

PERSONAL

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Date of Birth: 12 July 1964  
Place of Birth: Firenze, Italy  
Nationality: Italian

PRESENT POSITION AND ADDRESS

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Assistant Professor, Ministry of Education, University and Research (MIUR) Programme 'Rientro dei Cervelli' ('Comeback of the Brains')

Dipartimento di Fisiologia, Sezione di Neuroscienze e Fisiologia Applicata, Università di Siena  
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DEGREES

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1986 Diploma in Pianoforte (MA), *Summa cum Laude*, Conservatorio Cherubini, Firenze, Italy.  
1992 Laurea (MSc) in Biology, *Summa cum Laude et Encomium*, University of Firenze.  
1993 Biologist, State Qualification.  
1995 Master of Philosophy, University of Cambridge, UK.  
2000 Doctor of Philosophy, University of Cambridge.  
2003 Certificate of Postdoctoral Studies, University of California, Los Angeles

ACADEMIC APPOINTMENTS

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1999-2001 Post-doctoral researcher at the Max-Planck-Research Centre for Ornithology, Andechs, Germany. Host: Prof. Eberhard Gwinner.  
2001-2003 Post-doctoral researcher at the Department of Physiological Science, University of California, Los Angeles, USA. Host: Prof. Barney A. Schlinger.  
2003- Assistant Professor, Dipartimento di Fisiologia, Università di Siena.

ACADEMIC DISTINCTIONS

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1992 *Encomium* of the Faculty for the outstanding *curriculum studiorum* and Laurea Thesis, University of Firenze.  
1993-1994 Comett Training Studentship.  
1993-1994 Erasmus studentship, Commission of the European Communities.  
1994 ASAB Conference Grant, Association for the study of Animal Behaviour.  
1994 Elected to Junior Research Fellow, Hughes Hall, Cambridge.  
1994-1998 PhD Studentship, Max-Planck-Gesellschaft.  
1995 ASAB Conference Grant, Association for the study of Animal Behaviour.  
1995 Travel Grant, Association for the study of Animal Behaviour.  
1996 Conference Grant, Commission of the European Communities.

- 1997-1998 Member of the Organizing Committee of the Seewiesen Student Conference.  
 1999 Research Travel Grant, Alexander von Gwinner Foundation.  
 1999-2001 Research Fellowship, Max-Planck-Gesellschaft.  
 1999-2001 Organiser of the Institute Colloquia, Max-Planck-Research Centre for Ornithology.  
 2001-2003 Post-doctoral Fellow, University of California, Los Angeles  
 2001- Visiting scientist at the Smithsonian Tropical Research Institute, Panamá.  
 2003- Research Grant of the Ministero dell'Università e Ricerca, Special Programme "Rientro dei Cervelli".  
 2004- Reserach Grant, Committee for Research and Expolration, National Geographic Society  
 2005- Italian Member of the European Committee of the Animal Behaviour Societies  
 2005- Italian Member of the International Council of Ethologists  
 2006- Italian Member of the International Onithological Congress

#### RESEARCH VISITS AT OTHER INSTITUTIONS

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- 1999 Tovetorp Zoological Research Station, University of Stockholm, Sweden  
 1999 Instituto Nacional de Investigação e Desenvolvimento Agrário, Cape Verde  
 2000 National Museum of Kenya, Nairobi, Kenya  
 2001 Vrjie University, Amsterdam, The Netherlands  
 2001-current Smithsonian Tropical Research Institute, Republic of Panama

#### INVITED TALKS

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- 1993 University of Milano, Italy  
 1997 Mid Sweden University, Östersund, Sweden  
 2000 University of Firenze, Italy  
 2000 University of Siena, Italy  
 2000 Vrije University, Amsterdam, The Netherlands  
 2000 University of Groningen, The Netherlands  
 2001 University of Sheffield, UK  
 2001 University of Pisa, Italy  
 2001 University of Ferrara, Italy  
 2003 Center for Tropical Research, University of California, Los Angeles, CA, USA  
 2004 University of Torino, Italy  
 2005 Istitute Superiore di Sanità, Rome, Italy  
 2005 Syracuse University, NY, USA  
 2006 University of Eastern Piedmont, Italy

#### WORKSHOPS

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- 1991 NATO Workshop on "Playback and studies of animal communication", Nottingham, UK.  
 1995 International Summer School on "Gonadal hormone-dependent control of sexual behaviour", Seewiesen, Germany.  
 1996 Workshop on "Biomusicology", Fiesole, Italy.

- 1997 “Genetic and epigenetic factors in sexual differentiation of the brain”. EC Biomed Workshops, Gargellen, Austria.
- 1997 Summer School on “Biomusicology”, Mid Sweden University, Östersund, Sweden.
- 1998 “Steroids in brain plasticity and differentiation”. EC Biomed Workshops, Gargellen, Austria.
- 2004 ESF/NSF/NSERC workshop “Trade-offs and constraints”, E-Bird network, Wageningen, The Netherlands.
- 2005 ESF Workshop “Are there specific adaptations for long-distance migration in birds? The search for adaptive syndromes.” Andechs, Germany.
- 2006 ESF/NSF/NSERC workshop “Individual Variation”, E-Bird network, Vancouver, Canada

#### REFEREE WORK

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Bioacoustics  
 Ethology, Ecology & Evolution  
 European Journal of Neuroscience  
 General and Comparative Endocrinology  
 Hormones & Behavior  
 Journal of Neurobiology  
 Journal of Comparative Physiology A

#### PROFESSIONAL MEMBERSHIPS

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- 1994- Association for the Study of Animal Behaviour
- 2002- Society for Neuroscience
- 2002- Society for Behavioral Neuroendocrinology
- 2003- Center for Tropical Research, University of California, Los Angeles.
- 2004- Società Italiana di Etologia.
- 2005- Società Italiana di Neuroscienze

#### POSTER PRESENTATIONS AT MEETINGS

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- Fusani, L., Beani, L. & Dessi-Fulgheri, F. 1991. Testosterone affects some features of the male call of the grey partridge (*Perdix perdix*). *VI Italian Ornithological Congress*. Torino, Italy.
- Fusani, L., Beani, L., Curry, L. & Dessi-Fulgheri, F. 1992. Analysis of some calls of a Galapagos mockingbird (*Nesomimus parvulus*). *XV Congress of the Italian Ethological Society*. Castiglione della Pescaia, Italy.
- Fusani, L., Beani, L. & Dessi-Fulgheri, F. 1994. Selection of androgen-dependent features of male calls by female Grey partridges. *VI International Behavioural Ecology Congress*. Nottingham, UK.
- Fusani, L. & Hutchison, R. E. 1994. Analysis of an audio-video signal using a digital system. *Summer Meeting of the Association for the Study of Animal Behaviour*. Bern, Switzerland.
- Fusani, L. 1995. Display-related changes in ring dove calls. *Easter Meeting of the Association for the Study of Animal Behaviour*. Oxford, UK.

- Fusani, L., Hutchison, J. B. & Gahr, M. 1995. Effects of androgens and oestrogens on song and song system of female canaries. *IV International Congress of Neuroethology*. Cambridge, UK.
- Fusani, L. & Gahr, M. 1996. Effects of the aromatase inhibitor Fadrozole on the brain and the song of female canaries. *XXIV Goettingen Neurobiology Conference*. Goettingen, Germany.
- Fusani, L., Gahr, M. & Hutchison, J. B. 1997. Aromatase inhibition specifically reduces estrogen-dependent courtship in male Barbary doves. *Annual Meeting of the Society for Neuroscience*. New Orleans, USA.
- Fusani, L., Wozniak, A., Gahr, M. & Hutchison, J. B. 1997. Inhibition of preoptic aromatase specifically reduces oestrogen-dependent behaviour in the ring dove. *XXV Goettingen Neurobiology Conference*. Goettingen, Germany.
- Fusani, L., Hutchison, J. B. & Gahr, M. 1998. Seasonal differences in the aromatase activity in the canary brain and sexual dimorphism of its regulation. *Annual Meeting of the Society for Neuroscience*. Los Angeles.
- Fusani, L., Hutchison, J. B. & Gahr, M. 1999. Seasonal regulation of androgen receptor-, estrogen receptor- and aromatase-mRNA in the canary neostriatum. *Annual Meeting of the Society for Behavioral Neuroendocrinology*. Charlottesville, VA, USA.
- Fusani, L. & Gahr, M. 2000. The temporal pattern of canary song is modulated by oestrogens. *Joint Meeting of the VI International Conference on Hormones, Brain and Behavior and The Society for Behavioral Neuroendocrinology*. Madrid, Spain.
- Fusani, L., Canoine, V., Reineman, D. R. & Schlinger, B. 2002. Anti-androgen affects male courtship displays in a free-living tropical bird, the golden-collared manakin. *Annual Meeting of the Society for Behavioral Neuroendocrinology*. Amherst, MA, USA.
- Fusani, L., Metzendorf, R., Gwinner, E. & Gahr, M. 2002. Distribution of melatonin receptors mRNA in the songbird brain. *The Behavioral Neurobiology of Bird Song. XVI Annual Symposium of the Center for the Study of Gene Structure & Function, Hunter College*. New York, NY, USA.
- Fusani, L., Schultz, J. D., Canoine, V., Donaldson, Z., Reineman, D. R. & Schlinger, B. A. 2002. Androgen control of a complex avian courtship behavior. *Annual Meeting of the Society for Neuroscience*. Orlando, FL, USA.
- Canoine, V., Fusani, L., Schlinger, B. & Hau, M. 2003. Expression of androgen receptor, estrogen receptor, and aromatase in the brain of a tropical bird, the spotted antbird: Mapping and seasonal comparison. *II International Meeting on Steroids and Nervous System*. Torino, Italy.
- Fusani, L., Donaldson, Z. & Schlinger, B. 2003. The distribution of steroid receptors and aromatase in the brain and spinal cord of a suboscine bird with elaborate courtship display, the Golden-collared manakin. *Annual Meeting of the Society for Behavioral Neuroendocrinology*. Cincinnati, OH.
- Fusani, L., Donaldson, Z. & Schlinger, B. 2003. Distinctive expression of androgen receptor in the brain of a sub-oscine bird with elaborate courtship displays. *Annual Meeting of the Society for Neuroscience*. San Diego, CA, USA.
- Fusani, L., Goslow, G. E. & Schlinger, B. A. 2004. The courtship display of the Golden-collared manakin: A slow-motion analysis. *Annual Meeting of the Society for Behavioral Neuroendocrinology*. Lisbon, Portugal.
- Bonifazi, M., Gianneschi, F., della Volpe, R., Fusani, L. & Rossi, A. 2005. Input-output properties in the human corticospinal pathway: Effects of gonadal steroids in males. *3rd International Meeting Steroids and Nervous System*. Torino, Italy.

Corrieri, L., Canoine, V., Della Seta, D. & Fusani, L. 2005. Environmental-like treatment with a pure oestrogen affects Morris Water Maze (MWM) performance in male rats. *3rd International Meeting Steroids and Nervous System*. Torino, Italy.

Della Seta, D., Farabollini, F., Dessi-Fulgheri, F. & Fusani, L. 2005. Developmental exposure to environmental levels of a pure estrogen affects oestrus cycle, sexual behaviour, and reproductive fitness of female rats. *3rd International Meeting Steroids and Nervous System*. Torino.

Day, L. B., Fusani, L. & Schlinger, B. A. 2005. Sex differences in brain areas related to courtship display in manakins. Program No. 762.9. In: *2005 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience.

Fusani, L., Canoine, V., Della Seta, D. & Corrieri, L. 2005. Environmental-like exposure to estrogen during development affects Morris Water Maze performance in male rats. Program No. 879.9. In: *2005 Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience.

#### ORAL COMMUNICATIONS AT MEETINGS

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Fusani, L., Beani, L. & Dessi-Fulgheri, F. 1991. Seasonal individual changes in grey partridge *Perdix perdix* male call. *VI Italian Ornithological Congress*. Torino, Italy.

Fusani, L., Gahr, M. & Hutchison, R. E. 1995. Relationships between vocalisations and posture in birds. *XXIV International Ethological Conference*. Honolulu, HW, USA.

Fusani, L., Hutchison, R. E. & Hutchison, J. B. 1995. Influence of the photoperiod on brain aromatase activity and vocalisations in the Ring Dove *Streptopelia risoria*. *VIII Italian Ornithological Congress*. Pavia, Italy.

Fusani, L., Metzendorf, R., Wozniak, A., Hutchison, J. B. & Gahr, M. 1996. Estrogen-dependence of vocal patterns in canaries. *V International Conference on Hormones, Brain and Behavior*. Torino, Italy.

Beani, L. & Fusani, L. 1997. Function and hormonal background of vocal display in non-songbirds. *XXV International Ethological Conference*. Vienna, Austria.

Fusani, L., Gahr, M. & Hutchison, J. B. 1997. Aromatase inhibition affects oestrogen-dependent courtship behaviour in male Barbary doves. *XXV International Ethological Conference*. Vienna, Austria.

Fusani, L. & Gahr, M. 1998. The correlation of singing with hormone-dependent gene-expression and neuroanatomy of vocal control areas in the canary: a study at the individual level. *XXVI Goettingen Neurobiology Conference*. Goettingen, Germany.

Fusani, L. & Gahr, M. 2000. A new role for oestrogens in the neural control of birdsong. *XIX Meeting of the Italian Ethological Society*. San Giuliano Terme, Italy.

Fusani, L. & Gwinner, E. 2001. Reduced amplitude of melatonin secretion during migration in the blackcap (*Sylvia atricapilla*). *XIV Intl. Congr. Comp. Endocrinol.* Sorrento, Italy.

Fusani, L. & Gwinner, E. 2002. Night-time melatonin increases in a nocturnal migrant after induced interruption of migratory restlessness. *XXIII International Ornithological Congress*. Beijing, China.

Fusani, L. & Schlinger, B. 2003. Testosterone and the elaborate courtship of a tropical bird. *Winter Meeting of the Association for the Study of Animal Behaviour*. London, UK.

- Fusani, L. 2004. Melatonin and the control of nocturnal migratory activity in birds. *VIII International Symposium on Avian Endocrinology*. Phoenix, AZ, USA.
- Fusani, L. 2004. How to study 'hormone-dependent' behaviour. *II European Conference on Behavioural Biology*. Groningen, The Netherlands.
- Fusani, L., Goslow, G. E. & Schlinger, B. 2004. A slow motion analysis of the courtship displays of the male Golden-collared manakin. *XXI Congress of the Italian Ethological Society*. Padova, Italy.
- Fusani, L., Hutchison, J. B. & Gahr, M. 2005. Steroid induced masculinisation of song and the neural song system in adult songbirds. *3rd International Meeting Steroids and Nervous System*. Torino, Italy.
- Fusani, L. & Gahr, M. 2005. Oestrogen formation, regulation, and action in the songbird brain. *Avian Brain Conference*. Budapest, Hungary.
- Fusani, L. & Schlinger, B. A. 2005. The spectacular courtship displays of the male Golden-collared manakin analysed with high-speed videography. *XXIX Ethological Conference*. Budapest, Hungary.
- Fusani, L. & Schlinger, B. A. 2006. Individual differences in the courtship displays of male Golden-collared manakins: the bases for mate choice? *XXIV International Ornithological Congress*. Hamburg, Germany.

#### PUBLICATIONS

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- McGregor, P. K., Catchpole, C. K., Dabelsteen, T., Falls, J. B., Fusani, L., Gerhardt, H. C., Gilbert, F., Horn, A. G., Klump, G. M., Kroodsma, D. E., Lambrechts, M. M., McComb, K. E., Nelson, D. A., Pepperberg, I. M., Ratcliffe, L., Searcy, W. A. & Weary, D. M. 1992. Design of playback experiments: The Thornbridge Hall NATO ARW consensus. In: *Playback and studies of animal communication* (Ed. by McGregor, P. K.), pp. 1-9. New York - London: Plenum Press.
- Fusani, L. 1994. Canary. The Cornell Bioacoustics Workstation. Version 1.1. *Ethology Ecology & Evolution*, **6**, 249-252.
- Fusani, L., Beani, L. & Dessì-Fulgheri, F. 1994. Seasonal individual changes in grey partridge *Perdix perdix* male call. *Mus. reg. Sci. nat. Torino*, **1**, 173-181.
- Fusani, L., Beani, L. & Dessì-Fulgheri, F. 1994. Testosterone affects the acoustic structure of the male call in the grey partridge (*Perdix perdix*). *Behaviour*, **128**, 301-310.
- Fusani, L., Beani, L., Lupo, C. & Dessì-Fulgheri, F. 1997. Sexually selected vigilance behaviour of the grey partridge is affected by plasma androgen levels. *Anim. Behav.*, **54**, 1013-1018.
- 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.
- Metzdorf, R., Gahr, M. & Fusani, L. 1999. Distribution of aromatase, estrogen receptor, and androgen receptor mRNA in the forebrain of songbirds and nonsongbirds. *J. Comp. Neurol.*, **405**, 1-15.
- 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.

- Fusani, L., Gahr, M. & Hutchison, J. B. 2001. Aromatase inhibition reduces specifically one display of the ring dove courtship behavior. *Gen. Comp. Endocrinol.*, **122**, 23-30.
- Fusani, L. & Gwinner, E. 2001. Reduced amplitude of melatonin secretion during migration in the blackcap (*Sylvia atricapilla*). In: *Perspective in Comparative Endocrinology: Unity and Diversity. Proceed. 14th Intl. Congr. Comp. Endocrinol. Sorrento, Italy, May 2001* (Ed. by Goos, H. J. T., Rastogi, R. K., Vaudry, H. & Pierantoni, R.), pp. 295-300. Bologna: Monduzzi.
- Fusani, L., Hutchison, J. B. & Gahr, M. 2001. Testosterone Regulates the Activity and Expression of Aromatase in the Canary Neostriatum. *J. Neurobiol.*, **49**, 1-8.
- Gahr, M., Leitner, S., Fusani, L. & Rybak, F. 2002. What is the adaptive role of neurogenesis in adult birds? *Plasticity in the Adult Brain: From Genes to Neurotherapy. Progr. Brain Res.*, **138**, 233-254.
- Fusani, L. & Hutchison, J. B. 2003. Lack of changes in the courtship behaviour of male ring doves after testosterone treatment. *Ethology Ecology & Evolution*, **15**, 143-157.
- Fusani, L., Metzdorf, R., Hutchison, J. B. & Gahr, M. 2003. Aromatase inhibition affects testosterone-induced masculinization of song and the neural song system in female canaries. *J. Neurobiol.*, **54**, 370-379.
- Fusani, L., Van't Hof, T. & Hutchison, J. B. 2003. Season-related changes in circulating androgen, brain aromatase, and perch-calling in male ring doves. *Gen. Comp. Endocrinol.*, **130**, 142-147.
- Fusani, L. & Gwinner, E. 2004. Simulation of migratory flight and stopover affects night levels of melatonin in a nocturnal migrant. *Proceedings of the Royal Society of London Series B-Biological Sciences*, **271**, 205-211.
- Fusani, L., Canoine, V., Goymann, W., Wikelski, M. & Hau, M. 2005a. Difficulties and special issues associated with field research in behavioral neuroendocrinology. *Horm. Behav.*, **48**, 484-491.
- Fusani, L. & Gwinner, E. 2005a. Melatonin and nocturnal migration. *Ann. N. Y. Acad. Sci.*, **1046**, 264-270.
- Fusani, L. & Gwinner, E. 2005b. Melatonin regulation of migratory behaviour and physiology. In: *Functional Avian Endocrinology* (Ed. by Dawson, A. & Sharp, P.). New Delhi: Narosa Publishing House.
- Gahr, M., Fusani, L., Jansen, R. & ter Maat, A. 2005. Melatonin-dependent song pattern of songbirds: Bypassing the gonadal control of sexual behavior. In: *Functional Avian Endocrinology* (Ed. by Dawson, A. & Sharp, P.). New Delhi: Narosa Publishing House.
- Jansen, R., Metzdorf, R., van der Roest, M., Fusani, L., ter Maat, A. & Gahr, M. 2005. Melatonin affects the temporal organization of the song of the zebra finch. *FASEB J.*, **19**, 848-850.
- Fusani, L. & Gahr, M. 2006. Hormonal influence on song development: The role of oestrogen. *Neuroscience*, **138**, 939-946.
- Canoine, V., Fusani, L., Schlinger, B. & Hau, M. **In press**. Low Sex Steroids, High Steroid Receptors: Increasing the Sensitivity of the Non-Reproductive Brain. *J. Neurobiol.*
- Day, L. B., Fusani, L., Hernandez, E., Billo, T. J., Sheldon, K. S., Wise, P. M. & Schlinger, B. A. **In press**. Testosterone and its Effects on Courtship in Golden-Collared Manakins (*Manacus vitellinus*): Seasonal, Sex, and Age Differences. *Horm. Behav.*

Fusani, L., Day, L., Canoine, V., Reinemann, D., Hernandez, E. & Schlinger, B. **In press.**  
Androgen and the elaborate courtship behavior of a tropical lekking bird. *Horm. Behav.*

## REFERENCES

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### *Former supervisors*

Prof Manfred Gahr

Max-Planck-Institute for Ornithology, Postfach 1564, 82319 Seewiesen, Germany.

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Los Angeles, CA 90095-1527, USA.

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### *Independent references*

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Prof George Bentley

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