. T. (1992). The human voice. *Sci. Am.*, **dec.**, 64-71.
- Scheiner, E., Hammerschmidt, K., Juergens, U. & Zwirner, P. (2001). Expression of emotions in the preverbal vocalizations of infants. *Adv. Ethol.*, **36**, 259.
- Sinnott, J. M. & Brown, C. H. (1993). Effects of varying signal duration on pure-tone frequency discrimination in humans and monkeys. *J. Acoust. Soc. Am.*, **93**, 1541-1546.
- Sinnott, J. M. & Brown, C. H. (1993). Effects of varying signal and noise levels on pure-tone frequency discrimination in humans and monkeys. *J. Acoust. Soc. Am.*, **93**, 1535-1540.
- Sinnott, J. M. & Saporita, T. A. (2000). Differences in American English, Spanish, and monkey perception of the say-stay trading relation. *Percept. Psychophysics*, **62**, 1312-1319.
- Skirl, J. & Todt, D. (1996). Laughter in response to tickling: a comparative approach. *Bioacoustics*, **6**, 321-322.
- Snowdon, C. T. (1992). A comparative approach to language parallels. In *Tools, Language and Cognition in Human Evolution* (K. R. Gibson & T. Ingold, eds.). Cambridge University Press; Cambridge, pp. 109-128.
- Snowdon, C. T. (1997). Is speech special? Lessons from New World primates. In *New World Primates: Ecology, Evolution, and Behavior* (W. G. Kinzey, ed.). Walter de Gruyter; New York, pp. 75-93.
- Spence, M. J. & DeCasper, A. J. (1987). Prenatal experience with low frequency maternal voice sounds influences neonatal perception of maternal voice samples. *Infant Behav. Dev.*, **10**, 133-142.
- Standley, J. M. & Madsen, C. K. (1990). Comparison of infant preferences and responses to auditory stimuli: Music, mother, and other female voice. *J. Music Therapy*, **27**, 54-97.
- Steinecke, I. & Herzel, H. (1995). Bifurcations in an asymmetric vocal fold model. *J. Acoust. Soc. Am.*, **97**, 1874-1884.
- Steinschneider, M., Volkov, I. O., Noh, M. D., Garell, P. C. & Howard III, M. A. (1999). Temporal encoding of the voice onset time phonetic parameter by field potentials recorded directly from human auditory cortex. *J. Neurophysiol.*, **82**, 2346-2357.
- Story, B. H. & Titze, I. R. (1995). Voice simulation with a body-cover model of the vocal folds. *J. Acoust. Soc. Am.*, **97**, 1249-1260.
- Stumpf, M. P. H. (2001). Language's place in nature. *Trends Ecol. Evol.*, **16**, 475-476.
- Subtelný, J., Whitehead, W. L. R. & Subtelný, J. D. (1989). Cephalometric and cineradiographic study of deviant resonance in hearing impaired speakers. *J. Speech Hear. Disord.*, **54**, 249-263.
- Tanenhaus, M. K., Spivey-Knowlton, M. J., Eberhard, K. M. & Sedivy, J. C. (1995). Integration of visual and linguistic information in spoken language comprehension. *Science*, **268**, 1632-1634.
- Tembrock, G. (1996). Communication by falsetto. *Bioacoustics*, **6**, 309.
- Tiedemann, M. W. (2000). The song of the Neanderthal. *Nature*, **404**, 127-128.
- Tigges, M., Mergell, P., Herzel, H., Wittenberg, T. & Eysholdt, U. (1997). Observation and modelling of glottal biphonation. *Acustica*, **83**, 707-714.
- Titze, I. R. (1994). *Principles of Voice Production*. Prentice-Hall; Englewood Cliffs, N.J., USA.
- Titze, I. R., Baken, R. & Herzel, H. (1993). Evidence of chaos in vocal fold vibration. In *Vocal Fold Physiology. New Frontiers in Basic Science* (I. R. Titze, ed.). Singular Publishing Group; San Diego, pp. 143-188.
- Todt, D. (1996). The dynamic of crying and its interactional role: phasic versus tonic components. In *Social and Biological Aspects of Infant Crying* (B. Lester, J. D. Newman & F. Pederson, eds.). Plenum Press; New York.

- Todt, D. & Hultsch, H. (1994). Biological determinants of the dialogue. In *Kommunikation und Humanontogenese* (K. F. Wessel & F. Naumann, eds.). Kleine Verlag; Bielefeld, pp. 53-76 (German).
- Troup, G. J. (1989). The vocal tract as a resonator: X-ray studies of wind-instrument players and singers. *J. Acoust. Soc. India*, **17**, 20-24.
- Varas, B. E. & Watson, C. S. (1989). Perception of complex auditory patterns by human. In *The Comparative Psychology of Audition, Perceiving Complex Sounds* (R. J. Dooling & S. H. Hulse, eds.). Lawrence Erlbaum Associates, Publishers; Hillsdale, N. J., pp. 67-94.
- Vasama, J.-P. & Maekelae, J. P. (1995). Auditory pathway plasticity in adult humans after unilateral idiopathic sudden sensorineural hearing loss. *Hear. Res.*, **87**, 132-140.
- Ward, C. D. & Cooper, R. P. (1999). A lack of evidence in 4-month-old human infants for paternal voice preference. *Dev. Psychobiol.*, **35**, 49-59.
- Weisman, R., Njegovan, M., Sturdy, C., Phillmore, L., Coyle, J. & Mewhort, D. (1998). Frequency-range discriminations: Special and general abilities in zebra finches (*Taeniopygia guttata*) and humans (*Homo sapiens*). *J. Comp. Psychol.*, **112**, 244-257.
- Weisman, R., Njegovan, M. & Ito, S. (1994). Frequency ratio discrimination by zebra finches *Taeniopygia guttata* and humans *Homo sapiens*. *J. Comp. Psychol.*, **108**, 363-372.
- Weisman, R., Brownlie, L., Olthof, A., Njegovan, M., Sturdy, C. & Mewhort, D. (1999). Timing and classifying brief acoustic stimuli by songbirds and humans. *J. Exp. Psychol., Anim. Behav. Proc.*, **25**, 139-152.
- Wick, R. (1994). Acoustic analyses on the vocal development of the human infant during the first year of life. *Bioacoustics*, **6**, 72.
- Wiegrefe, L., Koessl, M. & Schmidt, S. (1995). Auditory sensitization during the perception of acoustical negative afterimages: Analogies to visual processing? *Naturwissenschaften*, **82**, 387-389.
- Wilhelms-Tricarico, R. (1995). Physiological modeling of speech production: Methods for modeling soft-tissue articulators. *J. Acoust. Soc. Am.*, **97**, 3085-3098.
- Young, E. D. (1998). What's the best sound? *Science*, **280**, 1402-1403.
- Zatorre, R. J., Perry, D. W., Beckett, C. A., Westbury, C. F. & Evans, A. C. (1998). Functional anatomy of musical processing in listeners with absolute pitch and relative pitch. *Proc. Natl. Acad. Sci. USA*, **95**, 3172-3177.
- Zeifman, D. M. (2001). An ethological analysis of human infant crying: Answering Tinbergen's four questions. *Dev. Psychobiol.*, **39**, 265-285.
- Zemlin, W. R. (1988). *Speech and Hearing Science*. Prentice-Hall; New Jersey.
- Zeng, F.-G. & Shannon, R. V. (1994). Loudness-coding mechanisms inferred from electric stimulation of the human auditory system. *Science*, **264**, 564-566.

GENERAL

- Altschuler, R. A., Bobbin, R. P., Clopton, B. M. & Hoffman, D. W., eds. (1991). *Neurobiology of Hearing: the Central Auditory System*. Raven Press; New York.
- Amundin, M. (1998). Sound production and hearing in marine animals. *Bioacoustics*, **9**, 213-214.
- Andersson, S. & McGregor, P. K. (1999). Animal communication: what is the signal to noise ratio? *Trends Ecol. Evol.*, **14**, 174-175.
- Arad, N., Schwartz, E. L., Wollberg, Z. & Yeshurun, Y. (1994). Acoustic binaural correspondence used for localization of natural acoustic signals. *Neural Networks*, **7**, 441-447.
- Arak, A. & Enquist, M. (1993). Hidden preferences and the evolution of signals. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 207-213.
- Au, W. W. L. (1997). Some hot topics in animal bioacoustics. *J. Acoust. Soc. Am.*, **101**, 2433-2441.
- Bagla, P. (1999). Behaviorists listen in as animals call and croak. *Science*, **285**, 1480-1481.
- Balaban, E. (1994). Sex differences in sounds and their causes. In *The Difference Between the Sexes* (R. V. Short and E. Balaban, eds.). Cambridge University Press; Cambridge, pp. 243-272.
- Bennet-Clark, H. C. (1999). Which Qs to choose: Questions of quality in bioacoustics? *Bioacoustics*, **9**, 351-359.
- Bergstrom, C. T. & Lachmann, M. (1997). Signalling among relatives. I. Is costly signalling too costly. *Phil. Trans. Roy. Soc. Lond. B.*, **352**, 609-617.
- Bergstrom, C. T. & Lachmann, M. (2001). Alarm calls as costly signals of antipredator vigilance: the watchful babbler game. *Anim. Behav.*, **61**, 535-543.
- Bergstrom, C. T. & Lachmann, M. (1998). Signalling among relatives. III. Talk is cheap. *Proc. Natl. Acad. Sci. USA*, **95**, 5100-5105.
- Blumberg, M. S. & Albert, J. R. (1992). Functions and effects in animal communication: reactions to Guilford & Dawkins. *Anim. Behav.*, **44**, 382-383.

- Bolhuis, J. J. & Macphail, E. M. (2001). A critique of the neuroecology of learning and memory. *Trends Cogn. Sci.*, **5**, 426-433.
- Bradbury, J., Budney, G. F., Stemple, D. W. & Kroodsma, D. E. (1999). Organizing and archiving private collections of tape recordings. *Anim. Behav.*, **57**, 1343-1344.
- Bradbury, J. W. & Vehrencamp, S. L. (2000). Economic models of animal communication. *Anim. Behav.*, **59**, 259-268.
- Bradbury, J. W. & Vehrencamp, S. L. (1998). *Principles of Animal Communication*. Sinauer; Sunderland, Mass.
- Bregman, A. S. (1990). *Auditory Scene Analysis: The Perceptual Organization of Sound*. MIT Press; Cambridge, Mass.
- Brown, T. J. & Handford, P. (2000). Sound design for vocalizations: quality in the woods, consistency in the fields. *Condor*, **102**, 81-92.
- Butlin, R. K., Guilford, T. & Krebs, J. R., eds. (1993). The evolution and design of animal signalling systems. *Philos. Trans. R. Soc. Lond. B.*, **340**, 161-255.
- Carr, C. E. (1993). Processing of temporal information in the brain. *Ann. Rev. Neurosci.*, **16**, 223-243.
- Changizi, M. A. (2001). Universal scaling laws for hierarchical complexity in languages, organisms, behaviors and other combinatorial systems. *J. Theor. Biol.*, **211**, 277-295.
- Dallos, P., Popper, A. N. & Fay, R. R., eds. (1996). *The Cochlea*. Springer-Verlag; New York.
- Davis, R. O. (1991). Semantical communication in antipredator alarm calls. In *Natural History of Eastern California and High-altitude Research* (C. A. Hall, Jr., V. Doyle-Jones & B. Widawski, eds.). University of California, White Mountain Research Station; Los Angeles, pp. 275-312.
- Dawkins, M. S. & Guilford, T. (1997). Conspicuousness and diversity in animal signals. *Perspectives in Ethology*, **12**, 55-72.
- Dawkins, M. S. & Guilford, T. (1997). The corruption of honest signalling. *Anim. Behav.*, **41**, 865-873.
- Dawkins, M. S. (1993). Are there general principles of signal design? *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 251-255.
- Dawkins, M. S. & Guilford, T. (1991). The corruption of honest signalling. *Anim. Behav.*, **41**, 865-874.
- Duncker, H.-R. (2001). The emergence of macroscopic complexity: An outline of the history of the respiratory apparatus of vertebrates from diffusion to language production. *Zoology (Jena)*, **103**, 240-259.
- Eatoock, R. A. (2000). Adaptation in hair cells. *Annu. Rev. Neurosci.*, **23**, 285-314.
- Edelman, G. M., Gall, W. E. & Cowan, W. M., eds. (1988). *Auditory Function: Neurobiological Bases of Hearing*. John Wiley & Sons; New York.
- Ehret, G. (1987). Categorical perception of sound signals: facts and hypotheses from animal studies. In *Categorical Perception* (S. Harnad, ed.). Cambridge University Press; Cambridge, pp. 301-331.
- Ehret, G. (1986). Categorical perception of sound signals: fact and hypotheses from animal studies. In *Categorical perception. The groundwork of cognition* (S. Harnad, ed.). Cambridge University Press; New York, pp. 301-331.
- El-Masri, S., Pelorson, X., Saguet, P. & Badin, P. (1998). Development of the transmission line matrix method in acoustics applications to higher modes in the vocal tract and other complex ducts. *Int. J. Num. Modell.*, **11**, 133-151.
- Endler, J. A. (1993). Some general comments on the evolution and design of animal communication systems. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 215-225.
- Espmark, Y., Amundsen, T. & Rosenqvist, G., eds. (2000). *Animal Signals. Signalling and Signal Design in Animal Communication*. Tapir Academic Press; Trondheim, Norway.
- Evans, C. S. & Marler, P. (1995). Language and animal communication: parallels and contrasts. In *Comparative Approaches to Cognitive Science* (H. Roitblat and J. Arcady-Meyer, eds.). MIT Press; Cambridge, Massachusetts, pp. 341-382.
- Fay, R. R. (1988). *Hearing in Vertebrates. A Psychophysics Databook*. Hill-Fay Associates; Winnetka, Illinois.
- Fay, R. & Popper, A. (2000). Evolution of hearing in vertebrates: the inner ears and processing. *Hear. Res.*, **149**, 1-10.
- Fekete, D. M. (1999). Development of the vertebrate ear: insights from knockouts and mutants. *Trends Neurosci.*, **22**, 263-269.
- Felgate, N. J. & Lloyd, L. J. (1998). The sea animal noise database system (SANDS). *Bioacoustics*, **9**, 215.
- Firn, R. D. & Jones, C. G. (1995). Plants may talk, but can they hear? *Trends Ecol. Evol.*, **10**, 371.
- Fletcher, N. (1997). Sound in the animal world. *Acoustics Austr.*, **25**, 69-74.
- Fletcher, N. H. (1992). *Acoustic Systems in Biology*. Oxford University Press, Inc.; Oxford.
- Forrest, T. G. (1994). From sender to receiver: propagation and environmental effects on acoustic signals. *Am. Zool.*, **34**, 644-654.
- Forrest, T. G., Miller, G. L. & Zagar, J. R. (1993). Sound propagation in shallow water: implications for acoustic communication by aquatic animals. *Bioacoustics*, **4**, 259-270.
- Freeberg, T. M. (2000). Culture and courtship in vertebrates: a review of social learning and transmission of

- courtship systems and mating patterns. *Behav. Process.*, **51**, 177-192.
- Frijns, J. H. M., de Snoo, S. L. & Schoonhoven, R. (1995). Potential distributions and neural excitation patterns in a rotationally symmetric model of the electrically stimulated cochlea. *Hear. Res.*, **87**, 170-186.
- Fristrup, K. & Watkins, W. A. (1994). Marine animal sound classification. *Tech. Report. WHOI-94-13*.
- Frommolt, K.-H. (1994). The animal sound archive of the Humboldt University of Berlin. *Bioacoustics*, **6**, 72-73.
- Furlow, F. B. (1997). Neurodevelopmental integrity and Zahavian bioacoustics. *Trends Ecol. Evol.*, **12**, 34.
- Furlow, B. (2000). The uses of crying and begging. *Natural History*, **10/2000**, 62-67.
- Geistdoerfer, P. (1998). Sound utterances by marine animals. *Bull. Soc. Zool. France*, **123**, 293-304 (French).
- Gerhardt, H. C. (1992). Multiple messages in acoustic signals. *Semin. Neurosci.*, **4**, 391-400.
- Gitter, A. H. & Klinke, R. (1989). The energy thresholds of eye and ear in a contemporary view. *Naturwissenschaften*, **76**, 160-164 (German).
- Goodson, J. L. & Bass, A. H. (2001). Shared functional circuitry of forebrain and midbrain vocal-acoustic complexes across vertebrates. *Soc. Neurosci. Abstr.*, **27**, 240.
- Grafen, A. (1990). Biological signals as handicaps. *J. Theor. Biol.*, **144**, 517-546.
- Grafen, A. & Johnstone, R. A. (1993). Why we need ESS signalling theory. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 245-250.
- Greenfield, M. D. (1994). Cooperation and conflict in the evolution of signal interactions. *Annu. Rev. Ecol. Syst.*, **25**, 97-126.
- Guilford, T. & Dawkins, M. S. (1992). Understanding signal design: a reply to Blumberg & Alberts. *Anim. Behav.*, **44**, 384-385.
- Guilford, T. & Dawkins, M. S. (1995). What are conventional signals? *Anim. Behav.*, **49**, 1589-1695.
- Hall, D. E. (1987). *Basic Acoustics*. John Wiley & Sons; New York.
- Handel, S. (1989). *Listening: An Introduction to the Perception of Auditory Events*. MIT Press; Cambridge, Mass.
- Hassal, J. R. & Zaveri, K. (1988). *Acoustic noise measurements*. Larsen; Glostrup.
- Hausberger, M. (1993). How studies on vocal communication in birds contribute to a comparative approach to cognition. *Ethologia*, **3**, 171-185.
- Hausberger, M. & Henry, L. (2001). Vocal sharing and social identity. *Adv. Ethol.*, **36**, 32.
- Hauser, M. D. & Konishi, M. (eds). (1999). *The Design of Animal Communication*. Bradford/MIT Press; Cambridge, MA.
- Hauser, M. D. (1996). *The Evolution of Communication*. MIT Bradford Books; Cambridge, Massachusetts.
- Heathershaw, A. D., Ward, P. D., Jones S. A. S. & Rogers, R. (1998). Understanding the impact of sonars on the marine environment. *Bioacoustics*, **9**, 218.
- Heffner, H. E. (1998). Auditory awareness. *Appl. Anim. Behav. Sci.*, **57**, 259-268.
- Hopp, S. L., Owren, M. J. & Evans, C. S., eds. (1998). *Animal Acoustic Communication: Sound Analysis and Research Methods*. Springer-Verlag; Berlin.
- Hopp, S. L., Owren, M. & Evans, C. S., eds. (1996). *Acoustic Communication in Animals*. Heidelberg.
- Houston, A. I. & McNamara, J. M. (1987). Singing to attract a mate: a stochastic dynamic game. *J. Theor. Biol.*, **129**, 57-68.
- Hubner, R. & Hafter, E. R. (1995). Cueing mechanisms in auditory signal detection. *Perception and Psychophysics*, **57**, 197-202.
- Hulse, S. H. (1995). The discrimination-transfer procedure for studying auditory perception and perceptual invariance in animals. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay and W. C. Stebbins, eds.). Birkhaeuser Verlag; Basel, pp. 319-330.
- Johnson, J. S. & Spikes, C. H. (1998). U.S. Navy Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) - protecting the marine environment in system deployment. *Bioacoustics*, **9**, 219.
- Johnstone, R. A. (2000). Conflicts of interest in signal evolution. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, pp. 465-485.
- Johnstone, R. A. (1997). The evolution of animal signals. In *Behavioural Ecology. An Evolutionary Approach. 4th Edition* (J. R. Krebs and N. B. Davies, eds.). Blackwell; Oxford, pp. 155-178.
- Kalveram, K. T. (1997). On the evolution of the capability to experience annoyance: Behavioral-ecological considerations of the effects of acoustical noise. *J. Acoust. Soc. Am.*, **101**, 3058.
- Kempf, N. & Hueppop, O. (1996). The effects of aircraft noise on wildlife: a review and comment. *J. Ornithol.*, **137**, 101-113 (German).
- Kettle, R. (1994). About the journal *Bioacoustics*. *Bioacoustics*, **6**, 73.
- Kilner, R. & Johnstone, R. A. (1997). Begging the question: Are offspring solicitation behaviours signals of need? *Trends Ecol. Evol.*, **12**, 11-15.

- Klump, G. & Langemann, U. (1997). Acoustic communication in the noisy real world. *Adv. Ethol.*, **32**, 22.
- Koessl, M. (1997). Sound emission from cochlear filters and foveae - Does the auditory sense organ make sense? *Naturwissenschaften*, **84**, 9-16.
- Kollmar, R. (1999). Who does the hair cell's do? Rho GTPases and hair-bundle morphogenesis. *Curr. Opin. Neurobiol.*, **9**, 394-398.
- Krebs, J. (1991). Animal communication: Ideas derived from Tinbergen's activities. In *The Tinbergen Legacy* (M. Dawkins, T. Halliday and R. Dawkins, eds.). Chapman and Hall; London, pp. 60-74.
- Kuhl, P. K. (1987). The special-mechanisms debate in speech research: categorization tests on animals and infants. In *Categorical Perception* (S. Harnad, ed.). Cambridge University press; Cambridge, pp. 355-386.
- Kuwada, S. & Yin, T. C. T. (1987). Physiological studies of directional hearing. In *Directional Hearing* (W. A. Yost & G. Gourevitch, eds.). Springer-Verlag; New York, pp. 146-176.
- Lachmann, M. & Bergstrom, C. T. (1998). Signalling among relatives. II. Beyond the Tower of Babel. *Theor. Popul. Biol.*, **54**, 146-160.
- Lashkari, K. & Lowder, S. (1998). Ocean acoustic observatory for passive monitoring of the ocean. *Bioacoustics*, **9**, 221-222.
- Lewicki, M. S. (2002). Efficient coding of natural sounds. *Nature Neurosci.*, **5**, 356-363.
- Marler, P., Evans, C. S. & Hauser, M. D. (1992). Animal signals: Motivational, referential, or both? In *Nonverbal Vocal Communication: Comparative and Developmental Approaches* (H. Papousek, U. Juergens & M. Papousek, eds.). Cambridge University Press; Cambridge, pp. 66-86.
- McConnell, P. B. (1991). Lessons from animal trainers: the effect of acoustic structure on an animal's response. In *Perspectives in Ethology. Vol. 9: Human Understanding and Animal Awareness* (P. Bateson and P. Klopfer, eds.). Plenum; New York, pp. 165-187.
- McGregor, P. K. & Peake, T. M. (2000). Communication networks: social environments for receiving and signalling behaviour. *Acta Ethol.*, **2**, 71-81.
- McGregor, P. K., Otter, K. & Peake, T. M. (2000). Communication networks: Receiver and signaller perspectives. In *Animal Signals. Signalling and Signal Design in Animal Communication* (Y. Espmark, T. Amundsen and G. Rosenqvist, eds.). Tapir Academic Press; Trondheim, pp. 329-340.
- McGregor, P. K. (1993). Signalling in territorial systems: a context for individual identification, ranging and eavesdropping. *Philos. Trans. R. Soc. Lond. B. Biol. Sci.*, **340**, 237-244.
- McKean, K. A. & Zuk, M. (1995). An evolutionary perspective on signaling in behavior and immunology. *Naturwissenschaften*, **82**, 509-516.
- Melnick, B. & Weisenberger, J. (1993). Proceedings of the symposium of the committee on hearing, *Bioacoustics*, and biomechanics (CHABA) of the National Research Council (June 1-2, 1992). *Ear Hear.*, **14**, 1-2.
- Mergell, P., Fitch, W. T. & Herzog, H. (1999). Modeling the role of nonhuman vocal membranes in phonation. *J. Acoust. Soc. Am.*, **105**, 2020-2028.
- Moore, B. C. J. (1989). *An Introduction to the Psychology of Hearing. 3rd edn.* Academic Press; New York.
- Morton, E. S. (1994). Sound symbolism and its role in non-human vertebrate communication. In *Sound Symbolism* (L. Hinton, J. Ohala and J. Nichols, eds.). Cambridge University Press; Cambridge, pp. 348-365.
- Morton, E. S. & Page, J. (1992). *Animal Talk, Science and The Voices of Nature.* Random House; New York.
- Naguib, M. & Wiley, R. H. (2001). The influence of habitat acoustics on the evolution of long range signaling. *Adv. Ethol.*, **36**, 97.
- Naguib, M. & Wiley, R. H. (2001). Estimating the distance to a source of sound: mechanisms and adaptations for long-range communication. *Anim. Behav.*, **62**, 825-837.
- Nelson, D. A. & Gaunt, S. L. L. (1997). Borror Laboratory of Bioacoustics (BLB) and the bioacoustics research group at the Ohio State University. *Bioacoustics*, **8**, 281-286.
- Newman, J. A. & Caraco, T. (1989). Co-operative and non-cooperative bases of food-calling. *J. Theor. Biol.*, **141**, 197-209.
- Nottebohm, F. (2002). Neuronal replacement in adult brain. *Brain Res. Bull.*, **57**, 737-749.
- Okanoya, K. & Dooling, R. J. (1988). Obtaining acoustic similarity measures from animals: A method for species comparisons. *J. Acoust. Soc. Am.*, **83**, 1690-1693.
- Owings, D. H., Beecher, M. D. & Thompson, N. S., eds. (1997). *Communication. Perspectives in Ethology, Vol. 12.* Plenum; New York.
- Owings, D. H. & Morton, E. S. (1998). *Animal Vocal Communication: A New Approach.* Cambridge University Press; Cambridge.
- Paillette, M. (1998). Dialects in animals: Causes and consequences. *Bull. Soc. Zool. France*, **123**, 217-230 (French).
- Papousek, H., Papousek, M. & Juergens, U., eds. (1992). *Nonverbal Vocal Communication.* Cambridge

University Press.

- Payne, R. J. H. & Rodriguez-Girones, M. A. (1998). The origins of parent-offspring signalling. *J. Theor. Biol.*, **195**, 273-280.
- Pepperberg, I. M. (1990). Learning to communicate: the effects of social interaction. In *Perspectives in Ethology, Vol. 9* (P. Bateson & P. H. Klopfer, eds.). Plenum; New York, pp. 119-164.
- Picklers, J. O. (1988). *An Introduction to the Physiology of Hearing*. Academic Press; London.
- Pierce, A. D. (1989). *Acoustics: An Introduction to its Physical Principles and Applications*. Acoustical Society of America; Woodbury, N.Y.
- Piercy, J. E. & Daigle, G. A. (1991). Sound propagation in the open air. In *Handbook of Acoustical Measurements and Noise Control* (C. M. Harris, ed.). McGraw-Hill; New York, pp. 3.1-3.26.
- Pollack, G. S. (2001). Analysis of temporal patterns of communication signals. *Curr. Opin. Neurobiol.*, **11**, 734-738.
- Popper, A. N., Platt, C. & Edds, P. (1992). Evolution of the vertebrate inner ear: An overview of ideas. In *Comparative Evolutionary Biology of Hearing* (D. B. Webster, R. R. Fay & A. N. Popper, eds.). Springer Verlag; New York, pp. 49-57.
- Popper, A. N. & Dooling, R. J. (1996). Comparative and evolutionary biology of hearing at the University of Maryland, College Park, USA. *Bioacoustics*, **7**, 45-51.
- Price, M. A. (1988). Sound attenuation through trees: measurements and models. *J. Acoust. Soc. Am.*, **84**, 1836-1844.
- Ptacek, M. B. (2000). The role of mating preferences in shaping interspecific divergence in mating signals in vertebrates. *Behav. Process.*, **51**, 111-134.
- Rabin, L. A. & Greene, C. M. (2002). Changes to acoustic communication systems in human-altered environments. *J. Comp. Psychol.*, **116**, 137-141.
- Ranft, R. (1998). Bioacoustic recordings at the British Library National Sound Archive: new methods for storage and access. *Bioacoustics*, **9**, 162.
- Ranft, R. (1997). The wildlife section of the British Library National Sound Archive (NSA). *Bioacoustics*, **7**, 315-319.
- Ranft, R. (1997). Sound libraries have biodiversity taped. *Bioacoustics*, **8**, 249-250.
- Ranft, R. (1993). Sound recording of oriental birds. *Orient. Bird Club Bull.*, **17**, 22-27.
- Ranft, R. (1994). Using the National Sound Archive wildlife collections in bioacoustic research. *Bioacoustics*, **6**, 73.
- Reed, M. C. & Blum, J. J. (1995). A computational model for signal processing by the dorsal cochlear nucleus. I. Responses to pure tones. *J. Acoust. Soc. Am.*, **97**, 425-438.
- Rogers, P. H. & Cox, M. (1988). Underwater sound as a biological stimulus. In *Sensory Biology of Aquatic Animals* (J. Atema, ed.). Wiley; New York, pp. 131-149.
- Rogers, L. J. & Kaplan, G. (1999). *Not Only Roars and Rituals. Communication in Animals*. Allen Unwin; London.
- Romond, R., ed. (1992). *Development of Auditory and Vestibular System*. Elsevier, B. V.
- Rossing, T. D. (1989). *The Science of Sound*. Addison-Wesley; New York.
- Rountree, R. A., Perkins, P. J., Kenney, R. D. & Hinga, K. R. (2002). Sounds of western North Atlantic fishes - data rescue. *Bioacoustics*, **12**, 242-244.
- Rubel, E. W. & Fritzsche, B. (2002). Auditory system development: Primatory auditory neurons and their targets. *Annu. Rev. Neurosci.*, **25**, 51-101.
- Ryan, M. J. & Getz, W. (2000). Signal decoding and receiver evolution. *Brain Behav. Evol.*, **56**, 45-62.
- Ryan, M. J. (1988). Energy, calling and selection. *Am. Zool.*, **28**, 885-898.
- Schreiner, C. E., Read, H. L. & Sutter, M. L. (2000). Modular organization of frequency integration in primary auditory cortex. *Annu. Rev. Neurosci.*, **23**, 501-529.
- Silk, J. B., Kaldor, E. & Boyd, R. (2000). Cheap talk when interests conflict. *Anim. Behav.*, **59**, 423-432.
- Skoyles, J. & Fitch, W. T. (2000). Without breath and without song? *Trends Cogn. Sci.*, **4**, 405-406.
- Smith, R. J. F. (1986). Evolution of alarm signals: role of benefits of retaining group members or territorial neighbors. *Am. Nat.*, **128**, 604-610.
- Smith, W. J. (1994). Animal duets: forcing a mate to be attentive. *J. Theor. Biol.*, **166**, 221-223.
- Smith, W. J. (1998). Cognitive implications of an information-sharing model of animal communication. In *Animal Cognition in Nature. The Convergence of Psychology and Biology in Laboratory and Field* (R. P. Balda, I. M. Pepperberg and A. C. Kamil, eds.). Academic Press; San Diego, pp. 227-243.
- Snowdon, C. T. (1988). A comparative approach to vocal communication. In *Comparative Perspectives in Modern Psychology. Nebraska Symposium on Motivation, 1987* (D. W. Leger, ed.). University of Nebraska Press; Lincoln, NE, pp. 145-199.
- Snowdon, C. T. & Hausberger, M., eds. (1997). *Social Influences on Vocal Development*. Cambridge University Press; Cambridge.

- Spector, D. A. (1994). Definition in biology: The case of "bird song". *J. Theor. Biol.*, **168**, 373-381.
- Syka, J. & Masterton, R. B., eds. (1988). *Auditory Pathway, Structure and Function*. Plenum Press; New York.
- Tang-Martinez, Z. (2001). The mechanisms of kin discrimination and the evolution of kin recognition in vertebrates: a critical re-evaluation. *Behav. Process.*, **53**, 21-40.
- Tavolga, W. N. (1996). How I got started in bioacoustics. *Bioacoustics*, **6**, 281-286.
- Tyack, P. (1993). Why ethology is necessary for the comparative study of language and communication. In *Language and Communication: Comparative Perspectives* (H. L. Roitblat, L. M. Herman & P. Nachtigall, eds.). Erlbaum; Hillsdale, N. J., pp. 115-152.
- Ujhelyi, M. (1996). Is there any intermediate stage between animal communication and language? *J. Theor. Biol.*, **180**, 71-76.
- Vielliard, J. (1995). Phylogeny of bioacoustic parameters in birds. *Bioacoustics*, **6**, 171-174.
- Webster, D. B., Fay, R. R. & Popper, A. N., eds. (1992). *The Evolutionary Biology of Hearing*. Springer Verlag; New York.
- Webster, D. B., Fay, R. R. & Popper, A. N., eds. (1991). *The Evolutionary Biology of Hearing*. Springer Verlag; New York.
- Wickler, W. (1986). *Dialects in the animal world*. Schriftenreihe Wilhelms-Univ. Muenster n. F., **6**, 1-84.
- Wiley, R. H. (1994). Errors, exaggeration, and deception in animal communication. In *Behavioral Mechanisms in Ecology* (L. Real, ed.). Chicago University Press; Chicago, pp. 157-189.
- Yost, W. A. & Gourevitch, G. (eds.). (1987). *Directional Hearing*. Springer; New York.
- Yost, W. A. (1994). *Fundamentals of Hearing*. Academic Press; New York.
- Zenner, H. P. (1994). *Hearing*. Georg Thieme Verlag; Stuttgart, New York (German).
- Zuk, M. & Kolluru, G. R. (1998). Exploitation of sexual signals by predators and parasitoids. *Quart. Rev. Biol.*, **73**, 415-438.
-

TECHNIQUES

- Ahlen, I. & Baagoe, H. J. (1999). Use of ultrasound detectors for bat studies in Europe: experiences from field identification, surveys, and monitoring. *Acta Chiropterologica*, **1**, 137-150.
- Akamatsu, T., Narita, Y. & Matsu-Ura, T. (1998). Real-time click interval acquisition system for dolphin echolocation signals. *Bioacoustics*, **9**, 225.
- Akamatsu, T., Wang, D., Wang, K. & Naito, Y. (2000). A method for individual identification of echolocation signals in free-ranging finless porpoises carrying data loggers. *J. Acoust. Soc. Am.*, **108**, 1353-1356.
- Alkon, P. U., Cohen, Y. & Jordan, P. A. (1989). Towards an acoustic biotelemetry system for animal behavior studies. *J. Wildl. Manage.*, **53**, 658-662.
- Alonso-Pimentel, H. & Spangler, H. G. (1995). Female acoustic response in *Drosophila mettleri* (Diptera: Drosophilidae): A new recording technique to detect female sounds. *J. Insect Behav.*, **8**, 287-293.
- Altes, R. A. (1987). Bioacoustic systems: insights for acoustical imaging and pattern recognition. *Proc. SPIE (The International Society for Optical Engineering)*, **768**, 61-68.
- Andelt, W. F. & Hopper, S. N. (1996). Effectiveness of alarm-distress calls for frightening herons from a fish rearing facility. *Prog. Fish-Cult.*, **58**, 258-262.
- Andre, M., Larsen, H. H. & Gjerlov, P. (1996). A tool for the study of sperm whale underwater behaviour. *European Research on Cetaceans*, **9**, 42-45.
- Ashiya, T. & Nakagawa, M. (1993). A proposal of a recognition system for the species of birds receiving birdcalls: an application of recognition systems for environmental sound. *Ieice Trans. Fundam. Electron. Comm. Comput. Sci.*, **E76A**, 1858-1860.
- Assmann, P., Ballard, W., Bornstein, L. & Paschall, D. (1994). Track-Draw: A graphical interface for controlling the parameters of a speech synthesizer. *Behav. Res. Meth. Instr. Comput.*, **26**, 431-436.
- Au, W. W. L., Rasmussen, M. H. & Miller, L. (2000). Echolocation signals of wild white beaked dolphins measured with a four-hydrophone short base line array in real-time. *J. Acoust. Soc. Am.*, **108**, 2583.
- Au, W. W. L., Lammers, M. O. & Aubauer, R. (1999). A portable broadband data acquisition system for field studies in bioacoustics. *Mar. Mamm. Sci.*, **15**, 526-530.
- Aubauer, R., Lammers, M. O. & Au, W. W. L. (2000). One-hydrophone method of estimating distance and depth of phonating dolphins in shallow water. *J. Acoust. Soc. Am.*, **107**, 2744-2749.
- Aubauer, R. & Au, W. W. L. (1998). Phantom echo generation: A new technique for investigating dolphin echolocation. *J. Acoust. Soc. Am.*, **104**, 1165-1170.
- Aubin, T. (1996). New methods for recording low-amplitude signals. Application to the analysis of the courtship song of *Drosophila* genus. *Bioacoustics*, **6**, 297-298.
- Aubin, T., Rybak, F. & Moulin, B. (2000). A simple method for recording low-amplitude sounds. Application to

- the study of the courtship song of the fruit fly *Drosophila melanogaster*. *Bioacoustics*, **11**, 51-67.
- Aubin, T. (1994). SYNTANA: a software for the SYNThesis and ANALysis of animal sounds. *Bioacoustics*, **6**, 80-81.
- Bain, D. E. (1986). Acoustic behavior of *Orcinus*: sequences, periodicity, behavioral correlates, and an automated technique for call classification. In *Behavioral Biology of Killer Whales* (B. C. Kirkeveld & J. S. Lockard, eds.). Alan R. Liss, Inc.; New York, pp. 335-371.
- Baptista, L. F. (1994). Ethical issues involved in research with birds. *J. Ornithol.*, **135**, 519.
- Barclay, R. M. R. (1999). Bats are not birds - A cautionary note on using echolocation calls to identify bats: A comment. *J. Mammal.*, **80**, 290-296.
- Barshan, B. & Kuc, R. (1992). Bat-like mobile robot for tracking a moving obstacle. *Proc. SPIE (The International Society for Optical Engineering)*, **1613**, 46-57.
- Beeman, K. (1998). Digital signal analysis, editing and synthesis. In *Animal Acoustic Communication* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer; Berlin, pp. 59-103.
- Bennet-Clark, H. C. (1999). Which Qs to choose: Questions of quality in bioacoustics? *Bioacoustics*, **9**, 351-359.
- Bergmann, H.-H. & Tuellinghoff, R. (1988). Methodical contributions to bird song excursions for beginners. *Osnabruecker Naturwiss. Mitt.*, **14**, 223-232 (German)
- Berrow, S. D. (2000). The use of acoustics to monitor burrow-nesting white-chinned petrels *Procellaria aequinoctialis* at Bird Island, South Georgia. *Polar Biol.*, **23**, 575-579.
- Bertram, S. & Johnson, L. (1998). An electronic technique for monitoring the temporal aspects of acoustic signals of captive organisms. *Bioacoustics*, **9**, 107-118.
- Blomqvist, C., Amundin, M., Kroeling, O. & Gunnarsson, P. (1998). A new application to record and store directional, pulsed communication sounds in the bottlenose dolphin *Tursiops truncatus*. *Bioacoustics*, **9**, 159-160.
- Boehner, J. & Hammerschmidt, K. (1996). Computer-aided acoustic analysis of complex bird calls. *Bioacoustics*, **6**, 313-314.
- Bonacito, C., Costantini, M., Picciulin, M., Ferrero, E. A. & Hawkins, A. D. (2002). Passive hydrophone census of *Sciaena umbra* (Sciaenidae) in the Gulf of Trieste (Northern Adriatic Sea, Italy). *Bioacoustics*, **12**, 292-294.
- Booth, I. J. & Booth, K. H. V. (1993). Using neural nets to identify marine mammals. *Oceans '93*, **3**, 112-115.
- Bradbury, J., Budney, G. F., Stemple, D. W. & Kroodsmas, D. E. (1999). Organizing and archiving private collections of tape recordings. *Anim. Behav.*, **57**, 1343-1344.
- Bradbury, J. & Vehrencamp, S. L. (1994). SingIt! A program for interactive playback on the Macintosh. *Bioacoustics*, **5**, 308-310.
- Brensing, K., Linke, K. & Todt, D. (2001). Sound source location by difference of phase, on a hydrophone array with small dimensions. *J. Acoust. Soc. Am.*, **109**, 430-433.
- Brugge, J. F., Reale, R. A., Hind, J. E., Chan, J. C. K., Musicant, A. D. & Poon, P. W. F. (1994). Simulation of free-field sound sources and its application to studies of cortical mechanisms of sound localization in the cat. *Hear. Res.*, **73**, 67-84.
- Burt, J. M. (2000). Animal sound analysis and playback software: Building a software tool useful to field researchers. *J. Acoust. Soc. Am.*, **108**, 2582.
- Burt, J. M. (2000). Use of a radio microphone array to study banded wren song interactions at the neighborhood level. *J. Acoust. Soc. Am.*, **108**, 2583.
- Calladine, J., Buner, F. & Aebischer, N. J. (1999). Temporal variations in the singing activity and the detection of turtle doves *Streptopelia turtur*: Implications for surveys. *Bird Study*, **46**, 74-80.
- Calupca, T. A., Fristrup, K. M. & Clark, C. W. (2000). A compact digital recording system for autonomous bioacoustic monitoring. *J. Acoust. Soc. Am.*, **108**, 2582.
- Carlson, S. (1996). Recording nature's sounds. *Sci. Am.*, **Jan.**, 80-81.
- Carr, J. A., Cranford, T. W., van Bonn, W. G., Chaplin, M. S., Carder, D. A., Kamolnick, T. & Ridgway, S. H. (1998). Video endoscopy of the dolphin sonar signal generator. *Bioacoustics*, **9**, 155.
- Carr, C. E. & Konishi, M. (1990). A circuit for detection of interaural time differences in the brainstem of the barn owl. *J. Neurosci.*, **10**, 3227-3246.
- Catchpole, C. K. (1992). Integrating playback: a wider context. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed). Plenum press; New York, pp. 35-46.
- Cate, C. ten, Jones, A. E. & Bijleveld, C. C. J. H. (2001). The inter-observer reliability of scoring sonagrams by eye. *Adv. Ethol.*, **36**, 273-274.
- Cato, D. H. & Mccauley, R. D. (2000). Using one or two hydrophones for marine animal surveys. *J. Acoust. Soc. Am.*, **108**, 2539.
- Cato, D. H. (1998). Simple methods of estimating source levels and locations of marine animal sounds. *J. Acoust. Soc. Am.*, **104**, 1667-1678.
- Chapman, D. M. F. & Ellis, D. D. (1998). The elusive decibel: thoughts on sonars and marine mammals. *Canad.*

Acoustics, **26**, 29-31.

- Chappell, O. P., Leaper, R. & Gordon, J. (1996). Development of an automated harbour porpoise click detector. *European Research on Cetaceans*, **9**, 75-80.
- Clark, C. W., Croll, D. A., Acevedo, A. & Urban-Ramirez, J. (2000). Multi-modal surveys of fin whales in the Sea of Cortez, Mexico. *J. Acoust. Soc. Am.*, **108**, 2539.
- Clark, C. W. (1996). The application of US Navy underwater hydrophone arrays for scientific research on whales. *European Research on Cetaceans*, **9**, 7-9.
- Clark, C. W. & Ellison, W. T. (2000). Calibration and comparison of the acoustic location methods used during the spring migration of the bowhead whale, *Balaena mysticetus*, off Pt. Baroo, Alaska, 1984-1993. *J. Acoust. Soc. Am.*, **107**, 3509-3517.
- Cokl, A. (1988). Vibratory signal transmission in plants as measured by laser vibrometry. *Period. Biol.*, **90**, 193-196.
- Connaughton, M. A., Fine, M. L. & Taylor, M. H. (2002). Use of sound for localisation of spawning weakfish in Delaware Bay (USA) and effects of fish size, temperature and season on sound parameters. *Bioacoustics*, **12**, 294-296.
- Connelly, P. R., Woodward, B. & Goodson, A. D. (1998). A non-intrusive tracking technique for dolphins interacting with a pelagic trawl using a sparse array of hydrophones. *Bioacoustics*, **9**, 228.
- Connelly, P. R., Goodson, A. D. & Coggrave, C. R. (1998). Matlab modelling of shallow water sound fields to explain the aversive behaviour of a harbour porpoise. *Bioacoustics*, **9**, 227-228.
- Corben, C. (1989). Computer-based call analysis for microbat identification. *Macroderma*, **5**, 7.
- Cortopassi, K. A. & Bradbury, J. W. (2000). The comparison of harmonically rich sounds using spectrographic cross-correlation and principal coordinates analysis. *Bioacoustics*, **11**, 89-127.
- Coward, E. (1997). Equivalence of two Fourier methods for biological sequences. *J. Math. Biol.*, **36**, 64-70.
- Cunningham, R. B., Lindenmayer, D. B., Nix, H. A. & Lindenmayer, B. D. (1999). Quantifying observer heterogeneity in bird counts. *Aust. J. Ecol.*, **24**, 270-277.
- Cynx, J. & Clark, S. (1998). The laboratory use of conditional and natural responses in the study of avian auditory perception. In *Animal Acoustic Communication* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer-Verlag; Berlin, pp. 353-377.
- Dabelsteen, T., Larsen, O. N., Pedersen, S. B. & Holland, J. (1997). Quantifying sound degradation and predicting possibilities for ranging. *Adv. Ethol.*, **32**, 27.
- Dabelsteen, T. (1992). Interactive playback: a finely tuned response. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 97-110.
- Dabelsteen, T. & McGregor, P. K. (1996). Dynamic acoustic communication and interactive playback. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 398-408.
- Deecke, V. B., Ford, J. K. B. & Spong, P. (1999). Quantifying complex patterns of bioacoustic variation: Use of a neural network to compare killer whale (*Orcinus orca*) dialects. *J. Acoust. Soc. Am.*, **105**, 2499-2507.
- Deregnacourt, S., Guyomarc'h, J. & Richard, V. (2001). Classification of hybrid crows in quail using artificial neural networks. *Behav. Process.*, **56**, 103-112.
- Desjardins, R. N., Trainor, L. J., Hevenor, S. J. & Polak, C. P. (1999). Using mismatch negativity to measure auditory temporal resolution thresholds. *Neuroreport*, **10**, 2079-2082.
- Dooling, R. J. & Okanoya, K. (1995). The method of constant stimuli in testing auditory sensitivity in small birds. In *Methods in Comparative psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 155-164.
- Dror, I. E., Florer, F. L., Rios, D. & Zagaeski, M. (1996). Using artificial bat sonar neural networks for complex pattern recognition: recognizing faces and the speed of a moving target. *Biol. Cybern.*, **74**, 331-338.
- Dudzinski, K. M. & Newborough, D. (1998). Concurrent recording of dolphin behaviours, frequency-modulated tones, and pulsed vocalizations (including echolocation clicks) underwater with a swimmer-propelled system. *Bioacoustics*, **9**, 229.
- Duncan, A. J., Cato, D. H., Thomas, F. & Mccauley, R. D. (2000). The development of a compact instrument for the measurement of biological sea noise. *J. Acoust. Soc. Am.*, **108**, 2584.
- El-Masri, S., Pelorson, X., Saguet, P. & Badin, P. (1998). Development of the transmission line matrix method in acoustics applications to higher modes in the vocal tract and other complex ducts. *Int. J. Num. Modell.*, **11**, 133-151.
- Elsberry, W. R. (1998). WPLLOT: a utility for preparing bioacoustic data files for offline processing. *Bioacoustic*, **9**, 160.
- Engineering Design (1992). SIGNAL Software Manual. Engineering Design; Belmont.
- Erbe, C., King, A. R., Yedlin, M. & Farmer, D. M. (1999). Computer models for masked hearing experiments

- with beluga whales (*Delphinapterus leucas*). *J. Acoust. Soc. Am.*, **105**, 2967-2978.
- Erbe, C. (2000). Detection of whale calls in noise: performance comparison between a beluga whale, human listeners, and a neural network. *J. Acoust. Soc. Am.*, **108**, 297-303.
- Erbe, C. & Farmer, D. M. (2000). A software model to estimate zones of impact on marine mammals around anthropogenic noise. *J. Acoust. Soc. Am.*, **108**, 1327-1331.
- Evans, M. R. & Evans, J. A. (1994). A computer-based technique for the quantitative analysis of animal sounds. *Bioacoustics*, **5**, 281-290.
- Falls, J. B. (1992). Playback: A historical perspective. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 11-34.
- Fastl, H. (1993). A masking noise for speech intelligibility tests. *Proc. Acoust. Soc. Japan, Technical Committee Hearing*, **H93**, **70**, 1-6.
- Flint, J. A., Goodson, A. D. & Pomeroy, S. C. (1998). Visualising wave propagation in bio-acoustic lens structures using the transmission line modelling method. *Bioacoustics*, **9**, 216.
- Frommolt, K.-H. (1996). The Archive of Animal Sounds at the Humboldt-University of Berlin. *Bioacoustics*, **6**, 293-296.
- Frommolt, K.-H. (1993). The animal vocalization archive in the biological department of the Humboldt University in Berlin. *Berliner Orn. Ber.*, **3**, 6-8.
- Frommolt, K.-H. (1999). Sidebands - facts and artefacts. *Bioacoustics*, **10**, 219-224.
- Fujii, Y., Noguchi, M., Imamura, Y. & Tokoro, M. (1990). Using acoustic emission monitoring to detect termite activity in wood. *For. Prod. J.*, **40**, 34-36.
- Fushikida, K., Hiwatari, Y. & Waki, H. (2000). Visualized sound retrieval and categorization using a feature-based image search engine. *IEICE Trans. Inform. Syst.*, E83-D, 1978-1985.
- Fuzessery, Z. M., Gumtow, R. R. & Lane, R. (1991). A microcomputer-controlled system for use in auditory physiology. *J. Neurosci. Methods*, **36**, 45-52.
- Gaetz, W., Jantzen, K., Weinberg, H., Spong, P. & Symonds, H. (1993). A neural network method for recognition of individual *Orcinus orca* based on their acoustic behaviour: phase 1. *Oceans '93*, **1**, 455-457.
- Garamszegi, L. Z., Boulinier, T., Moeller, A. P., Toeroek, J., Michl, G. & Nichols, J. D. (2002). The estimation of size and change in composition of avian song repertoires. *Anim. Behav.*, **63**, 623-630.
- Gerhardt, H. C. (1992). Conducting playback experiments and interpreting their results. In *Playback Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, pp. 59-77.
- Gibbs, J. P. & Melvin, S. M. (1993). Call response surveys for monitoring breeding waterbirds. *J. Wildl. Manage.*, **57**, 27-34.
- Gilbert, F., Schuetze, H., Glahe, M. & Conrad, U. (1998). A simple hard- and software solution for generation and emission of high frequency signals. *Bioacoustics*, **9**, 161.
- Gilbert, G., McGregor, P. K. & Tyler, G. (1994). Vocal individuality as a census tool: Practical considerations illustrated by a study of two rare species. *J. Field Ornitol.*, **65**, 335-348.
- Gogala, M. (1998). Use of acoustic methods to find, locate and recognize singing cicadas in Slovenia, Croatia and Macedonia. *Bioacoustics*, **9**, 156.
- Gogala, M. & Popov, A. V. (1996). Bioacoustic survey of cicadas. *Bioacoustics*, **6**, 300-301.
- Goodson, A. D., Klinowska, M. & Bloom, P. R. S. (1994). Enhancing the acoustic detectability of gillnets. In *Cetaceans and Gillnets* (W. F. Perrin, G. P. Donovan & J. Barlow, eds.). *Rep. Int. Whal. Commn.*, (Spec. Iss. **15**), pp. 585-595.
- Goodson, A. D., Connelly, P. R. & Lepper, P. (1997). Aversive sounds and the harbour porpoise *Phocoena phocoena*. *Bioacoustics*, **8**, 261-262.
- Goodson, A. D., Newborough, D. & Woodward, B. (1997). Interactive deterrent devices for fishing nets, designed to reduce small cetacean bycatch. *Bioacoustics*, **8**, 272-273.
- Goodson, A. D. & Lepper, P. A. (1996). A simple hydrophone monitor for cetacean acoustics. *European Research on Cetaceans*, **9**, 46-49.
- Goodson, A. D. & Datta, S. (1992). Acoustic detection of fishing nets, the dolphin perspective. *Acoustic Letters*, **16**, 129-133.
- Goodson, A. D., Mayo, R. H., Klinowska, M. & Bloom, P. R. S. (1994). Field testing passive acoustic devices designed to reduce the entanglement of small cetaceans in fishing gear. In *Cetaceans and Gillnets* (W. F. Perrin, G. P. Donovan & J. Barlow, eds.). *Rep. Int. Whal. Commn.*, (Spec. Iss., **15**), pp. 597-606.
- Goold, J. C. (1996). Signal processing techniques for acoustic measurement of sperm whale body lengths. *J. Acoust. Soc. Am.*, **100**, 3431-3441.
- Gorzycza, M. & Hall, J. C. (1987). The INSECTAVOX, an integrated device for recording and amplifying courtship songs. *Drosophila Information Service*, **66**, 157-160.
- Gorman, R. P. & Sejnowski, T. J. (1988). Learned classification of sonar targets using a massively parallel network. *IEEE Transactions on Acoustics, Speech and Signal Processing*, **36**, 1135-1140.

- Grandin, T. (1998). The feasibility of using vocalization scoring as an indicator of poor welfare during cattle slaughter. *Appl. Anim. Behav. Sci.*, **56**, 121-128.
- Greene, C. R. (1998). Requirements and resources for instrumentation and software useful in animal bioacoustics. *Bioacoustics*, **9**, 154-155.
- Grohrock, P., Haeusler, U. & Juergens, U. (1997). Dual-channel telemetry system for recording vocalization-correlated neuronal activity in freely moving squirrel monkeys. *J. Neurosci. Methods*, **76**, 7-13.
- Groutage, D., Schempp, J. & Cohen, L. (1994). Characterization and analysis of marine mammal sounds using time-frequency and time-prony techniques. *Oceans '94*, **1**, 253-258.
- Hagstrum, D. W. & Flinn, P. W. (1993). Comparison of acoustical detection of several species of stored-grain beetles (Coleoptera, Curculionidae, Tenebrionidae, Bostrichidae, Cucujidae) over a range of temperatures. *J. Econ. Entomol.*, **86**, 1271-1278.
- Hagstrum, D. W. & Shuman, D. (1995). Automatic sample inspection and in-bin monitoring of stored-grain insects using acoustical sensors. In *Management of Grain, Bulk Commodities, and Bagged Products. Circular E-912 revised*. Oklahoma State University; Stillwater, pp. 207-209.
- Hagstrum, D. W., Flinn, P. W. & Shuman, D. (1996). Automated monitoring using acoustical sensors for insects in farm-stored wheat. *J. Econ. Entomol.*, **89**, 211-217.
- Hammer, O. & Barrett, N. (2001). Techniques for studying the spatio-temporal distribution of animal vocalizations in tropical wet forests. *Bioacoustics*, **12**, 21-35.
- Harland, E., Plowman, R. & Turnbull, M. (1996). Deployment of a sea-bed mounted hydrophone for cetacean monitoring. *European Research on Cetaceans*, **9**, 69-71.
- Harland, E. J. (1998). New technologies for marine mammal acoustic data capture. *Bioacoustics*, **9**, 221.
- Harland, E., Turnbull, M., Williams, R. & Copley, V. (1996). The Durlston cetacean monitoring project. *European Research on Cetaceans*, **9**, 89-91.
- Harland, E. & Lloyd, L. (1996). Minimising cetacean-induced false alarms in military sonars. *European Research on Cetaceans*, **9**, 72-74.
- Harrington, F. H. (1997). The utility of sound archives for readers of bioacoustic research papers. *Bioacoustics*, **7**, 241-242.
- Hawkins, A. D., Casaretto, L., Picciulin, M. & Olsen, K. (2002). Locating spawning haddock by means of sound. *Bioacoustics*, **12**, 284-286.
- Hayashi, T., Mori, H., Suzuki, M., Makino, S. & Aso, H. (2002). Speech recognition using acoustic similarity-based primitives. *Systems and Computers in Japan*, **33**, 8-17.
- Hayes, S. A., Mellinger, D. K., Croll, D. A., Costa, D. P. & Borsani, J. F. (2000). An inexpensive passive acoustic system for recording and localizing wild animal sounds. *J. Acoust. Soc. Am.*, **107**, 3552-3555.
- Hayes, J. P. (1997). Temporal variation in activity of bats and the design of echolocation-monitoring studies. *J. Mammal.*, **78**, 514-524.
- Hayward, T. J. (1998). Statistical characterisation and classification of marine mammal sounds by multiple-resolution encoding of training data distributions. *Bioacoustics*, **9**, 223-224.
- Heckenlively, D. B. (1986). Descriptive analysis of simulated bird songs. *Collegiate Microcomputer*, **4**, 193-199.
- Hirabayashi, K. & Ogawa, K.-I. (1999). The efficiency of artificial wingbeat sounds for capturing midges in black light traps. *Entomol. Exp. Appl.*, **92**, 233-238.
- Hoeller, P. (1995). A new method for audio-visual analyses of the echolocation behaviour of bats. *Z. Säugetierkd.*, **60** (Sonderheft), 29 (German).
- Hoffmann, R. & Westendorf, C.-M. (1997). The development of analysis methods for speech recognition. *Behav. Processes*, **39**, 113-125.
- Hopp, S. L. & Morton, E. S. (1998). Sound playback studies: design and analysis. In *Animal Acoustic Communication: Sound Analysis and Research Methods* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer-Verlag; Heidelberg, pp. 323-352.
- Horn, A. G. (1992). Field experiments on the perception of song types by birds: an overview. In *Playback and Studies of Animal Communication* (P. K. McGregor, ed.). Plenum Press; New York, pp. 191-200.
- Huang, X. & Buck, J. R. (2000). Autoregressive synthesis of bottlenose dolphin whistles. *J. Acoust. Soc. Am.*, **108**, 2636.
- Hultsch, H. (1992). Scientific documentation of acoustic signals in frequency spectrograms: how should sonograms be read? In *Lemurs in the zoo: current research results, species protection, prospects* (V. Ceska, H.-U. Hoffmann & K.-H. Winkelstraeter, eds). Verlag Paul Parey; Berlin, pp. 78-80 (German).
- Hunn, E. (1992). The use of sound recordings as voucher specimens and stimulus materials in ethnozoological research. *J. Ethnobiol.*, **12**, 187-198.
- Huynh, Q. Q., Cooper, L. N., Intrator, N. & Shouval, H. (1998). Classification of underwater mammals using feature extraction based on time-frequency analysis and BCM theory. *IEEE Trans. Signal Process.*, **46**, 1202-1207.
- Iannantuoni, M. (1998). Tascam DA-P1 portable dat recorder. *Bioacoustics*, **9**, 84-87.

- Ito, K. & Mori, K. (1999). Dynamic programming matching as a simulation of budgerigar contact call discrimination. *J. Acoust. Soc. Am.*, **105**, 552-559.
- Jackson, L. (1996). Sidebands - artefacts or facts? *Bioacoustics*, **7**, 163-164.
- Janata, P. (2001). Quantitative assessment of vocal development in the zebra finch using self-organizing neural networks. *J. Acoust. Soc. Am.*, **110**, 2593-2603.
- Janik, V. M. (1999). Pitfalls in the categorization of behaviour: a comparison of dolphin whistle classification methods. *Anim. Behav.*, **57**, 133-143.
- Janik, V. M., van Parijs, S. M. & Thompson, P. M. (2000). A two-dimensional acoustic localization system for marine mammals. *Mar. Mamm. Sci.*, **16**, 437-446.
- Johnson, M., Tyack, P., Nowacek, D. & Shorter, A. (2000). A digital acoustic recording tag for measuring the response of marine mammals to sound. *J. Acoust. Soc. Am.*, **108**, 2582.
- Jones, J. C., Di Meglio, A., Browne, R. & Wang, L. S. (1998). Design and development of a programmable underwater device for acoustic data recording and retrieval. *Bioacoustics*, **9**, 229-230.
- Jones, G. (1993). Some techniques for the detection, recording and analysis of echolocation calls from wild bats. *Proceedings of the first European Bat Detector Workshop* (K. Kapteyn, ed.). Netherlands Bat Research Foundation; Amsterdam.
- Jones, J. C., Browne, R. W., di Meglio, A. & Wang, L. S. (1997). Dolphin vocalisation analysis using an ADSP 21020. *IEEE Coll. DSP Chips Real Time Instr. Displ. Syst.*, **10**, 1-5.
- Jones, D. N. & Smith, G. C. (1997). Vocalisations of the marbled frogmouth. II: An assessment of vocal individuality as a potential census technique. *Emu*, **97**, 296-304.
- Jones, A. E., ten Cate, C. & Bijleveld, C. C. J. H. (2001). The interobserver reliability of scoring sonagrams by eye: a study on methods, illustrated on zebra finch songs. *Anim. Behav.*, **62**, 791-801.
- Kaiser, A. & Bauer, H.-G. (1994). Field experiments to determine the size of breeding populations by means of capture-recapture and visual/acoustical census methods. *Vogelwarte*, **37**, 206-231.
- Kammaing, G., Cohen Stuart, A. B. & de Bruin, M. G. (1998). A time-frequency entropy measure of uncertainty applied to dolphin echolocation signals. *Acoustics Lett.*, **21**, 155-160.
- Kearns, G. D., Kwartin, N. B., Brinker, D. F. & Haramis, G. M. (1998). Digital playback and improved trap design enhances capture of migrant soras and Virginia rails. *J. Field Ornithol.*, **69**, 466-473.
- Khanna, H., Gaunt, S. L. L. & McCallum, D. A. (1997). Digital spectrographic cross-correlation: Tests of sensitivity. *Bioacoustics*, **7**, 209-234.
- Klump, G. M. (1996). Sound localization studies in non-specialized birds. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser Verlag; Basel, pp. 221-233.
- Klump, G. M., Dooling, R. J., Fay, R. R. & Stebbins, W. C., eds. (1995). *Methods in Comparative Psychoacoustics*. Birkhaeuser Verlag; Basel.
- Knapp, D. J. & Pohorecky, L. A. (1995). An air-puff stimulus method for elicitation of ultrasonic vocalizations in rats. *J. Neurosci. Meth.*, **62**, 1-5.
- Kogan, J. A. & Margoliash, D. (1998). Automated recognition of bird song elements from continuous recordings using dynamic warping and hidden Markov models: a comparative study. *J. Acoust. Soc. Am.*, **103**, 2185-2196.
- Kremliovskiy, M., Kadtko, J., Inchiosa, M. & Moore, P. (1998). Characterization of dolphin acoustic echolocation data using a dynamical classification method. *Int. J. Bifurc. Chaos Appl. Sci. Eng.*, **8**, 813-823.
- Kroodsma, D. E. (1990). How the mismatch between the experimental design and the intended hypothesis limits confidence in knowledge, as illustrated by an example from bird-song dialects. In *Interpretation and Explanation in the Study of Animal Behavior* (M. Bekoff and D. Jamieson, eds.). Westview Press; Boulder, Colorado, pp. 226-245.
- Kroodsma, D. E., Budney, G. F., Grotke, R. W., Vielliard, J. M. E., Gaunt, S. L. L., Ranft, R. & Veprintseva, O. D. (1996). Natural sound archives: Guidance for recordists and a request for cooperation. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 474-486.
- Kroodsma, D. E., Byers, B. E., Goodale, E., Johnson, S. & Liu, W.-C. (2001). Pseudoreplication in playback experiments, revisited a decade later. *Anim. Behav.*, **61**, 1029-1033.
- Kuczynski, L. (2000). Recognition of individuals of ortolan bunting *Emberiza hortulana* using image processing procedures. *Biol. Bull. Poznan*, **37**, 107-112.
- Kuenzi, A. J. & Morrison, M. L. (1998). Detection of bats by mist-nets and ultrasonic sensors. *Wildl. Soc. Bull.*, **26**, 307-311.
- Lancaster, W. C., Keating, A. W. & Henson, O. W. Jr. (1992). Ultrasonic vocalizations of flying bats monitored by radiotelemetry. *J. Exp. Biol.*, **173**, 43-58.
- Larsen, O. N. (1996). CSC: The Danish Centre for Sound Communication. *Bioacoustics*, **6**, 287-292.

- Larsen, O. N. & Dabelsteen, T. (1997). The VIFA 1 NEODYMIUM TWEETER: a versatile speaker for playback experiments. *Bioacoustics*, **8**, 323-326.
- Lashkari, K. & Lowder, S. (1998). Ocean acoustic observatory for passive monitoring of the ocean. *Bioacoustics*, **9**, 221-222.
- Leaper, R., Chappell, O. & Gordon, J. C. D. (1992). The development of practical techniques for surveying sperm whale populations acoustically. *Rep. Int. Whal. Commn.*, **45**, 549-560.
- Leboucher, G., Kreutzer, M. & Dittami, J. (1994). Copulation-solicitation displays in female canaries (*Serinus canaria*): are oestradiol implants necessary? *Ethology*, **97**, 190-197.
- Legare, M. L., Eddleman, W. R., Buckley, P. A. & Kelly, C. (1999). The effectiveness of tape playback in estimating black rail density. *J. Wildlife Manage.*, **63**, 116-125.
- Lengagne, T., Lauga, J. & Jouventin, P. (1998). A method of independent time and frequency decomposition of bioacoustic signals: inter-individual recognition in four species of penguins. *C. R. Acad. Sci. Paris, Serie III*, **320**, 885-891.
- Lepper, P. A., Kaschner, K., Connelly, P. R. & Goodson, A. D. (1998). Development of a simplified ray path model for estimating the range and depth of vocalising marine mammals. *Bioacoustics*, **9**, 231-232.
- Lettevall, E., Ugarte, F. & Wahlberg, M. (1996). Inter-calibration of body length estimates of sperm whales. *European Research on Cetaceans*, **9**, 34-37.
- Lin, Z.-B., Chittajallu, S. K., Kayalar, S., Wong, D. & Yurtseven, H. O. (1991). Modeling constant best delay-sensitive neurons and tracking neurons in the auditory cortex of the FM bat with a back-propagation neural network. *IEEE Conf. Neur. Networks Ocean Engin.*, pp. 123-132.
- Lippmann, R. P. (1997). Speech recognition by machines and humans. *Speech Communication*, **22**, 1-15.
- Lobel, P. S. (2002). Diversity of fish spawning sounds and the application of passive acoustic monitoring. *Bioacoustics*, **12**, 286-289.
- Lobel, P. S. (2001). Fish bioacoustics and behaviour: Passive acoustic detection and the application of a closed-circuit rebreather for field study. *Mar. Tech. Soc. J.*, **35**.
- Luczkovich, J. J. & Sprague, M. W. (2002). Using passive acoustics to monitor estuarine fish populations. *Bioacoustics*, **12**, 289-291.
- Luczkovich, J. J., Sprague, M. W., Johnson, S. E. & Pullinger, R. C. (1999). Delimiting spawning areas of weakfish *Cynoscion regalis* (Family Sciaenidae) in Pamlico Sound, North Carolina, using passive hydroacoustic surveys. *Bioacoustics*, **10**, 143-160.
- Lukes, A. J., Lear, A. T. & Snider, R. K. (2001). Development of a wireless system for auditory neuroscience. *Biomed. Sci. Instrument.*, **37**, 119-124.
- Lynch, J. F. (1995). Effects of point count duration, time-of-day, and aural stimuli on detectability of migratory and resident bird species in Quintana Roo, Mexico. In *Monitoring Bird Populations by Point Counts* (C. J. Ralph, S. R. Sauer & S. Droege, eds.). Pacific SW For. Res. Stn. Gen. Tech. Rep. PSW-GTR-149, pp. 1-6.
- Manghi, M., Pavan, G., Priano, M. & Ghezzi, A. (1996). New opportunities in electronic distribution of information on bioacoustics. *Bioacoustics*, **6**, 317-318.
- Mankin, R. W. (1994). Acoustical detection of *Aedes taeniorhynchus* swarms and emergence exoduses in remote salt marshes. *J. Am. Mosq. Control. Assoc.*, **10**, 302-308.
- Mankin, R. W., Shuman, D. & Coffelt, J. A. (1996). Noise shielding of acoustic devices for insect detection. *J. Econ. Entomol.*, **89**, 1301-1308.
- Mann, D. A. & Tucker, T. J. (2000). Programmable DSP datalogger for animal bioacoustics monitoring. *J. Acoust. Soc. Am.*, **108**, 2584.
- Maries, K. (1986). Recent developments in bat detector field instrumentation. *Myotis*, **23-24**, 249-254.
- Markin, V. S. & Hudspeth, A. J. (1995). Modeling the active process of the cochlea: phase relations, amplification and spontaneous oscillation. *Biophys. J.*, **69**, 138-147.
- Marx, G. (1994). Development of a method for numerical sound analysis. Dissertation. Landbauforschung Voelkenrode, Sonderheft 149, 142 pp.
- Masterton, J. J. & Oller, D. K. (1999). Use of technology in phonological assessment: evaluation of early meaningful speech and prelinguistic vocalizations. *Semin. Speech Language*, **20**, 133-147.
- May, B. J., Huang, A. Y., Aleszczyk, C. M. & Hienz, R. D. (1995). Design and conduct of sensory experiments for domestic cats. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 95-108.
- McCallum, A. & Vale, M. (1998). Contour cross-correlation vs. principal components analysis of parameters as methods of estimating distance matrices of dolphin whistles. *Bioacoustics*, **9**, 157-158.
- McCowan, B., Hanser, S. F. & Doyle, L. R. (1999). Quantitative tools for comparing animal communication systems: information theory applied to bottlenose dolphin whistle repertoires. *Anim. Behav.*, **57**, 409-419.
- McCowan, B., Doyle, L. R. & Hanser, S. F. (2002). Using information theory to assess the diversity, complexity,

- and development of communicative repertoires. *J. Comp. Psychol.*, **116**, 166-172.
- McCowan, B. (1995). A new quantitative technique for categorizing whistles using simulated signals and whistles from captive bottlenose dolphins (Delphinidae, *Tursiops truncatus*). *Ethology*, **100**, 177-193.
- McGehee, D. E. & Hildebrand, J. A. (2000). Simple methods for locating, counting, and tracking sperm whales underwater in three dimensions. *J. Acoust. Soc. Am.*, **108**, 2540.
- McGregor, P. K., Peake, T. M. & Gilbert, G. (2000). Communication behaviour and conservation: the application of sound science. In *Animal Behaviour and Conservation* (W. J. Sutherland, M. Gosling and M. Avery, eds.). Cambridge University Press; Cambridge.
- McGregor, P. K. (1992). Quantifying responses to playback: one, many, or composite multivariate measures. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 79-96.
- McGregor, P. K. & Ranft, R. D. (1994). Equipment for sound analysis and playback: a survey. *Bioacoustics*, **6**, 83-86.
- McGregor, P. K. (ed.) (1992). *Playback and Studies of Animal Communication: Problems and Prospects*. Plenum Press; New York.
- McGregor, P. K., Dabelsteen, T., Clark, C. W., Bower, J. L., Tavares, J. P. & Holland, J. (1997). Accuracy of a passive acoustic location system: empirical studies in terrestrial habitats. *Ethol. Ecol. Evol.*, **9**, 269-286.
- McGregor, P. K., Catchpole, C. K., Dabelsteen, T. et al. (1992). Design of playback experiments: the Thornbridge Hall NATO ARW consensus. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 1-9.
- McGregor, P. K. & Holland, J. (1995). AVISOFT-SONAGRAPH Pro: A PC-program for sonographic analysis. V. 2.1. *Anim. Behav.*, **50**, 1137-1138.
- McGregor, P. K. & Peake, T. M. (1998). The role of individual identification in conservation biology. In *Behavioral Ecology and Conservation Biology* (T. M. Caro, ed.). Oxford University Press; Oxford.
- McIlraith, A. L. & Card, H. C. (1997). A comparison of back propagation and statistical classifiers for bird identification. *1997 IEEE Int. Conf. Neural Networks, Vol. 1*, pp. 100-104.
- McIlraith, A. L. & Card, H. C. (1997). Birdsong recognition using backpropagation and multivariate statistics. *IEEE Trans. Signal Process.*, **45**, 2740-2748.
- McIlraith, A. L. & Card, H. C. (1997). Bird song identification using artificial neural networks and statistical analysis. *CCECE '97. Canadian Conference on Electrical and Computer Engineering. Engineering Innovation: Voyage of Discovery. Conference Proceedings, Vol. 1*, pp. 63-66.
- McIlraith, A. L. & Card, H. C. (1995). Birdsong recognition with DSP and neural networks. *IEEE WESCANEX95. Communications, Power, and Computing, Conference Proceedings, Vol. 2.*, pp. 409-414.
- Mckee, E. A. (1988). Decay and degradation of disk and cylinder recordings in storage. In *Audio Preservation: a Planning Study*. Associated Audio Archives Committee, Gerald Gibson, chairman. Association of Recorded Sound Collections; Rockvill, Md., pp. 193-199.
- McLaren, M. A. & Cadman, M. D. (1999). Can novice volunteers provide credible data for bird surveys requiring song identification? *J. Field-Ornithol.*, **70**, 481-490.
- Mellinger, D. K. & Clark, C. W. (1993). A method for filtering bioacoustic transients by spectrogram image convolution. *Oceans '93*, **3**, 122-127.
- Mellinger, D. K. & Clark, C. W. (2000). Recognizing transient low-frequency whale sounds by spectrogram correlation. *J. Acoust. Soc. Am.*, **107**, 3518-3529.
- Mellinger, D. K. (1993). Handling time variability in bioacoustic transient detection. *Oceans '93*, **3**, 116-121.
- Mellinger, D. (1998). A low-cost, high-performance sound capture and archiving system for the subtidal zone. *Bioacoustics*, **9**, 222.
- Mennill, D. J. & Ratcliffe, L. M. (2000). A field test of 'SYRINX' sound analysis software in interactive playback. *Bioacoustics*, **11**, 77-86.
- Mensinger, A. F. & Deffenbaugh, M. (2002). Acoustical neural telemetry from free-swimming fish. *Bioacoustics*, **12**, 333-334.
- Michelsen, A., Heller, K.-G., Stumpner, A. & Rohrseitz, K. (1994). A new biophysical method to determine the gain of the acoustic trachea in bushcrickets. *J. Comp. Physiol. A.*, **175**, 145-151.
- Michelsen, A. & Rohrseitz, K. (1997). Sound localisation in a habitat: an analytical approach to quantifying the degradation of directional cues. *Bioacoustics*, **7**, 291-313.
- Miller, P. J. & Tyack, P. L. (1998). A small towed beamforming array to identify vocalizing resident killer whales (*Orcinus orca*) concurrent with focal behavioral observations. *Topical Stud. Oceanogr.*, **45**, 1389-1405.
- Milligan, S. R., Sales, G. D. & Khirmykh, K. (1993). Sound levels in rooms housing laboratory animals: an uncontrolled daily variable. *Physiol. Behav.*, **53**, 1067-1076.

- Mills, H. (2000). Geographically distributed acoustical monitoring of migrating birds. *J. Acoust. Soc. Am.*, **108**, 2582.
- Mitson, R. B. (1993). Underwater noise radiated by research vessels. *ICES (Int. Counc. Explor. Sea) Mar. Sci. Symp.*, **196**, 147-152.
- Moehl, B., Wahlberg, M. & Heerfordt, A. (2001). A large-aperture array of nonlinked receivers for acoustic positioning of biological sound sources. *J. Acoust. Soc. Am.*, **109**, 434-437.
- Murphy, C. G. & Gerhardt, H. C. (1996). Evaluating the design of mate-choice experiments: the effect of amplexus on mate choice by female barking treefrogs, *Hyla gratiosa*. *Anim. Behav.*, **51**, 881-890.
- Murray, S. C., Mercado, E. & Roitblat, H. L. (1998). The neural network classification of false killer whale (*Pseudorca crassidens*) vocalizations. *J. Acoust. Soc. Am.*, **104**, 3626-3634.
- Nagle, L., Kreutzer, M. & Vallet, E. M. (1993). Obtaining copulation solicitation displays in female canaries without estradiol implants. *Experientia*, **49**, 1022-1023.
- Nara, S., Abe, N., Wada, M. & Kuroiwa, J. (1999). A novel method of sound data description by means of cellular automata and its application to data compression. *Int. J. Bifurc. Chaos Appl. Sci. Eng.*, **9**, 1211-1217.
- Nelson, D. A., Gaunt, S. L., Bronson, C. L. & Kloth, T. J. Jr. (2001). Database design for an archive of animal sounds. *IEEE Eng. Med. Biol. Mag.*, **20**, 76-80.
- Nelson, D. A. & Marler, P. (1993). Measurement of song learning behavior in birds. In *Methods in Neurosciences, Vol. 14. Paradigms for the Study of Behavior* (P. M. Conn, ed.). Academic Press; San Diego, pp. 447-465.
- Nelson, D. A. (1998). Signal(TM)/RTSD(TM) sound analysis system. *Bioacoustics*, **9**, 247-254.
- Newborough, D., Goodson, A. D. & Woodward, B. (1998). Micro-controller based deterrents: acoustic devices to reduce harbour porpoise *Phocoena phocoena* incidental catch in gillnets. *Bioacoustics*, **9**, 232-233.
- Newland, P. L. & Chapman, C. J. (1993). Locomotory *Behaviour* and swimming performance of the Norway lobster *Nephrops norvegicus* in the presence of an acoustic tag. *Mar. Biol. (Berl.)*, **115**, 33-37.
- Noad, M. J. & Cato, D. H. (2000). Comparison of acoustic and visual surveying of humpback whales off East Australia. *J. Acoust. Soc. Am.*, **108**, 2540.
- Norman, A. P., Teagle, L. & Jones, G. (1998). A method for the synchronisation and control of ultrasound recording and stereophotogrammetry in the reconstruction of animal flight. *Bioacoustics*, **9**, 207-212.
- Norman, R. G. & Greene, C. R. (2000). An autonomous acoustic recorder using a directional sensor for locating calling bowhead whales. *J. Acoust. Soc. Am.*, **108**, 2582.
- Norris, J. & Evans, W. E. (1998). Advances in acoustic censusing of marine mammals. *Bioacoustics*, **9**, 158.
- Notarbartolo di Sciara, G. & Gordon, J. (1997). Bioacoustics: A tool for the conservation of cetaceans in the Mediterranean Sea. *Mar. Freshwat. Behav. Physiol.*, **30**, 125-146.
- Nowacek, D. P., Tyack, P. L. & Wells, R. S. (2001). A platform for continuous behavioral and acoustic observation of free-ranging marine mammals: Overhead video combined with underwater audio. *Mar. Mamm. Sci.*, **17**, 191-199.
- Nowicki, S. & Nelson, D. (1990). Defining natural categories in acoustic signals: comparison of three methods applied to "chick-a-dee" call notes. *Ethology*, **86**, 89-101.
- Nyamsi, R. G. M., Aubin, T. & Brémond, J. C. (1994). On the extraction of some time dependent parameters of an acoustic signal by means of the analytic signal concept. Its application to animal sound study. *Bioacoustics*, **5**, 187-203.
- O'Farrell, M. J. & Gannon, W. L. (1999). A comparison of acoustic versus capture techniques for the inventory of bats. *J. Mammal.*, **80**, 24-30.
- O'Farrell, M. J., Miller, B. W. & Gannon, W. L. (1999). Qualitative identification of free-flying bats using the Anabat detector. *J. Mammal.*, **80**, 11-23.
- O'Farrell, M. J. & Miller, B. W. (1999). Use of vocal signatures for the inventory of free-flying Neotropical bats. *Biotropica*, **31**, 507-516.
- Oba, T. (1996). Monitoring biodiversity through natural sound diversity. *Bioacoustics*, **6**, 303.
- Oba, T. (1998). A preliminary analysis of riverain sound environment based upon sound source species and their acoustic features. *Bioacoustics*, **9**, 151-152.
- Obrist, M. (1988). Individually recognizable freeflying bats: a new method to record and analyze their echolocation calls. *Myotis*, **26**, 87-95.
- Ogotu, J. O. & Dublin, H. T. (1998). The response of lions and spotted hyaenas to sound playbacks as a technique for estimating population size. *Afr. J. Ecol.*, **36**, 83-95.
- Okanoya, K. (1995). Adaptive tracking procedures to measure auditory sensitivity. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 143-153.
- Okanoya, K. & Kimura, T. (1993). A software bird call detector and its application to automated playback experiments. *Bioacoustics*, **5**, 117-122.

- Okanoya, K. & Dooling, R. J. (1988). Obtaining acoustic similarity measures from animals: A method for species comparisons. *J. Acoust. Soc. Am.*, **83**, 1690-1693.
- Okumura, T., Akamatsu, T. & Yan, H. Y. (2002). Analyses of small tank acoustics: Empirical and theoretical approaches. *Bioacoustics*, **12**, 330-332.
- Osiejuk, T. S. (2000). Recognition of individuals by song, using cross-correlation of sonograms of ortolan buntings *Emberiza hortulana*. *Biol. Bull. Poznan*, **37**, 95-106.
- Otter, K., Njegovan, M., Naugler, C., Fotheringham, J. & Ratcliffe, L. (1994). A simple technique for interactive playback experiments using a Macintosh powerbook computer. *Bioacoustics*, **5**, 301-308.
- Owren, M. J. & Linker, C. D. (1995). Some analysis methods that may be useful to acoustic primatologists. In *Current Topics in Primate Vocal Communication* (E. Zimmermann, J. D. Newman & U. Juergens, eds.). Plenum Press; New York, London.
- Owren, M. J. & Bernacki, R. H. (1998). Applying linear predictive coding (LPC) to frequency-spectrum analysis of animal acoustic signals. In *Animal Acoustic Communication* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer-Verlag; Berlin, pp. 129-162.
- Palakal, M. J., Murthy, U., Chittajallu, S. K. & Wong, D. (1995). Tonotopic representation of auditory responses using self-organizing maps. *Math. Comput. Modell.*, **22**, 7-21.
- Panek, M. (1998). Use of call counts for estimating spring density of the grey partridge *Perdix perdix*. *Acta Ornithologica*, **33**, 143-148.
- Parijs, S. M. van, Thompson, P. M., Hastie, G. D. & Bartels, B. A. (1998). Modification and deployment of a sonobuoy for recording underwater vocalizations from marine mammals. *Mar. Mamm. Sci.*, **14**, 310-316.
- Parijs, S. M. van, Hastie, G. D. & Thompson, P. M. (2000). A design for a two-dimensional boat-bound hydrophone array for studying harbor seals, *Phoca vitulina*. *Mar. Mamm. Sci.*, **16**, 481-488.
- Parker, T. A., III (1991). On the use of tape recorders in avifaunal surveys. *Auk*, **108**, 443-444.
- Parsons, S., Boonman, A. M. & Obrist, M. K. (2000). Advantages and disadvantages of techniques for transforming and analyzing chiropteran echolocation calls. *J. Mammal.*, **81**, 927-938.
- Parsons, S. (2001). Identification of New Zealand bats (*Chalinolobus tuberculatus* and *Mystacina tuberculata*) in flight from analysis of echolocation calls by artificial neural networks. *J. Zool.*, **253**, 447-456.
- Parsons, S. (1996). A comparison of the performance of a brand of broad-band and several brands of narrow-band bat detectors in two different habitat types. *Bioacoustics*, **7**, 33-43.
- Pavan, G. (1992). A portable DSP workstation for real-time analysis of cetacean sounds in the field. *European Research on Cetaceans, Cambridge, UK*, **6**, 165-167.
- Pavan, G. & Manghi, M. (1998). Anti-aliasing filters of DAT recorders and PC sound boards. *Bioacoustics*, **9**, 161.
- Pavan, G., Priano, M., Manghi, M. & Fossati, C. (1998). A cetacean sound library for the Mediterranean sea. Technical aspects and concerns. *Bioacoustics*, **9**, 162.
- Pavan, G., Priano, M., Manghi, M. & Fossati, C. (1998). Software tools for real-time IPI measurements on sperm whale sounds. *Bioacoustics*, **9**, 224-225.
- Pavan, G., Nascetti, D., Manghim, M., Priano, M., Fossati, C. & Borsani, J. F. (1996). Cooperative bioacoustic research in the Mediterranean Sea with the Italian Navy. *Bioacoustics*, **6**, 318-319.
- Pavan, G. & Manghi, M. (1996). Dual channel real-time analysis on a PC. *Bioacoustics*, **6**, 304.
- Pavan, G. (1994). A digital signal processing workstation for bioacoustical research. *Atti VI Convegno Italiano di Ornitologia (1991)*. Boll. Mus. Reg. Sci. Nat., Torino, pp. 227-234.
- Pavan, G. & Brodsky, E. (1997). Real-time spectrographic analysis with Sound Blaster sound boards. *Bioacoustics*, **8**, 278-279.
- Pavan, G. & Manghi, M. (1997). Ultrasound acquisition and analysis. Comparison of current methods. *Bioacoustics*, **8**, 277-278.
- Pavan, G., Borsani, J. F., Fossati, C., Manghi, M. & Priano, M. (1996). Acoustic research cruises in the Mediterranean - 1994. *European Research on Cetaceans*, **9**, 85-88.
- Pavan, G. (1994). Low-cost real-time spectrographic analysis of sounds. *Bioacoustics*, **6**, 81
- Peake, T. M., Otter, K. A., Terry, A. M. R. & McGregor, P. K. (2000). SCREECH: an interactive playback programs for PCs. *Bioacoustics*, **11**, 69-75.
- Penner, M. J. (1995). Psychophysical methods. In *Methods in Comparative Psychoacoustics* (G. M. Klump, R. J. Dooling, R. R. Fay & W. C. Stebbins, eds.). Birkhaeuser; Basel, pp. 47-57.
- Penteriani, V. (1999). Dawn and morning goshawk courtship vocalizations as a method for detecting nest sites. *J. Wildl. Manage.*, **63**, 511-516.
- Pepperberg, I. M. (1992). What studies on song learning can teach us about playback experiments. In *Playback and Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 45-57.
- Peremans, H., Walker, A. & Hallam, J. (1997). A bionic sonarhead. *Bioacoustics*, **8**, 262.

- Pettersson, L. (1993). Ultrasound detectors: Different techniques, purposes and methods. In *Proceedings of the first European Bat-Detector Workshop* (K. Kapteyn ed.). Netherlands Bat Research Foundation; Amsterdam, pp. 11-19.
- Placer, J. & Slobodchikoff, C. N. (2000). A fuzzy-neural system for identification of species-specific alarm calls of Gunnison's prairie dogs. *Behav. Process.*, **52**, 1-9.
- Popper, A. N. & Carlson, T. J. (1998). Application of the use of sound to control fish behaviour. *Trans. Am. Fish. Soc.*, **127**, 673-707.
- Popper, A. N., Balletto, J., Strait, K., Winchell, F., Wells, A. W. & Vaskis, M. (2002). Preliminary evidence for the use of sound to decrease losses of aquatic organisms at a power plant cooling water intake. *Bioacoustics*, **12**, 306-307.
- Popper, A. N. (2002). An overview of the applied use of sound in fisheries and fish biology. *Bioacoustics*, **12**, 303-305.
- Pye, J. D. (1993). Is fidelity futile? The true signal is illusory especially with ultrasound. *Bioacoustics*, **4**, 271-286.
- Pye, J. D. (1986). Recording bat sounds by new techniques. *Myotis*, **23-24**, 245-248.
- Ranft, R. (1997). The wildlife section of the British Library National Sound Archive (NSA). *Bioacoustics*, **7**, 315-319.
- Ranft, R. (1996). A sound base for bioacoustic research: the National Sound Archive in London. *Bioacoustics*, **6**, 305.
- Ranft, R. (1994). Using the National Sound Archive wildlife collections in bioacoustic research. *Bioacoustics*, **6**, 73.
- Ranft, R. (1995). AVISOFT-SONAGRAPH PRO 2.3 sound analysis software for WINDOWS PCs. *Bioacoustics*, **6**, 253-260.
- Ranft, R. (1998). Bioacoustic recordings at the British Library National Sound Archive: new methods for storage and access. *Bioacoustics*, **9**, 162.
- Rappole, J. H., McShea, W. J. & Vega-Rivera, J. (1993). Evaluation of two survey methods in upland avian breeding communities. *J. Field Ornithol.*, **64**, 55-70.
- Ratcliffe, N., Vaughan, D., Whyte, C. & Shepherd, M. (1998). Development of playback census methods for storm petrels *Hydrobates pelagicus*. *Bird Study*, **45**, 302-312.
- Ratcliffe, L. & Weisman, R. G. (1992). Pitch processing strategies in birds: A comparison of laboratory and field studies. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 211-223.
- Rebbeck, M. (1996). A pilot study for recognition of individual nightjars. *Bioacoustics*, **6**, 306.
- Reby, D., Lek, S., Dimopoulos, I., Joachim, J., Lauga, J. & Aulagnier, S. (1997). Artificial neural networks as a classification method in the behavioural sciences. *Behav. Processes*, **40**, 35-43.
- Redpath, S. M. (1994). Censusing tawny owls *Strix aluco* by the use of imitation calls. *Bird Study*, **41**, 192-198.
- Reid, J. A., Horn, R. B. & Forsman, D. E. (1999). Detection rates of spotted owls based on acoustic-lure and live-lure surveys. *Wildl. Soc. Bull.*, **27**, 986-990.
- Riddett, P. (1998). Sony TCD D8 portable dat recorder. *Bioacoustics*, **9**, 81-83.
- Riede, T. (1996). SIGNALIZE: Signal analysis for speech and sound. *Bioacoustics*, **6**, 327-331.
- Riede, T. (1997). HYPERSIGNAL(TM)-MACRO: A signal processing environment for engineers and scientists. *Bioacoustics*, **7**, 321-325.
- Riede, K. (1996). New information technologies in taxonomy related to bioacoustics. *International Senckenberg Conference: Global Biodiversity Research in Europe*, p. 63.
- Riede, K. (1993). Monitoring biodiversity: analysis of Amazonian rainforest sounds. *Ambio*, **22**, 546-548.
- Riede, K. (1993). Bioacoustics of calling communities from a Malaysian lowland rainforest. *Verh. Deutsch. Zool. Ges.*, **86**, 269 (German).
- Ripley, B. D. (1996). *Pattern Recognition and Neural Networks*. Cambridge University Press; Cambridge.
- Roch, J. B., Comze, F., Eyraud, A. & Deubreuil, C. (1990). Synchronization of glottography and laryngeal stroboscopy. *Folia Phoniat.*, **43**, 53-59.
- Rogers, C. (1995). High resolution analysis of bird sounds. *1995 International Conference on Acoustics, Speech, and Signal Processing, Conference Proceedings, Vol. 5*, pp. 3011-3014.
- Roitblat, H. L., Moore, P. W. B., Nachtigall, P. E., Penner, R. H. & Au, W. W. L. (1989). Dolphin echolocation: identification of returning echoes using a counterpropagation network. *IJCNN (Int. Joint Conf. Neur. Networks)*, **1**, 295-300.
- Roitblat, H. L., Moore, P. W. B., Nachtigall, P. E., Penner, R. H. & Au, W. W. L. (1989). Natural echolocation with an artificial neural network. *Int. J. Neur. Networks, Res. Appl.*, **1**, 239-248.
- Ross, B. P., Lien, J. & Furness, R. W. (2001). Use of underwater playback to reduce the impact of eiders on mussel farms. *ICES J. Mar. Sci.*, **58**, 517-524.
- Rothenberg, J. (1995). Ensuring the longevity of digital documents. *Sci. Am.*, **272(1)**, 42-47.

- Rucci, M., Edelman, G. M. & Wray, J. (1999). Adaptation of orienting behavior: from the barn owl to a robotic system. *IEEE Trans. Robot. Automat.*, **15**, 96-110.
- Saucier, M. H., Baltz, D. M. & Roumillat, W. A. (1992). Hydrophone identification of spawning sites of spotted seatrout *Cynoscion nebulosus* (Osteichthyes, Sciaenidae) near Charleston, South Carolina. *Northeast Gulf Sci.*, **12**, 141-145.
- Sayigh, L. S., Tyack, P. L. & Wells, R. S. (1993). Recording underwater sounds of free-ranging dolphins while underway in a small boat. *Mar. Mamm. Sci.*, **9**, 209-213.
- Schaub, M., Schwilch, R. & Jenni, L. (1999). Does tape-luring of migrating Eurasian reed-warblers increase number of recruits or capture probability? *Auk*, **116**, 1047-1053.
- Scheffrahn, R. H., Robbins, W. P., Busey, P., Su, N.-Y. & Mueller, R. K. (1993). Evaluation of a novel, hand-held acoustic emissions detector to monitor termites (Isoptera: Kalotermitidae, Rhinotermitidae) in wood. *J. Econ. Entomol.*, **86**, 1720-1729.
- Schekkerman, H. (1999). Sex bias and seasonal patterns in tape-lured samples of migrating skylarks *Alauda arvensis*. *Ringing & Migration*, **19**, 299-305.
- Schilt, C. R. (2002). Natural history in an unnatural environment: Can we help fish to help themselves? *Bioacoustics*, **12**, 310-313.
- Schmalz, W., Siegesmund, M., Thuermer, K., Kranawettreiser, J. & Hack, H.-P. (2002). A new method to investigate the downstream migration of fishes within a hydropower plant area in a Middle European river - a possibility to evaluate the effectiveness of behaviour barriers. *Bioacoustics*, **12**, 308-310.
- Schoen, P. C., Puppe, B. & Manteuffel, G. (2001). Linear prediction coding analysis and self-organizing feature map as tools to classify stress calls of domestic pigs (*Sus scrofa*). *J. Acoust. Soc. Am.*, **110**, 1425-1431.
- Schoen, P.-C., Puppe, B. & Manteuffel, G. (1998). A sound analysis system based on LabVIEW(R) applied to the analysis of suckling grunts of domestic pigs *Sus scrofa*. *Bioacoustics*, **9**, 119-133.
- Schrader, L. & Hammerschmidt, K. (1997). Computer-aided analysis of acoustic parameters in animal vocalisations: a multi-parametric approach. *Bioacoustics*, **7**, 247-265.
- Schrader, L. & Hammerschmidt, K. (1996). Computer-aided analysis of acoustic parameters: new possibilities of signal analysis. *Bioacoustics*, **6**, 307.
- Schukat-Talamazzini, E. G. (1995). *Automatic Voice Recognition. Basics, Statistical Models and Efficient Algorithms*. Vieweg, Braunschweig/Wiesbaden (German).
- Searcy, W. A. (1992). Measuring responses of female birds to male song. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press; New York, pp. 175-189.
- Searcy, W. A. & Capp, M. S. (1997). Estradiol dosage and the solicitation display assay in red-winged blackbirds. *Condor*, **99**, 826-828.
- Shade, R. E., Furgason, E. S. & Murdock, L. L. (1990). Detection of hidden insect infestations by feeding-generated ultrasonic signals. *Am. Entomol.*, **36**, 231-234.
- Shuman, D., Coffelt, J. A., Vick, K. W. & Mankin, R. W. (1993). Quantitative acoustical detection of larvae feeding inside kernels of grain. *J. Econ. Entomol.*, **86**, 933-938.
- Smart, J. (1995). Sound advice. *Birding World*, **8**, 75-76.
- Smith, W. J. (1996). Using interactive playback to study how songs and singing contribute to communication about behavior. In *Ecology and Evolution of Acoustic Communication in Birds* (D. E. Kroodsma & E. H. Miller, eds.). Comstock Publishing Associates, Cornell University Press; Ithaca & London, pp. 377-397.
- Specht, R. (1997). Analysis of ultrasound using AVISOFT-sonograph software. *Bioacoustics*, **8**, 276-277.
- Specht, R. (1996). Avisoft-Sonograph Pro - sonographic analysis under Windows. *Bioacoustics*, **6**, 308.
- Speisberger, J. L. & Fristrup, K. M. (1990). Passive localization of calling animals and sensing of their acoustic environment using acoustic tomography. *Am. Nat.*, **135**, 107-153.
- Sprague, M. W., Luczkovich, J. J., Pullinger, R. C., Johnson, S. E., Jenkins, T. & Daniel, H. J. III (2000). Using spectral analysis to identify drumming sounds of some North Carolina fishes in the family Sciaenidae. *J. Elisha Mitchell Soc.*, **116**, 124-145.
- Stafford, K. M. & Fox, C. G. (1997). Acoustic localizations of blue whales *Balaenoptera musculus* by fixed arrays and moored autonomous hydrophone arrays. *Bioacoustics*, **8**, 260-261.
- Stoddard, P. K. (1998). Application of filters in bioacoustics. In *Animal Acoustic Communication: Sound Analysis and Research Methods* (S. L. Hopp, M. J. Owren and C. S. Evans, eds.). Springer; Berlin, pp. 105-127.
- Sturtivant, C. & Datta, S. (1995). Techniques to isolate dolphin whistles and other tonal sounds from background noise. *Acoustics Lett.*, **18**, 189-193.
- Sturtivant, C. & Datta, S. (1998). Automatic dolphin whistle detection, extraction, encoding and classification. *Bioacoustics*, **9**, 234.
- Sturtivant, C. & Datta, S. (1998). Dolphin whistle classification with the "Dolphin" software. *Bioacoustics*, **9**,

- Sturtivant, C. R. & Datta, S. (1996). The enhancement and identification of whistles and other tonal sounds from marine mammals among background noise. *European Research on Cetaceans*, **9**, 53-55.
- Suzuki, R. & Buck, J. R. (2000). Extraction and tracking of bottlenose dolphin whistle contours. *J. Acoust. Soc. Am.*, **108**, 2635.
- Svelling, I., Totland, B. & Oevredal, J. T. (2002). A remote-controlled instrument platform for fish behaviour studies and sound monitoring. *Bioacoustics*, **12**, 335-336.
- Tchernichovski, O., Nottebohm, F., Ho, C. E., Pesaran, B. & Mitra, P. P. (2000). A procedure for an automated measurement of song similarity. *Anim. Behav.*, **59**, 1167-1176.
- Teimoorzadeh, K. (1995). Seeing in the dark with artificial bats. In *Advances in Artificial Life. Third European Conference on Artificial Life Proceedings* (F. Moran, A. Moreno, J. J. Merelo and P. Chacon, eds.). Springer-Verlag; pp. 590-601.
- Telfer, E. S. & Farr, D. R. (1993). The potential of acoustical recordings as a means of monitoring breeding birds. *Can. Wildl. Serv. Progr. Notes*, 203.
- Terhune, J. M., Burton, H. & Green, K. (1993). Classification of diverse call types using cluster analysis techniques. *Bioacoustics*, **4**, 245-258.
- Terry, A. & McGregor, P. (2001). Finding faces in the crowd: Neural networks used to count and monitor populations of calling birds. *Adv. Ethol.*, **36**, 274.
- Terry, A. M. R., McGregor, P. K. & Peake, T. M. (2001). A comparison of some techniques used to assess vocal individuality. *Bioacoustics*, **11**, 169-188.
- Thode, A. M., D'Spain, G. L. & Kuperman, W. A. (2000). Matched-field processing, geoacoustic inversion, and source signature recovery of blue whale vocalizations. *J. Acoust. Soc. Am.*, **107**, 1286-1300.
- Thode, A. M., Mellinger, D. K., Stienessen, S., Martinez, A. & Mullin, K. D. (2000). Three-dimensional localization of diving sperm whales using a short-aperture towed horizontal array. *J. Acoust. Soc. Am.*, **108**, 2540.
- Thompson, N. S., LeDoux, K. & Moody, K. (1994). A system for describing bird song units. *Bioacoustics*, **5**, 267-279.
- Tigges, M., Mergell, P., Herzel, H., Wittenberg, T. & Eysholdt, U. (1997). Observation and modelling of glottal biphonation. *Acustica*, **83**, 707-714.
- Trouilhet, J.-F., Nadaud, S., Vincent, F. & Ricci, J.-C. (1998). Presentation of a methodology for classification of biological signals: Application to the recognition of thrush calls. *Bull. Soc. Zool. France*, **123**, 279-292 (French).
- Tschuch, G. (1996). Analysis of signals from stridulatory organs without any resonance. *Bioacoustics*, **6**, 310.
- Tyack, P. L. & Recchia, C. A. (1991). A datalogger to identify vocalizing dolphins. *J. Acoust. Soc. Am.*, **90**, 1668-1671.
- Varela, A. (1994). Art of audio archiving in the '90s. *Pro Sound News*, **16(1)**, 40.
- Vaughan, N., Jones, G. & Harris, S. (1997). Habitat use by bats (Chiroptera) assessed by means of a broad-band acoustic method. *J. Appl. Ecol.*, **34**, 716-730.
- Vaughan, N., Jones, G. & Harris, S. (1997). Identification of British bat species by multivariate analysis of echolocation call parameters. *Bioacoustics*, **7**, 189-207.
- Vielliard, J. (1993). "Side-bands" artefact and digital sound processing. *Bioacoustics*, **5**, 159-162.
- Vielliard, J. (1993). Recording wildlife in tropical rainforest. *Bioacoustics*, **4**, 305-311.
- Vieten, M., Kamper, K. & Diel, R. D. (1989). Social learning with bats. Behavioural science with PC-assisted acoustic measurement engineering. *Feinwerktechnik & Messtechnik*, **97**, 551-552 (German).
- Wahlberg, M., Moehl, B. & Madsen, P. T. (2001). Estimating source position accuracy of a large-aperture hydrophone array for bioacoustics. *J. Acoust. Soc. Am.*, **109**, 397-406.
- Wahlberg, M., Lettevall, E. & Medlund, L. (1996). Estimating the length of sperm whales from interpulse intervals in their clicks. *European Research on Cetaceans*, **9**, 38-40.
- Wahlstroem, S. (1996). Bioacoustics and SI-quantities and units. *Bioacoustics*, **6**, 311-312.
- Wang, J., Sakaguchi, H. & Sokabe, M. (1999). Sex differences in the vocal motor pathway of the zebra finch revealed by real-time optical imaging technique. *NeuroReport*, **10**, 2487-2492.
- Wartzok, D., Sayegh, S., Stone, H., Barchak, J. & Barnes, W. (1992). Acoustic tracking system for monitoring under-ice movements of polar seals. *J. Acoust. Soc. Am.*, **92**, 682-687.
- Waters, D. A. & Walsh, A. L. (1994). The influence of bat detector brand on the quantitative estimation of bat activity. *Bioacoustics*, **5**, 205-221.
- Watson, C. (1995). The PDR 1000 portable DAT recorder. *Bioacoustics*, **6**, 175-177.
- Watson, C. (1994). Nagra D: An operational assessment. *Bioacoustics*, **5**, 239-241.
- Weary, D. & Weisman, R. (1993). SoundEdit v. 2.0.3. *Anim. Behav.*, **45**, 417-418.
- Weary, D. M. (1992). Bird song and operant experiments: a new tool to investigate song perception. In *Playback and Studies of Animal Communication: Problems and Prospects* (P. K. McGregor, ed.). Plenum Press;

New York, pp. 201-210.

- Webb, B. (1995). Using robots to model animals: A cricket test. *Robotics and Autonomous Systems*, **16**, 117-132.
- Webb, B. (1996). A cricket robot. *Sci. Am.*, **Dec.**, 62-67.
- Webb, J. C., Litzkow, C. A. & Slaughter, D. C. (1988). A computerized acoustical larval detection system. *Appl. Engin. Agric.*, **4**, 268-274.
- Welbergen, P. & Lankinen, P. (1991). A practical device for sound recording of *Drosophila*. *Drosophila Inform. Serv.*, **70**, 263-264.
- White, D. J., King, A. P. & Duncan, S. D. (2002). Voice recognition technology as a tool for behavioral research. *Behav. Res. Meth.*, **34**, 1-5.
- Whitman, A. A., Hagan III, J. M. & Brokaw, N. V. L. (1997). A comparison of two bird survey techniques used in a subtropical forest. *Condor*, **99**, 955-965.
- Wilkinson, G. S. (1994). Canary I.I.: Sound analysis software for Macintosh computers. *Bioacoustics*, **5**, 227-238.
- Williams, J. M. (1993). Objective comparison of song syllables: a dynamic programming approach. *J. Theor. Biol.*, **161**, 317-328.
- Wood, M., Casaretto, L., Horgan, G. & Hawkins, A. D. (2002). Discriminating between fish sounds - a wavelet approach. *Bioacoustics*, **12**, 337-339.
- Woodward, B. (1998). Principles of tracking bio-sonar sources underwater. *Bioacoustics*, **9**, 234-235.
- Woodward, B. & Coggrave, C. R. (1996). Tracking cetaceans by sonar click detection. *European Research on Cetaceans*, **9**, 50-52.
- Wu, B. M., Chan, F. H. Y., Lam, F. K., Lam, M. C., Poon, P. W. F. & Poon, A. M. S. (1998). A PC-based system for long-term monitoring of animal activity. *Proc. 20th Ann. Int. Conf. IEEE Eng. Medic. Biol. Soc., Vol. 20*, pp. 1910-1913.
- Wu, B. M., Chan, F. H., Lam, F. K., Poon, P. W. & Poon, A. M. (2000). A novel system for simultaneous monitoring of locomotor and sound activities in animals. *J. Neurosci. Meth.*, **101**, 69-73.
- Yan, H. Y., Kenyon, T. N. & Ladich, F. (1997). Use of auditory brainstem response (ABR) for fish auditory sensitivity study. *Bioacoustics*, **8**, 251.
- Yen, G. G. & Quiang, F. (2001). Automatic frog calls monitoring system: a machine learning approach. *Int. J. Comput. Intell. Appl.*, **2**, 165-186.
- Zmarich, C., Vernier, E. & Ferrero, F. (1997). Methodological considerations on the acoustic signal analysis for two species of bats (Chiroptera, Vespertilionidae). *Bioacoustics*, **8**, 275-276.