

Giorgio Vallortigara

Professore ordinario di Neuroscienze nell'Università di Trento

- s.c.r. eletto il 19 maggio 2017

Nato a Rovereto (TN) il 6 agosto 1959

Posizione attuale: Professore di Prima Fascia di 'Neuroscienze' (M-PSI/02)

Pro-Rettore alla Ricerca, Università di Trento

Formazione

Post-doc, 1991-1992, Sussex University

Dottorato di ricerca, 1990, Università di Padova

Laurea in Psicologia sperimentale (Summa cum laude)

Università di Padova, 1983

Posizioni ricoperte

Pro-Rettore alla Ricerca, Università di Trento

(Marzo 2015 -)

Direttore Centro Mente/Cervello (CIMeC)

29 ottobre 2012 - marzo 2015)

Direttore Vicario Centro Mente/Cervello CIMeC

(15 febbraio 2008 - 2012)

Professore ordinario

Facoltà Scienze Cognitive

Università Trento

(novembre 2007 -)

Adjunct Professor

School of Biological, Biomedical and Molecular Sciences

University of New England, Australia

(2007 -)

Preside della Facoltà di Psicologia

Università di Trieste

(2003 - 2006)

Direttore del Dipartimento di Psicologia

Università di Trieste

(Aprile 2003 - Ottobre 2003)

Professore ordinario (Psicobiologia e psicologia fisiologica) (Marzo 2003 - Ottobre 2007)

Università di Trieste

Professore straordinario (Psicobiologia e psicologia fisiologica) (Marzo 2000 - Marzo 2003)

Università di Trieste

Professore associato (Psicobiologia e psicologia fisiologica) (1999-2000)

Università di Trieste

Ricercatore universitario (Psicobiologia e psicologia fisiologica) (1991- 1999)

Università di Udine

Post-doc (1991)

University of Sussex, U.K.

Graduate Fellow (1990)

University of Sussex, U.K.

Studente di dottorato di ricerca (1985-1990)

Università di Padova

Laureato-frequentatore (1983-1985)

Università di Padova

Esperienze di ricerca

Visiting Professor

School of Biological, Biomedical and Molecular Sciences

University of New England, Australia

Research Fellow (1994)

Sussex Centre for Neuroscience, Sussex University, U.K.

Visiting Fellow (1992)

Sussex Centre for Neuroscience, Sussex University, U.K.

Visiting Fellow (1991)

Sussex Centre for Neuroscience, Sussex University, U.K.

Visiting Research Worker (1988)

Ethology and Neurophysiology Group,

School of Biology, Sussex University, U.K.

Attività professionali

- Etologia applicata presso la MultiTecno S.p.A. (1984-85)

- Consulente scientifico per il C.O.N.I. (Comitato Olimpico Nazionale Italiano) 1985

- Revisore per le riviste scientifiche:

Nature

Current Biology

Brain and Behavioral Sciences

Cognition
 Journal of Neuroscience
 BMC Biology
 Cognitive Brain Research
 European Journal of Neuroscience
 Current Anthropology
 Behavioural Brain Research
 Laterality
 Brain Research
 Behavioural Processes
 Ethology
 Brain and Language
 Journal of Comparative Psychology
 Animal Behaviour
 Pharmacology Biochemistry and Behavior
 Journal of Mind and Behavior
 Physiology and Behavior
 Perception
 Brain Research Bulletin
 Developmental Psychobiology
 Perception and Psychophysics
 International Journal of Comparative Psychology
 Bird Behavior
 Animal Cognition
 Journal of Comparative Psychology
 Psychological Review
 Journal of Experimental Psychology: General
 Journal of Experimental Psychology: Animal Behavior Processes
 Journal of Experimental Psychology: Learning, Memory and Cognition
 Neuropsychologia
 Psychological Science
 Behaviour
 Developmental Science
 Psychological Bulletin
 Neuroscience Letters
 Ibis
 Journal of Experimental Biology
 Cognition, Brain and Behavior
 Biology Letters
 Child Development Research
 Neuroscience
 Proceedings Royal Society of London B
 Journal of Cognitive Neuroscience
 Cell Biochemistry and Function
 Journal of the Optical Society of America
 Cerebral Cortex
 Hippocampus
 PLoS Biology
 Annals of the New York Academy of Sciences
 e-Life
 Nature Ecology & Evolution
 PLoS Computational Biology
 Philosophical Transactions of the Royal Society of London
 Nature Human Behaviour
 Nature Ecology & Evolution
 Proceedings of the National Academy of Sciences USA
 - Consulente e/o revisore per: Rockefeller Foundation, National Science Foundation USA, British Biological and Biotechnology Research Council, Wellcome Trust, Leakey Foundation, Italian MIUR, European Community ERC Starting Grant Program and Consolidator Grant Program; Panel ERC Advanced Grant (2015-2018).
 - Membro dello Scientific Advisory Board del MUSE (Museo Tridentino di Scienze Naturali)
 - Membro del Consiglio Direttivo del Museo Civico di Rovereto (2011-2012)
 - Membro del Consiglio di Amministrazione della Fondazione Museo Civico di Rovereto (2013 -)
 - Membro dell' Editorial Board delle riviste scientifiche "Animal Cognition", "Journal of Comparative Psychology", "International Journal of Comparative Psychology", "Frontiers in Behavioural Neuroscience", "Frontiers in Emotion Science", "Frontiers in Comparative Psychology", PsyCh Journal, "PeerJ" e "Giornale Italiano di Psicologia". Associate della rivista "Behavioral Brain Sciences".
 - Consulting Editor del "Journal of Comparative Psychology"
 - Membro del Comitato Scientifico della rivista "Le Scienze" (edizione italiana di Scientific American)
 - Membro del Comitato Direttivo della rivista "Sistemi Intelligenti"

- Membro del Comitato Direttivo della rivista "Reti, Saperi e Linguaggi - Italian Journal of Cognitive Sciences"
- Associate Editor della rivista scientifica internazionale "Frontiers in Comparative Psychology"
- Editor della rivista scientifica internazionale "Laterality: Asymmetries of Body, Brain and Cognition".

Interessi di ricerca

Cognizione animale, lateralizzazione e memoria nel cervello dei vertebrati, evoluzione delle asimmetrie cerebrali, cognizione spaziale, neurobiologia della memoria spaziale, percezione visiva.

Attività didattica

Ha insegnato cognizione animale, psicologia comparata ed evoluzionistica e neuroscienze comportamentali ed ha svolto attività di supervisione e di revisione di tesi di dottorato in queste discipline sia in università italiane che straniere.

Seminari e conferenze (selezione relativa agli ultimi due anni)

- * Centre for Neuroscience, Sussex University;
- * Dipartimento di Psicologia Generale, Università di Padova;
- * Dipartimento di Biologia, Università di Padova;
- * Laboratory of Experimental Psychology, Sussex University;
- * Brain Research Group, Open University, Milton Keynes;
- * FBK- Trento
- * Centre for Developmental Biology, King College,
- * London University
- * Dept. of Physiology, Univ. of Verona
- * Dept. Psychol., Université du Québec, Montreal
- * Dip. Sci. Zootechniche, Univ. Sassari
- * Dip. Psicol. Univ. di Firenze
- * Psychobiologie, Ruhr-Universität Bochum, Germany
- * Dept. of Biology and Preclinical Medicine, Univ. St. Andrews, U.K.
- * Konrad Lorenz Institute for Evolution and Cognition, Altenberg, Austria
- * SISSA, Cognitive Neuroscience Sector, Trieste, Italy
- * Dept. of Biology, Univ. of Groningen, The Netherlands
- * Dept. Psychologie, Univ. de Paris V
- * CNRS Neurosciences Fonctionnelles, Marseille, France
- * Accademia dei Lincei, Roma
- * School of Biological, Biomedical and Molecular Sciences, Univ. New England, Australia
- * School of Biological Sciences, National Australian University
- * Australian Academy of Sciences, Canberra, Australia
- * BioZentrum, Vienna University, Austria
- * Konrad Lorenz Institute of the Academy of Sciences, Wien
- * Istituto Italiano di Tecnologia, Genova
- * Université Paris Descartes, Paris
- * Collège de France, Paris
- * Central European University, Budapest
- * Ecole Polytechnique Fédérale de Lausanne, Human Brain Project

Premi e onorificenze

- 1996 Award of the Applied Vision Association for the best research presented at the Annual Meeting AVA: From Sensation to Visual Perception (1-3 April 1996, University of Reading, U.K.).
 - 2000 Research Grant Award of the Association for the Study of Animal Behaviour.
 - 2001 Research Grant Award of the Universities Federation for Animal Welfare.
 - 2004 Research Grant Award of the Waltham Foundation (U.K.)
 - 2005 Premio "Giovanni Maria Pace" per la divulgazione scientifica.
 - 2007 "Conferenza Lincea Croce", e Medaglia dell'Accademia Italiana dei Lincei.
 - 2007 Premio "Enrico Fermi - Città della Chimica" per la divulgazione scientifica.
 - Recipient of the "Faculty of Science Distinguished Visitor Award 2007", University of New England, Australia.
 - 2007 Appointed "Adjunct Professor", School of Biomedical and Molecular Sciences, University of New England, Australia.
 - 2010 - Research Grant Award Waltham Foundation
 - 2011 - Elected Fellow of the Royal Society of Biology, FRSB
 - 2011 - Elected Member of the Attention & Performance Advisory Council
 - 2012 - Awarded an ERC Advanced Research Grant
 - 2012 - Eletto Socio dell'Accademia degli Agiati
 - 2013 - Eletto Socio ordinario della Società di Scienze Civiche di Rovereto
 - 2013 - Selezione Giuria Scientifica del Premio letterario Galileo per la divulgazione scientifica - anno 2013
 - 2013 - Premio Ferrari Soave per la Biologia animale dell'Accademia delle Scienze di Torino
 - 2016 - Member of the American Association for the Advancement of Science (AAAS)
 - 2016 - Premio Geoffroy Saint Hilaire per l'Etologia, della Società Francese per l'Etologia e lo Studio del Comportamento Animale (SFECA).
 - 2016 - Doctor Rerum Naturalium Honoris Causa, for outstanding achievements in the field of psychobiology, University of Bochum, Germany
- Affiliazione a società scientifiche
- American Association for the Advancement of Science (AAAS)
 - Association for the Study of Animal Behaviour (ASAB)
 - Association for Psychological Science (APS)

- Psychonomic Society
- New York Academy of Sciences
- European Neuroscience Association
- European Brain and Behaviour Society
- International Society for Comparative Psychology
- International Brain Research Organization, IBRO

Principali conseguimenti nell'attività di ricerca

Ha ottenuto le prime evidenze relative ad asimmetrie cerebrali nelle funzioni superiori in specie non umane, in particolare relativamente ai processi di riconoscimento individuale negli uccelli; inoltre ha riportato per primo fenomeni di lateralità nei cosiddetti vertebrati inferiori (pesci e anfibi); su questi argomenti ha pubblicato diversi lavori scientifici su riviste quali *Nature*, *Current Biology*, e *Proceedings Royal Society*. Ha sviluppato una nuova ipotesi sull'evoluzione delle asimmetrie del cervello e del comportamento, basata su concetti di biologia evoluzionista e di teoria matematica dei giochi; ipotesi che è stata ben ricevuta nella comunità scientifica internazionale (con un "target article" su *Behavioral Brain Sciences* e resoconti giornalistici su riviste quali *Scientific American* e *Nature On-Line*). Si è occupato anche di cognizione animale, in particolare del riconoscimento di oggetti parzialmente occlusi, della percezione del movimento biologico e della codifica della geometria nei processi di orientamento spaziale. Su tutti questi argomenti il suo lavoro è noto a livello internazionale e molto citato. Complessivamente ha pubblicato più di 200 articoli su riviste internazionali peer-review, che hanno avuto a tutt'oggi un totale di più di 13000 citazioni con un h-index di 55 (source Scopus; mentre su Google Scholar l'h-index è pari a 64). Il suo lavoro è stato inoltre riportato in varie occasioni su *Faculty of 1000 Biology* e in numerosi volumi, sia specialistici sia di divulgazione scientifica (per es. in J. Vauclair (1996). *Animal Cognition*. Harvard: Harvard University Press; Pearce, J.M. (1997). *Animal Learning and Cognition*. Psychology Press, Hove, U.K.; S. Rose (1992). *The Making of Memory. From Molecules to Mind*, London: Bantam Press; L.J. Rogers (1997). *Minds of Their Own*, St. Leonards: Allen & Unwin; P.J. Kellman & M.E. Arterberry (1998). *The Cradle of Knowledge*, MIT Press; J. Hochberg (1998). *Perception and Cognition at Century's End*, Academic Press, San Diego; P. Bloom (2004). *Descartes' Baby: How the Science of Child Development Explains What Makes Us Human*. Basic Books, US.); G. Marcus (2004). *The Birth of the Mind*. Basic Books, New York); Shermer M. (2007). *The Mind of the Market. Compassionate Apes, Competitive Humans and Other Tales from Evolutionary Economics*. Times Books- Henry Holt and Co., N.Y.

Media

Le ricerche condotte sono state descritte in numerosi articoli pubblicati su vari testate internazionali e nazionali, tra i quali *New York Times*, *Daily Telegraph*, *Science Now*, *Nature News*, *Conocer Ciencia*, *Biology News*, *Scientific American*, *ABC News*, *BBC News*, *National Geographic*, *The Guardian*, *Focus*, *Wired*, *Corriere della Sera*, *La Repubblica*, *La Stampa*, *Il Sole 24 Ore*, *Panorama*, *Le Scienze*, *L'Espresso*, *Mente & Cervello*.

GIORGIO VALLORTIGARA - ELENCO DELLE PUBBLICAZIONI

Peer-reviewed full-length papers

2017

- (284) Versace, E., Spierings, M.J., Caffini, M., ten Cate, C., Vallortigara, G. (2017). Spontaneous generalization of abstract multimodal patterns in young domestic chicks. *Animal Cognition*, in press.
- (283) Versace, E., Fracasso, I., Baldan, G., Dalle Zotte, A., Vallortigara, G. (2017). Newborn chicks show inherited variability in early social predispositions for hen-like stimuli. *Scientific Reports*, 7, 40296; doi: 10.1038/srep40296.
- (282) Mayer, U., Rosa-Salva, O., Morbioli, F., Vallortigara, G. (2016). The motion of a living conspecific activates septal and preoptic areas in naive domestic chicks (*Gallus gallus*). *European Journal of Neuroscience*, 45: 423-432. doi:10.1111/ejn.13484
- (281) Vallortigara, G., Versace, E. (2017). Laterality at the Neural, Cognitive, and Behavioral Levels. In "APA Handbook of Comparative Psychology: Vol. 1. Basic Concepts, Methods, Neural Substrate, and Behavior", J. Call (Editor-in-Chief), pp. 557-577, American Psychological Association, Washington DC.

2016

- (280) Versace E, Schill J, Nencini AM, Vallortigara G (2016) Na? Chicks Prefer Hollow Objects. *PLoS ONE* 11(11): e0166425. doi:10.1371/journal.pone.0166425
- (279) Santolin, C., Rosa-Salva, O., Vallortigara, G., Regolin, L. (2016). Unsupervised statistical learning in newly-hatched chicks. *Current Biology*, 26: 1218-1220.
- (278) Andriano, M., Vallortigara, G., Antolini, R., Haase, A. (2016). Neonotonic-induced impairment of odour coding in the honeybee. *Scientific Reports*, 6, 38110; doi: 10.1038/srep38110.
- (277) Rosa-Salva, O., Grassi, M., Lorenzi, E., Regolin, L. Vallortigara, G. (2016). Spontaneous preference for visual cues of animacy in naïve domestic chicks: the case of speed changes. *Cognition*, Dec;157:49-60. doi: 10.1016/j.cognition.2016.08.014. Epub 2016 Sep 2.
- (276) Di Giorgio, E., Loveland, J.L., Mayer, U., Rosa-Salva, O., Versace, E., Vallortigara, G. (2016). Filial responses as predisposed and learned preferences: Early attachment in chicks and babies. *Behavioural Brain Research*, available online 8 September 2016.
- (275) Santolin, C., Rosa-Salva, O., Regolin, L., Vallortigara, G. (2016). Generalization of visual regularities in newly-hatched chicks (*Gallus gallus*). *Animal Cognition*, Sep;19(5):1007-17. doi: 10.1007/s10071-016-1005-2. Epub 2016 Jun 10.
- (274) Rugani, R., McCrink, K., de Hevia, M-D., Vallortigara, G., Regolin, L. (2016). Ratio abstraction over discrete magnitudes by newly hatched domestic chicks (*Gallus gallus*). *Scientific Reports*, 6, 30114; doi: 10.1038/srep30114
- (273) Mayer, U., Rosa-Salva, O., Lorenzi, E., Vallortigara, G. (2016). Social predisposition dependent neuronal activity in the intermediate medial mesopallium of domestic chicks (*Gallus gallus domesticus*). *Behavioural Brain Research*, 310: 93-102.
- (272) Spiezio, C., Regaiolli, B., Vallortigara, G. (2016). Motor and postural asymmetries in marsupials: Forelimb preferences in the red-necked wallaby (*Macropus rufogriseus*). *Behavioural Processes*, 128: 119-125.

- (271) Vallortigara G, Rosa Salva O (2016). Toolkits for cognition: From core-knowledge to genes. In Tucci, V. (Ed.) *Neurophenome: Cutting-edge Approaches and Technologies in Neurobehavioral Genetics*, Wiley-Blackwell. In press
- (270) Di Giorgio, E., Frasnelli, E., Rosa Salva, O., Scattoni, M.L., Puopolo, M., Tosoni, D., Simion, F., Vallortigara, G. (2016). Difference in Visual Social Predispositions Between Newborns at Low- and High-risk for Autism. *Scientific Reports*, 6, 26395; doi: 10.1038/srep26395.
- (269) Rugani, R., Vallortigara, G., Priftis, K., Regolin, L. (2016). Piece of Evidence. Commentary: Ancestral Mental Number Lines: What Is the Evidence? *Frontiers in Psychology*, 22 April 2016
| <http://dx.doi.org/10.3389/fpsyg.2016.00553>
- (268) Rugani, R., Vallortigara, G., Regolin, L. (2016). Mapping number to space in the two hemispheres of the avian brain. *Neurobiology of Learning and Memory*, 133: 13-18.
- (267) Girotto, V., Fontanari, L., Gonzalez, M., Vallortigara, G., Blaye, A. (2016). Young children do not succeed in choice tasks that imply evaluating chances. *Cognition*, 152: 32-39.
- (266) Paoli, M., Anesi, A., Antolini, R., Guella, G., Vallortigara, G., Haase, A. (2016). Differential odour coding of isotopomers in the honeybee brain. *Scientific Reports*, 21893; doi: 10.1038/srep21893.
- (265) Di Giorgio, E., Lunghi, M., Simion, F., Vallortigara, G. (2016). Visual cues of motion that trigger animacy perception at birth: the case of self-propulsion. *Developmental Science*, online: 21 Feb. 2016 | DOI: 10.1111/desc.12394
- (264) Mayer, U., Pecchia, T., Bingman, V., Vallortigara, G. (2016). Hippocampus and medial striatum dissociation during goal navigation by geometry or features in the domestic chick: An Immediate early gene study. *Hippocampus*, 26: 27-40. 2015
- (263) Versace, E., Vallortigara, G. (2015). Origins of knowledge: Insights from precocial species. *Frontiers in Behavioral Neuroscience*, 9: 338. doi: 10.3389/fnbeh.2015.00338.
- (262) Rogers, L.J.; Vallortigara, G. (2015). When and Why Did Brains Break Symmetry? *Symmetry*, 7: 2181-2194.
- (261) Vallortigara, G. (2015). Handedness: What Kangaroos tell us about our lopsided brains. *Current Biology*, 25: R654-R676 (Dispatch).
- (260) Lee, S.A., Ferrari, A., Vallortigara, G., Sovrano, V.A. (2015). Boundary primacy in spatial mapping: Evidence from zebrafish (*Danio rerio*). *Behavioural Processes*, 119: 116-122.
- (259) Potrich, D., Sovrano, V.A., Stancher, G., Vallortigara, G. (2015). Quantity discrimination by zebrafish (*Danio rerio*). *Journal of Comparative Psychology*, 29: 388-393.
- (258) Regaiolli, B., Spiezio, C., Vallortigara, G. (2015). Understanding primate lateralization: Handedness, target laterality and task complexity. *Laterality*, in press.
- (257) Rugani, R., Rosa Salva, O., Regolin, L., Vallortigara, G. (2015). Brain asymmetry modulates perception of biological motion in newborn chicks (*Gallus gallus*). *Behavioural Brain Research*, 290: 1-7.
- (256) Versace, E., Vallortigara, G. (2015). Forelimb preferences in human beings and other species: multiple models for testing hypotheses on lateralization. *Frontiers in Psychology*, 6: 233. doi: 10.3389/fpsyg.2015.00233
- (255) Lee, S.A., Tucci, V., Sovrano, V.A., Vallortigara, G. (2015). Working-memory vs. reference-memory tests of spatial navigation in mice (*Mus musculus*). *Journal of Comparative Psychology*, in press.
- (254) Rigosi, E., Haase, A., Rath, L., Anfora, G., Vallortigara, G., Szyszka, P. (2015). Asymmetric neural coding revealed by in vivo calcium imaging in the honey bee brain. *Proceedings of the Royal Society of London B*, 282: 20142571. <http://dx.doi.org/10.1098/rspb.2014.2571>
- (253) Rugani, R., Vallortigara, G., Priftis, K., Regolin, L. (2015). Number-space mapping in the newborn chick resembles humans' mental number line. *Science*, 347: 534-536.
- (252) Rosa Salva, O., Mayer, U., Vallortigara, G. (2015). Roots of a social brain: Developmental models of emerging animacy-detection mechanisms. *Neuroscience and Biobehavioral Reviews*, 50: 150-168. 2014
- (251) Vallortigara, G. (2014). Foundations of Number and Space Representations in Precocial Species. In "Evolutionary Origins and Early Development of Number Processing", pp. 35-66 (Eds., D.C. Geary, D.B. Bearch, K. Mann Koepke), Elsevier, New York.
- (250) Rugani, R., Vallortigara, G., Regolin, L. (2014). The use of proportion by young domestic chicks (*Gallus gallus*). *Animal Cognition*, in press.
- (249) Fontanari, L., Gonzalez, M., Vallortigara, G., Girotto, V. (2014). Probabilistic cognition in two Maya indigenous groups. *Proceedings of the National Academy of Sciences USA*, 111: 17075-17080.
- (248) Lee, S.A., Vallortigara, G. (2014). Bumblebees spontaneously map location of conspecific using geometry and features. *Learning and Motivation*, in press
- (247) Stancher G., R., Regolin L., Vallortigara G. (2015). Numerical discrimination by frogs (*Bombina orientalis*). *Animal Cognition*, 18: 219-229.
- (246) Chiandetti, C., Spelke, E.S., Vallortigara, G. (2014). Inexperienced newborn chicks use geometry to spontaneously reorient to an artificial social partner. *Developmental Science*, DOI: 10.1111/desc.12277
- (245) Rugani, R., Vallortigara, G., Regolin, L. (2014). At the root of the left-right asymmetries in spatial-numerical processing: From domestic chicks to human subjects. *Journal of Cognitive Psychology*, 27: 388-399.
- (244) Rosa Salva, O., Sovrano, V.A., Vallortigara, G. (2014). What can fish brains tell us about visual perception?. *Frontiers in Neural Circuits*, 8: 119. doi:10.3389/fncir.2014.00119
- (243) Quaresmini, C., Forrester, G.S., Spiezio, C., Vallortigara, G. (2014). Social environment elicits lateralized behaviors in gorillas and chimpanzees. *Journal of Comparative Psychology*, 128: 276-284.
- (242) Fontanari, L., Rugani, R., Regolin, L., Vallortigara, G. (2014). Use of kind information for object individuation in young domestic chicks. *Animal Cognition*, 17: 925-935.
- (241) Girotto, V., Pievani, T., Vallortigara, G. (2014). Supernatural beliefs: Adaptations for social life or by-products of cognitive adaptations? *Behaviour*, 151: 385-402.
- (240) Rugani, R., Vallortigara, G., Regolin, G. (2014). From small to large: numerical discrimination by young domestic chicks (*Gallus gallus*). *Journal of Comparative Psychology*, 128: 163-171.
- (239) Frasnelli, E., Haase, A., Rigosi, E., Anfora, G., Rogers, L.J., Vallortigara, G. (2014). The bee as a model to

investigate brain and behavioural asymmetries. *Insects*, 5, 120-138. doi:10.3390/insects5010120

2013

(238) Lee, S.A., Vallortigara, G., Fiore, M., Sovrano, V.A. (2013). Navigation by environmental geometry: the use of zebrafish as a model. *Journal of Experimental Biology*, 216: 3693-3699.

(237) Rogers, L.J., Rigosi, E., Frasnelli, E., Vallortigara, G. (2013). A right antenna for social behaviour in honeybees. *Scientific Reports*, 3, 2045.

(236) Siniscalchi, M., Lusito, R., Vallortigara, G., Quaranta, A. (2013). Seeing left- or right-asymmetric tail wagging produces different emotional responses in dogs. *Current Biology*, 23: 2279-2282.

(235) Rugani, R., Cavazzana, A., Vallortigara, G., Regolin, L. (2013). One, two, three, four, or is there something more? Numerical discrimination in day-old domestic chicks. *Animal Cognition*, 16: 557-564.

(234) Sovrano, V.A., Potrich, D., Vallortigara, G. (2013). Learning of geometry and features in bumblebees (*Bombus terrestris*). *Journal of Comparative Psychology*, 127: 312-318.

(233) Rugani, R., Vallortigara, G., Regolin, L. (2013). Numerical abstraction in young domestic chicks (*Gallus gallus*). *PLoS One*, 8(6): e65262. Doi: 10.1371/journal.pone.0065262

(232) Rosa Salva O., Rugani, R., Regolin, L., Vallortigara, G. (2013). Perception of the Ebbinghaus illusion in four-day-old domestic chicks (*Gallus gallus*). *Animal Cognition*, 16: 895-906.

(231) Stancher G, Sovrano V.A., Potrich, D., Vallortigara, G. (2013). Discrimination of small quantities by fish (redtail splitfin, *Xenotoca eiseni*). *Animal Cognition*, 16: 307 - 312.

(230) Chiandetti, C., Vallortigara, G. (2013). The origins of physics, number and space cognition: Insights from a chick's brain. *Human Evolution*, 28: 1-12.

(229) Mascalzoni, E., Regolin, L., Vallortigara, G., Simion, F. (2013). The cradle of causal reasoning: newborns' preference for physical causality. *Developmental Science*, 16: 327-335.

(228) Chiandetti, C., Galliussi, J., Andrew, R.J., Vallortigara, G. (2013). Early-light embryonic stimulation suggests a second route, via gene activation, to cerebral lateralization in vertebrates. *Scientific Reports*, 3, 2701; DOI:10.1038/srep02701.

2012

(227) Rosa Salva, O., Regolin, L., Mascalzoni, E., Vallortigara, G., 2012. Cerebral and behavioural asymmetry in animal social recognition. *Comparative Cognition & Behavior Reviews*, 7: 110-138. doi:10.3819/ccbr.2012.70006

(226) Vallortigara, G. (2012). Aristotle and the chicken: Animacy and the origins of beliefs. In "The Theory of Evolution and its Impact" (A. Fasolo, ed.), pp. 189-200, Springer, New York.

(225) Forrester, G.S., Quaresmini, C., Leavens, D.A., Spiezio, C. Vallortigara, G. (2012). Target animacy influences chimpanzee handedness. *Animal Cognition*, 15: 1121-1127.

(224) Regolin, L., Daisley, J.N., Rosa-Salva, O., Vallortigara, G. (2012). Advantages of a lateralised brain for reasoning about the social world in chicks. In "Behavioral Lateralization in Vertebrates" (D. Csermely and L. Regolin, eds.), PP. 39-54, Springer Verlag, Berlin.

(223) Pecchia, T., Gagliardo, A., Filaninno, C., Ioal?P., Vallortigara, G. (2012). Navigating Through an Asymmetrical Brain: Lateralisation and Homing in Pigeon. In "Behavioral Lateralization in Vertebrates" (D. Csermely and L. Regolin, eds.), PP. 107-124, Springer Verlag, Berlin.

(222) Rosa Salva, O., Regolin, L., Vallortigara, G. (2012). Lateralised social learning in chicks. In "Behavioral Lateralization in Vertebrates" (D. Csermely and L. Regolin, eds.), PP. 71-86, Springer Verlag, Berlin.

(221) FRASNELLI, E., VALLORTIGARA, G., ROGERS, L.J. (2012). Left-right asymmetries of behaviour and nervous system in invertebrates. *Neuroscience and Biobehavioral Reviews*, 36: 1273-1291.

(220) VALLORTIGARA G. (2012). Core knowledge of object, number, and geometry: A comparative and neural approach. *Cognitive Neuropsychology*, 29: 213-236.

(219) SOVRANO, V.A., RIGOSI, E., VALLORTIGARA, G. (2012). Spatial reorientation by geometry in bumblebees. *PLoS ONE*, 7 (5): e37449.

(218) LEE, S.A., SPELKE ES, VALLORTIGARA G. (2012). Chicks, like children, spontaneously reorient by three-dimensional environmental geometry, not by image matching. *Biology Letters*, 8: 492-494.

(217) LEE, S.A. SOVRANO, V.A., VALLORTIGARA, G. (2012). Independent Effects of Geometry and Landmark in a Spontaneous Reorientation Task: A Study of Two Species of Fish. *Animal Cognition*, 15: 861-870.

(216) PECCHIA, T., VALLORTIGARA, G. (2012). Spatial reorientation by geometry with freestanding objects and extended surfaces: A unifying view. *Proceedings of the Royal Society of London B*, 279: 2228-2236.

(215) ROSA SALVA O., REGOLIN, L., VALLORTIGARA, G. (2012). Inversion of contrast polarity abolishes spontaneous preferences for face-like stimuli in newborn chicks. *Behavioural Brain Research*, 228: 133-143.

(214) TOMMASI, L., CHIANDETTI, C., PECCHIA, T., SOVRANO, V.A., VALLORTIGARA, G. (2012). From natural geometry to spatial cognition. *Neuroscience and Biobehavioral Reviews*, 36: 799-824.

2011

(213) FORRESTER, G.S., LEAVENS, D.A., QUARESMINI, C., VALLORTIGARA, G. (2011). Target animacy influences gorilla handedness. *Animal Cognition*, 14: 903-907.

(212) MASCALZONI, E., OSORIO, D., REGOLIN, L., VALLORTIGARA, G. (2011). Symmetry perception by poultry chicks and its implications for 3-D object recognition. *Proceedings of the Royal Society of London B*, 279: 841-846.

(211) CHIANDETTI, C., VALLORTIGARA, G. (2011). Chicks like consonant music. *Psychological Science*, 22: 1270-1273.

(210) HAASE, A RIGOSI, E., FRASNELLI, E., TRONA, F., TESSAROLO, F , VINEGONI, C ANFORA, G , VALLORTIGARA, G., ANTOLINI, R (2011). A multimodal approach for tracing lateralisation along the olfactory pathway in the honeybee through electrophysiological recordings, morpho-functional imaging, and behavioural studies. *European Biophysics Journal with Biophysics Letters*, 40: 1247-1258.

(209) RUGANI, R., REGOLIN, L., VALLORTIGARA, G. (2011). Summation of large numerosness by newborn chicks. *Frontiers in Psychology*, 2:179.

doi:10.3389/fpsyg.2011.00179

- (208) FONTANARI, L., RUGANI, R., REGOLIN, L., VALLORTIGARA G. (2011). Object individuation in 3-day-old chicks: use of property and spatiotemporal information. *Developmental Science*, 14: 1235-1244.
- (207) KELLY, D.M., DUROCHER, S., CHIANDETTI, C., VALLORTIGARA, G. (2011). A Misunderstanding of Principal and Medial Axes? Reply to Sturz and Bodily (2011). *Biology Letters*, 7: 649-650.
- (206) PECCHIA, T., GAGLIARDO, A., VALLORTIGARA G. (2011). Stable Panoramic Views Facilitate Snap-Shot Like Memories for Spatial Reorientation in Homing Pigeons *PLoS ONE*, 6(7): e22657 DOI: 10.1371/journal.pone.0022657
- (205) FRASNELLI, E., VALLORTIGARA, G. ROGERS, L.J. (2011). Origins of brain asymmetry: Lateralization of odour memory recall in primitive Australian stingless bees. *Behavioural Brain Research*, 224: 121-127.
- (204) SINISCALCHI M. SASSO, R., PEPE, A.M., DIMATTEO, S., VALLORTIGARA, G., QUARANTA, A. (2011). Sniffing with the right nostril: Lateralization of response to odour stimuli by dogs. *Animal Behaviour*, 82: 399-404.
- (203) DAISLEY, J.N., ROSA SALVA, O., REGOLIN, L., VALLORTIGARA, G. (2011). Social cognition and learning mechanisms: Experimental evidence in domestic chicks. *Interaction Studies*, 12(2): 208-232.
- (202) SINISCALCHI, M., FRANCHINI, D., PEPE, A.M., SASSO, R., DIMATTEO, S., VALLORTIGARA, G., QUARANTA, A. (2011). Volumetric assessment of cerebral asymmetries in dogs. *Laterality*, 16(5): 528-536.
- (201) ANFORA G, RIGOSI E, FRASNELLI E, RUGA, V., TRONA, F., VALLORTIGARA, G. (2011). Lateralization in the Invertebrate Brain: Left-Right Asymmetry of Olfaction in Bumble Bee, *Bombus terrestris*. *PLoS ONE*, 6(4): e18903.
- (200) ROSA SALVA O, FARRONI T, REGOLIN L, VALLORTIGARA G, JOHNSON M.H. (2011). The Evolution of Social Orienting: Evidence from Chicks (*Gallus gallus*) and Human Newborns. *PLoS ONE*, 6(4): e18802.
- (199) REGOLIN L, RUGANI R, STANCHER G, VALLORTIGARA G. (2011). Spontaneous discrimination of possible and impossible objects by newly hatched chicks. *Biology Letters*, 7: 654-657.
- (198) RIGOSI E, FRASNELLI E, VINEGONI C, ANTOLINI R, ANFORA G, VALLORTIGARA G, HAASE A. (2011). Searching for anatomical correlates of olfactory lateralization in the honeybee antennal lobes: A morphological and behavioural study. *Behavioural Brain Research*, 221: 290-294.
- (197) CHIANDETTI C, VALLORTIGARA G. (2011). Intuitive physical reasoning about occluded objects by inexperienced chicks. *Proceedings of the Royal Society of London, B*, 278: 2621-2627.
- (196) RUGANI, R., VALLORTIGARA, G., VALLINI, B., REGOLIN, L. (2011). Asymmetrical number-space mapping in the avian brain. *Neurobiology of Learning and Memory*, 95: 231-238.
- (195) HAASE, A. RIGOSI, E., TRONA, F., ANFORA, G., VALLORTIGARA, G., ANTOLINI, R., VINEGONI, C. (2011). In-vivo two-photon imaging of the honey bee antennal lobe. *Biomedical Optics Express*, 2:131-138..
- (194) KELLY, D.M., CHIANDETTI, C., VALLORTIGARA, G. (2011). Re-orienting in space: Do animals use global or local geometry strategies? *Biology Letters*, 7: 372-375.
- (193) GAGLIARDO, A., FILANNINO, C., IOAL?P., PECCHIA, T., WIKELSKI, M., VALLORTIGARA, G. (2011). Olfactory lateralization in homing pigeons: a GPS study on birds released with unilateral olfactory inputs. *Journal of Experimental Biology*, 214: 593-598.
- (192) VALLORTIGARA, G., CHIANDETTI, C., SOVRANO, V.A. (2011). Brain asymmetry (animal). *Wiley Interdisciplinary Reviews: Cognitive Science*, 2: 146-157 DOI: 10.1002/wcs.100
- 2010
- (191) HAUN, D. B. M., JORDAN, F., VALLORTIGARA, G., & CLAYTON, N. (2010). Origins of spatial, temporal and numerical cognition: Insights from animal models. *Trends in Cognitive Sciences*, 14: 477-481. doi:10.1016/j.tics.2010.09.006.
- (190) RUGANI, R., REGOLIN, L., VALLORTIGARA, G. 2010. Imprinted numbers: Newborn chicks' sensitivity to number vs. continuous extent of objects they have been reared with. *Developmental Science*, 13: 790-797.
- (189) PECCHIA, T., VALLORTIGARA, G. (2010). View-based strategy for reorientation by geometry. *Journal of Experimental Biology*, 213: 2987-2996.
- (188) VALLORTIGARA, G., REGOLIN, L., CHIANDETTI, C., RUGANI, R. (2010). Rudiments of mind: Insights through the chick model on number and space cognition in animals. *Comparative Cognition and Behavior Reviews*, 5: 78-99.
- (187) SINISCALCHI, M., SASSO, R., PEPE, A.M., DIMATTEO, S., VALLORTIGARA, G., QUARANTA, A. (2010). Catecholamine plasma levels following immune-stimulation with rabies vaccine in dogs selected for their paw preferences. *Neuroscience Letters*, 476: 142-145.
- (186) ROSA SALVA, O., DAISLEY, J.N., REGOLIN, L. VALLORTIGARA, G. (2010). Time dependent lateralization of social learning in the domestic chick (*Gallus gallus domesticus*): effects of retention delays in the observed lateralization pattern. *Behavioural Brain Research*, 212: 152-158.
- (185) VALLORTIGARA, G., CHIANDETTI, C., RUGANI, R., SOVRANO, V.A., REGOLIN, L. (2010). *Animal Cognition*. Wiley Interdisciplinary Reviews: Cognitive Science, 1: 882-893 .
- (184) FRASNELLI, E., ANFORA, G., TRONA, F., TESSAROLO, F., VALLORTIGARA, G. (2010). Morpho-functional asymmetry of the olfactory receptors of the honeybee (*Apis mellifera*). *Behavioural Brain Research*, 209: 221-225.
- (183) FRASNELLI, E., VALLORTIGARA, G., ROGERS, L.J. (2010). Response competition associated with right-left antennal asymmetries of new and old olfactory memory traces in honeybees. *Behavioural Brain Research*, 209: 36-41.
- (182) SINISCALCHI, M., SASSO, R., PEPE, A.M., VALLORTIGARA, G., QUARANTA, A. (2010). Dogs turn left to emotional stimuli. *Behavioural Brain Research*, 208: 516-521.
- (181) PECCHIA, T., VALLORTIGARA, G. (2010). Re-orienting strategies in a rectangular array of landmarks by domestic chicks (*Gallus gallus*). *Journal of Comparative Psychology*, 124: 147-158.
- (180) BROWN, J., KAPLAN, G. , ROGERS, L.J. , VALLORTIGARA, G. (2010). Perception of biological motion in common marmosets (*Callithrix jacchus*): by females only. *Animal Cognition*, 13: 555-564.
- (179) CHIANDETTI, C., VALLORTIGARA, G. (2010). Animals' representation of enclosed spaces: Evidence for use of a similar frame of reference following different disorientation procedures in the domestic chick (*Gallus gallus*). *Journal of Comparative Psychology*, 124: 139-146.
- (178) RUGANI, R., KELLY, D.M., SZELEST, I., REGOLIN, L., VALLORTIGARA, G. (2010). Is it only humans that count

from left to right? *Biology Letters*, 6: 290-292.

(177) Chiandetti, C., Vallortigara, G. (2010). Experience and geometry: Controlled-rearing studies with chicks. *Animal Cognition*, 13: 463-470.

(176) Mascalzoni, E., Regolin, L., Vallortigara, G. (2010). Innate sensitivity for self-propelled causal agency in newly hatched chicks. *Proceedings of the National Academy of Sciences USA*, 107: 4483-4485.

(175) DAISLEY, J.N., VALLORTIGARA, G., REGOLIN, L. (2010). Logic in an asymmetrical (social) brain: Transitive inference in the young domestic chick. *Social Neuroscience*, 5: 309-319.

(174) ANFORA, G., FRASNELLI, E., MACCAGNANI, B., ROGERS, L.J., VALLORTIGARA, G. (2010). Behavioural and electrophysiological lateralization in a social (*Apis mellifera*) and in a non-social (*Osmia cornuta*) species of bee. *Behavioural Brain Research*, 206: 236-239.

(173) SALVA, O.R., REGOLIN, L., VALLORTIGARA, G. (2010). Faces are special for chicks: Evidence for inborn domain-specific mechanisms underlying spontaneous preferences for face-like stimuli. *Developmental Science*, 13: 565-577. 2009

(172) MORGANTE, M., VALLORTIGARA, G. (2009). Animal welfare: Neuro-cognitive approaches. *Italian Journal of Animal Sciences*, 8: 255-264.

(171) VALLORTIGARA, G. (2009). Original Knowledge and the Two Cultures. In: *The Two Cultures: Shared Problems*. Edited by Carafoli E, Danieli GA, Longo G.O., pp. 125-145, Springer Verlag.

(170) ROSA SALVA, O., DAISLEY, J.N., REGOLIN, L., VALLORTIGARA, G. (2009). Lateralization of social learning in the domestic chick (*Gallus gallus domesticus*): Learning to avoid. *Animal Behaviour*, 78: 847-856.

(169) CLARA, E., REGOLIN, L., VALLORTIGARA, G., ROGERS, L.J. (2009). Chicks prefer to peck at insect-like elongated stimuli moving in a direction orthogonal to their longer axis. *Animal Cognition*, 12: 755-765.

(168) MACNEILAGE, P.F., ROGERS, L.J., VALLORTIGARA, G. (2009). Origins of the left and right brain. *Scientific American*, 301: 60-67.

(167) RUGANI, R., FONTANARI, L., SIMONI, E., REGOLIN, L., VALLORTIGARA, G. (2009). Arithmetic in newborn chicks. *Proceedings of the Royal Society of London B*, 276: 2451-2460.

(166) VALLORTIGARA, G., SOVRANO, V.A., CHIANDETTI, C. (2009). Doing Socrates Experiment Right: Controlled-rearing Studies of Geometrical Knowledge in Animals Current opinion in Neurobiology, 19: 20-26.

(165) GHIRLANDA, S., FRASNELLI, E., VALLORTIGARA, G. (2009). Intraspecific competition and coordination in the evolution of lateralization. *Philosophical Transactions of the Royal Society of London B*, 364: 861-866.

(164) MASCALZONI, E., REGOLIN, L., VALLORTIGARA, G. (2009). Mom's shadow: structure-from-motion in newly-hatched chicks as revealed by an imprinting procedure. *Animal Cognition*, 12: 389-400.

(163) CHIANDETTI, C., VALLORTIGARA, G. (2009). Effects of embryonic light stimulation on the ability to discriminate left from right in the domestic chick. *Behavioural Brain Research*, 198: 240-246.

(162) VALLORTIGARA, G. (2009). Animals as natural geometers. In "Cognitive Biology: Evolutionary and Developmental Perspectives on Mind, Brain and Behavior" (L. Tommasi, L. Nadel, M. Peterson, eds), MIT Press, pp. 83-104, Cambridge, Ma. 2008

(161) ROGERS, L.J., VALLORTIGARA, G. (2008). From antenna to antenna: lateral shift of olfactory memory in honeybees. *PLoS One*, 3(6): e2340. doi:10.1371/journal.pone.0002340.

(160) VALLORTIGARA, G., SNYDER, A., KAPLAN, G., BATESON, P.P.G., CLAYTON, N.S., ROGERS, L.J. (2008). Are animals autistic savants? *PLoS Biology*, 6: 208-214.

(159) CHIANDETTI C., VALLORTIGARA, G. (2008). Spatial reorientation in large and small enclosures: Comparative and developmental perspectives. *Cognitive Processing*, 1612-4782 (Print) 1612-4790 (Online).

(158) RUGANI, R., REGOLIN, L., VALLORTIGARA, G. (2008). Discrimination of small numerosities in young chicks. *Journal of Experimental Psychology: Animal Behavior Processes*, 34: 388-399.

(157) CHIANDETTI C., VALLORTIGARA, G. (2008). Is there an innate geometric module? Effects of experience with angular geometric cues on spatial reorientation based on the shape of the environment. *Animal Cognition*, 11: 139-146. 2007

(156) QUARANTA, A., SINISCALCHI, M., ALBRIZIO, M., VOLPE, S., BUONAVOGLIA, C., VALLORTIGARA, G. (2008). Influence of behavioural lateralization on interleukin-2 and interleukin-6 gene expression in dogs before and after immunization with rabies vaccine. *Behavioural Brain Research*, 186: 256-260.

(155) VERSACE, E., MORGANTE, M., PULINA, G., VALLORTIGARA, G. (2007). Behavioural lateralization in sheep (*Ovis aries*). *Behavioural Brain Research*, 184: 72-80.

(154) QUARANTA, A., SINISCALCHI, M., VALLORTIGARA, G. (2007). Asymmetric tail-wagging responses by dogs to different emotive stimuli. *Current Biology*, 17: 199-201.

(153) CHIANDETTI, C., CLARA, E., REGOLIN, L., TOMMASI, L., VALLORTIGARA, G. (2007). Plasticity in the avian brain: From molecular to behavioral neurobiology. In "Evolutionary Molecular Strategies and Plasticity" (Canonaco, M., Facciolo, M., eds.), pp. 187-214, Research Signpost, Fort. P.O. Trivandrum, Kerala, India, ISBN: 81-308-0135-3.

(152) MASCETTI, G.G., RUGGER, M., VALLORTIGARA, G., BOBBO, D. (2007). Monocular-unihemispheric sleep and visual discrimination learning in the domestic chick. *Experimental Brain Research*, 176: 70-84.

(151) CHIANDETTI, C., REGOLIN, L., SOVRANO, V.A., VALLORTIGARA, G. (2007). Spatial reorientation: The effects of space size on the encoding of landmark and geometry information. *Animal Cognition*, 10: 159-168.

(150) BOBBO, D., MASCETTI, G.G., FONDA, F., VALLORTIGARA, G. (2007) Monocular sleep following passive avoidance learning in chicks. *Behavioural Brain Research*, 178: 305-312.

(149) ZUCCA, P., MILOS, N., VALLORTIGARA, G. (2007). Piagetian object permanence and its development in Eurasian Jays (*Garrulus glandarius*). *Animal Cognition*, 10: 243-258.

(148) GAGLIARDO, A., PECCHIA, T., SAVINI, M., ODETTI, F., IOALE, P., VALLORTIGARA, G. (2007). Olfactory lateralization in homing pigeons: Initial orientation of birds receiving a unilateral olfactory input. *European Journal of Neuroscience*, 25: 1511-1516.

- (147) RUGANI, R., REGOLIN, L., VALLORTIGARA, G. (2007). Rudimental numerical competence in 5-day-old domestic chicks: Identification of ordinal position. *Journal of Experimental Psychology: Animal Behavior Processes*, 33: 21-31.
- (146) CLARA, E., REGOLIN, L., VALLORTIGARA, G. (2007). Preference for symmetry is experience-dependent in newborn chicks. *Journal of Experimental Psychology: Animal Behavior Processes*, 33:12-20.
- (145) SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2007). How fish do geometry in large and in small spaces. *Animal Cognition*, 10: 47-54.
- (144) SALVA, O.R., REGOLIN, L., VALLORTIGARA, G. (2007). Chicks discriminate human gaze with their right hemisphere. *Behavioural Brain Research*, 177:15-21.
- (143) CLARA, E., REGOLIN, L., VALLORTIGARA, G., ROGERS, L.J. (2007). Perception of the stereokinetic illusion by the common marmoset (*Callithrix jacchus*). *Animal Cognition*, 10: 135-140.
- 2006
- (142) DELLA CHIESA, A., SPERANZA, M., TOMMASI, L., VALLORTIGARA, G. (2006). Spatial cognition based on geometry and landmarks in the domestic chick (*Gallus gallus*). *Behavioural Brain Research*, 175: 119-127.
- (141) DELLA CHIESA, A., PECCHIA, T., TOMMASI, L., VALLORTIGARA, G. (2006). Multiple landmarks, the encoding of environmental geometry and the spatial logics of a dual brain. *Animal Cognition*, 9: 281-293.
- (140) BOBBO, D., VALLORTIGARA, G., MASCETTI, G.G. (2006). The effects of early post-hatching changes of imprinting object on the pattern of monocular/unihemispheric sleep of domestic chick. *Behavioural Brain Research*, 170: 23-28.
- (139) STANCHER, G., CLARA, E., REGOLIN, L., VALLORTIGARA, G. (2006). Lateralised righting behavior in the tortoise (*Testudo hermanni*). *Behavioural Brain Research*, 173: 315-319.
- (138) BOBBO, D., VALLORTIGARA, G., MASCETTI, G.G. (2006). Effects of social interaction on monocular/unihemispheric sleep in male and female domestic chicks. *Biological Psychology*, 73: 213-219.
- (137) VALLORTIGARA, G. (2006). The evolutionary psychology of left and right: Costs and benefits of lateralization. *Developmental Psychobiology*, 48: 418-427.
- (136) SOVRANO, V.A., VALLORTIGARA, G. (2006). Dissecting the geometric module: A sense-linkage for metric and landmark information in animals' spatial reorientation. *Psychological Science*, 17: 616-621.
- (135) VALLORTIGARA, G., REGOLIN, L. (2006). Animal brain lateralization. *Cognitive, ontogenetic and phylogenetic aspects*. *Cognition, Brain and Behaviour*, 10: 187-210.
- (134) CLARA, E., REGOLIN, L., VALLORTIGARA, G., ZANFORLIN, M. (2006). Domestic chicks perceive stereokinetic illusions. *Perception*, 35: 983-992.
- (133) VALLORTIGARA, G., REGOLIN, L. (2006). Gravity bias in the interpretation of biological motion by inexperienced chicks. *Current Biology*, 16: 279-280.
- (132) VALLORTIGARA, G. (2006). The Cognitive Chicken: Visual and Spatial Cognition in a Non-Mammalian Brain. In: *Comparative Cognition: Experimental Explorations of Animal Intelligence* (E.A. Wasserman & T.R. Zentall, eds.), pp. 41-58, Oxford University Press, Oxford, U.K.
- (131) QUARANTA, A., SINISCALCHI, M., FRATE, A., IACOVIELLO, R., BUONAVOGLIA, VALLORTIGARA, C. (2006). Lateralised behaviour and immune response in dogs: Relations between paw preference and Interferon- γ , Interleukin-10 and IgG antibodies production. *Behavioural Brain Research*, 166: 236-240.
- (130) VALLORTIGARA, G. (2006). The Evolution of Behavioural and Brain Asymmetries: Bridging together Neuropsychology and Evolutionary Biology. In: *"Behavioral and Morphological Asymmetries in Vertebrates"*, edited by Yegor Malashichev and Wallace Deckel, pp. 1-20, Landes Bioscience, Austin TX, USA.
- 2005
- (129) VALLORTIGARA, G., REGOLIN, L., MARCONATO, F. (2005). Visually inexperienced chicks exhibit a spontaneous preference for biological motion patterns. *PLoS Biology*, 3(7): 1312-1316 (e208).
- (128) DIEKAMP, B., REGOLIN, L., GUNTURKUN, O., VALLORTIGARA, G. (2005). A left-sided visuospatial bias in birds. *Current Biology*, 15: R372-R373.
- (127) GAGLIARDO, A., VALLORTIGARA, G., NARDI, D., BINGMAN, V.P. (2005). A lateralized avian hippocampus: Preferential role of the left hippocampal formation in homing pigeon sun-compass based spatial learning. *European Journal of Neuroscience*, 22: 2549-2559.
- (126) REGOLIN, L., GARZOTTO, B., RUGANI, R., PAGNI, P., VALLORTIGARA, G. (2005). Working memory in the chick: Parallel and lateralized mechanisms for encoding of object- and position-specific information. *Behavioural Brain Research*, 157: 1-9. IF=2.817
- (125) ZUCCA, P., ANTONELLI, F., VALLORTIGARA, G. (2004). A comparative analysis of detour behaviour in three species of birds, herring gulls (*Larus cachinnans*), canaries (*Serinus canaria*) and quails (*Coturnix sp.*). *Animal Cognition*, 8: 122-128. IF=2.017.
- (124) GAGLIARDO, A., ODETTI, F., IOALE' P., PECCHIA, T., VALLORTIGARA, G. (2005). Functional asymmetry of left and right avian piriform cortex in homing pigeons' navigation. *European Journal of Neuroscience*, 22: 189-194.
- (123) GEORTCHEV, V., STOIANOV, I., KRASTEVA, R., BONEVA, A., BATCHVAROV, D., STANISHEV, K., ZAHARIEV, R., VALLORTIGARA, G. (2005). Digital communication for telemetric multi-neuron recordings, *Academic Open Internet Journal* Vol.16
- <http://www.acadjournal.com/2005/v16/part6/p3/> (122) REGOLIN, L., RUGANI, R., PAGNI, P., VALLORTIGARA, G. (2005). Delayed search for a social and a non-social goal object by the young domestic chick (*Gallus gallus*). *Animal Behaviour*, 70: 855-864.
- (121) VALLORTIGARA, G., FERUGLIO, M., SOVRANO, V.A., (2004). Reorientation by geometric and landmark information in environments of different spatial size. *Developmental Science*, 8: 393-401.
- (120) SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2005). Animals' use of landmarks and metric information to reorient: Effects of the size of the experimental space. *Cognition*, 97: 121-133.
- (119) VENTOLINI, N., FERRERO, E., SPONZA, S., DELLA CHIESA, A., ZUCCA, P., VALLORTIGARA, G. (2005). Laterality in the wild: preferential hemifield use during predatory and sexual behaviour in the Black winged stilt

(*Himantopus himantopus*). *Animal Behaviour*, 69: 1077-1084.

(118) VALLORTIGARA, G., ROGERS, L.J. (2005). Survival with an asymmetrical brain: Advantages and disadvantages of cerebral lateralization. *Behavioral and Brain Sciences*, 28: 575-589.

(117) CLARA, E., REGOLIN, L., VALLORTIGARA, G. (2005). Visual lateralization, form preferences and secondary imprinting in the domestic chick. *Laterality*, 10: 487-502.

(116) VALLORTIGARA, G., ROGERS, L.J. (2005). Forming an asymmetrical brain: Genes, environment and evolutionary stable strategies (Response to commentary). *Behavioral and Brain Sciences*, 28: 615-623.

(115) CHIANDETTI, C., REGOLIN, L., ROGERS, L.J., VALLORTIGARA, G. (2005). Effects of light stimulation in embryo on the use of position-specific and object-specific cues in binocular and monocular chicks. *Behavioural Brain Research*, 163: 10-17.

2004

(114) VALLORTIGARA, G., PAGNI, P., SOVRANO, V.A. (2004). Separate geometric and non-geometric modules for spatial reorientation: Evidence from a lopsided animal brain. *Journal of Cognitive Neuroscience*, 16: 390-400.

(113) VALLORTIGARA, G. (2004). Visual cognition and representation in birds and primates. In "Vertebrate Comparative Cognition: Are Primates Superior to Non-Primates?" (L.J. Rogers, G. Kaplan, eds.), pp.57-94, New York, Kluwer Academic/Plenum Publishers.

(112) MASCETTI, G.G., BOBBO, D., RUGGER, M., VALLORTIGARA, G. (2004). Monocular sleep in male domestic chicks. *Behavioural Brain Research*, 153: 447-452.

(111) GHIRLANDA, S., VALLORTIGARA, G. (2004). The evolution of brain lateralization: A game theoretical analysis of population structure. *Proceedings of the Royal Society B*, 271: 853-857.

(110) REGOLIN, L., MARCONATO, F., VALLORTIGARA, G. (2004). Hemispheric differences in the recognition of partly occluded objects by newly-hatched domestic chicks (*Gallus gallus*). *Animal Cognition*, 7: 162-170.

(109) QUARANTA, A., SINISCALCHI, M., FRATE, A., VALLORTIGARA, G. (2004). Paw preference in dogs: relations between lateralised behaviour and immunity. *Behavioural Brain Research*, 153: 521-525.

(108) ROGERS, L.J., ZUCCA, P., VALLORTIGARA, G. (2004). Advantages of having a lateralized brain. *Proceedings of the Royal Society B, Biology Letters*, 271: 420- 422.

(107) TOMMASI, L., VALLORTIGARA, G. (2004). Lateralization of spatial cognition in the domestic chick (*Gallus gallus*): Sex- and task-related effects. *Behavioural Brain Research*, 155: 85-96.

(106) REGOLIN, L., GARZOTTO, B., RUGANI, R., PAGNI, P., VALLORTIGARA, G. (2004). Working memory in the chick: Parallel and lateralized mechanisms for encoding of object- and position-specific information. *Behavioural Brain Research*, 157: 1-9.

2003

(105) TOMMASI, L., GAGLIARDO, A., ANDREW, R.J., VALLORTIGARA, G. (2003). Separate processing mechanisms for encoding geometric and landmark information in the avian hippocampus. *European Journal of Neuroscience*, 17: 1695-1702.

(104) VALENTI, A., SOVRANO, V.A., ZUCCA, P., VALLORTIGARA, G. (2003). Visual lateralization in quails. *Laterality*, 8: 67-78.

(103) SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2003). Modularity as a fish views it: Conjoining geometric and nongeometric information for spatial reorientation. *Journal of Experimental Psychology: Animal Behavior Processes*, 29: 199-210.

2002

(102) VALLORTIGARA, G., REGOLIN, L. (2002). Facing an obstacle: Lateralization of object and spatial cognition. In: *Comparative Vertebrate Lateralization* (R.J. Andrew and L.J. Rogers, eds.), pp. 383-444, Cambridge: Cambridge University Press.

(101) VALLORTIGARA, G., BISAZZA, A. (2002). How ancient is brain lateralization? In: *Comparative Vertebrate Lateralization* (R.J. Andrew and L.J. Rogers, eds.), pp. 9-69, Cambridge: Cambridge University Press.

(100) LIPPOLIS, G., BISAZZA, A., ROGERS, L.J., VALLORTIGARA, G. (2002). Lateralization of predator avoidance responses in three species of toads. *Laterality*, 7: 163-183.

(99) DE SANTI, A., BISAZZA, A., VALLORTIGARA, G. (2002). Complementary left and right eye use during predator inspection and shoal-mate scrutiny in minnows. *Journal of Fish Biology*, 60: 1116-1125.

(98) BOBBO, D., GALVANI, F., MASCETTI, G.G., VALLORTIGARA, G. (2002). Light exposure of the chick embryo influences monocular sleep. *Behavioural Brain Research*, 134: 447-466.

(97) GAGLIARDO, A., ODETTI, F., IOALE, P., BINGMAN, V.P., TUTTLE, S., VALLORTIGARA, G. (2002). Bilateral participation of the hippocampus in familiar landmark navigation by homing pigeons. *Behavioural Brain Research*, 136: 201-209.

(96) SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2002). Modularity and spatial reorientation in a simple mind: Encoding of geometric and nongeometric properties of a spatial environment by fish. *Cognition*, 85: 51-59.

(95) VALLORTIGARA, G., SOVRANO, V.A. (2002). Conjoining information from different modules: A comparative perspective. *Behavioral Brain Sciences*, 25: 701-702.

2001

(94) DE SANTI, A., SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2001). Mosquitofish display differential left- and right-eye use during mirror-image scrutiny and predator-inspection responses. *Animal Behaviour*, 61: 305-310.

(93) BISAZZA, A., SOVRANO, V.A., VALLORTIGARA, G. (2001). Consistency among different tasks of left-right asymmetries in lines of fish originally selected for opposite direction of lateralization in a detour task. *Neuropsychologia*, 39: 1077-1085.

(92) BISAZZA, A., LIPPOLIS, G., VALLORTIGARA, G. (2001). Lateralization of ventral fins use during object exploration in the blue gourami (*Trichogaster trichopterus*). *Physiology and Behavior*, 72: 575-578

(91) VALLORTIGARA, G., COZZUTTI, C., TOMMASI, L., ROGERS, L.J. (2001). How birds use their eyes: Opposite left-

- right specialisation for the lateral and frontal visual hemifield in the domestic chick. *Current Biology*, 11: 29-33.
- (90) COZZUTTI, C., VALLORTIGARA, G. (2001). Hemispheric memories for the content and position of food caches in the domestic chick. *Behavioral Neuroscience*, 115: 305-313.
- (89) GAGLIARDO, A., IOALE, P., ODETTI, F., BINGMAN, V.P., VALLORTIGARA, G. (2001). Homing in pigeons: differential role of left and right hippocampal formation in the acquisition of the navigational map. *European Journal of Neuroscience*, 13: 1617-1624.
- (88) TOMMASI, L., VALLORTIGARA, G. (2001). Encoding of geometric and landmark information in the left and right hemispheres of the avian brain. *Behavioral Neuroscience*, 115: 602-613.
- (87) SOVRANO, V.A., BISAZZA, A., VALLORTIGARA, G. (2001). Lateralization of response to social stimuli in fishes: A comparison between different methods and species. *Physiology and Behavior*, 74: 237-244.
- (86) VALLORTIGARA, G., TOMMASI, L. (2001). Minimization of modal contours: an instance of an evolutionary internalized geometric regularity? *Brain and Behavioral Sciences*, 24: 706-707.
- (85) MASCETTI, G.G., VALLORTIGARA, G. (2001). Why do birds sleep with one eye open? Light exposure of chick embryo as a determinant of monocular sleep. *Current Biology*, 11: 971-974.
- (84) TOMMASI, L., ZAVAGNO, D., VALLORTIGARA, G. (2001). Illusory smoke and dazzling fog. *Psychological Research*, 65: 46-49.
- (83) VALLORTIGARA, G. (2001). Other Minds, other Brains. *Comparative Cognition and Consciousness*. In "Exploring Consciousness. Humanities, Natural Science and Religion", Proceedings of the International Symposium, pp. 61-79, Fondazione Carlo Erba, Milan.
- 2000
- (82) VALLORTIGARA, G. (2000). Comparative neuropsychology of the dual brain: A stroll through left and right animals' perceptual worlds. *Brain and Language*, 73: 189-219.
- (81) BISAZZA A., CANTALUPO, C., CAPOCCHIANO, M., VALLORTIGARA, G. (2000). Population lateralization and social behaviour: A study with sixteen species of fish. *Laterality*, 3: 269-284.
- (80) DE SANTI, A., BISAZZA, A., CAPPELLETTI, M., VALLORTIGARA, G. (2000). Prior exposure to a predator influences lateralization of cooperative predator inspection in the guppy, *Poecilia reticulata*. *Italian Journal of Zoology*, 67: 175-178.
- (79) TOMMASI, L., ANDREW, R.J., VALLORTIGARA, G. (2000). Eye use in search is determined by the nature of the task in the domestic chick. *Behavioural Brain Research*, 112: 119-126.
- (78) TOMMASI, L., VALLORTIGARA, G. (2000). Searching for the centre: Spatial cognition in the domestic chick. *Journal of Experimental Psychology: Animal Behavior Processes*, 26: 477-486.
- (77) REGOLIN, L., TOMMASI, L., VALLORTIGARA, G. (2000). Visual perception of biological motion in newly hatched chicks as revealed by an imprinting procedure. *Animal Cognition*, 3: 53-60.
- (76) VALLORTIGARA, G., REGOLIN, L., ZUCCA, P. (2000). Secondary imprinting in the domestic chick: Binocular and lateralized monocular performance. *International Journal of Comparative Psychology*, 13: 119-136.
- (75) BISAZZA, A., FACCHIN, L., VALLORTIGARA, G. (2000). Heritability of lateralization in fish: Concordance of right-left asymmetry between parents and offspring. *Neuropsychologia*, 38: 907-912.
- 1999
- (74) TOMMASI, L., VALLORTIGARA, G. (1999). Figure-ground segregation modulates perceived direction of ambiguous moving gratings and plaids. *Vision Research*, 39: 777-787.
- (73) VALLORTIGARA, G., REGOLIN, L., PAGNI, P. (1999). Detour behaviour, imprinting, and visual lateralization in the domestic chick. *Cognitive Brain Research*, 7: 307-320.
- (72) TOMMASI, L., VALLORTIGARA, G. (1999). Footedness in binocular and monocular chicks. *Laterality*, 4: 89-95.
- (71) MASCETTI, G.G., RUGGER, M., VALLORTIGARA, G. (1999). Visual lateralization and monocular sleep in the domestic chick. *Cognitive Brain Research*, 4: 451-463.
- (70) BISAZZA, A., DE SANTI, A., VALLORTIGARA, G. (1999). Laterality and cooperation: Mosquitofish move closer to a predator when the companion is on their left side. *Animal Behaviour*, 57: 1145-1149.
- (69) VALLORTIGARA, G. (1999). Segregation and integration of information among visual modules. *Behavioral and Brain Sciences*, 22: 398-399.
- (68) FACCHIN, L., BISAZZA, A., VALLORTIGARA, G. (1999). What causes lateralization of detour behaviour in fish? evidence for asymmetries in eye use. *Behavioural Brain Research*, 103: 229-234.
- (67) VALLORTIGARA, G., ROGERS, L.J., BISAZZA, A. (1999). Possible evolutionary origins of cognitive brain lateralization. *Brain Research Reviews*, 30: 164-175.
- (66) SOVRANO, V., RAINOLDI, C., BISAZZA, A., VALLORTIGARA, G. (1999). Roots of brain specializations: Preferential left-eye use during mirror-image inspection in six species of teleost fish. *Behavioural Brain Research*, 106: 175-180.
- (65) FORKMAN, B., VALLORTIGARA, G. (1999). Minimization of modal contours: An essential cross species strategy in disambiguating relative depth. *Animal Cognition*, 4: 181-185.
- 1998
- (64) BISAZZA A., FACCHIN L., PIGNATTI R., VALLORTIGARA G. (1998). Lateralization of Detour Behaviour in Poeciliid Fishes: The Effect of Species, Gender and Sexual Motivation. *Behavioural Brain Research*, 91: 157-164.
- (63) BISAZZA, A., ROGERS, L.J., VALLORTIGARA, G. (1998). The origins of cerebral asymmetry: A review of evidence of behavioural and brain lateralization in fishes, amphibians, and reptiles. *Neuroscience and Biobehavioral Review*, 22: 411-426.
- (62) ROBINS, A., LIPPOLIS, G., BISAZZA, A., VALLORTIGARA, G., ROGERS, L.J., (1998). Lateralized aggressive responses and hind-limb use in toads. *Animal Behaviour*, 56: 875-881.
- (61) VALLORTIGARA, G., REGOLIN, L., RIGONI, M., ZANFORLIN, M. (1998). Delayed search for a concealed imprinted object in the domestic chick. *Animal Cognition*, 1: 17-24.
- (60) VALLORTIGARA, G., ROGERS, L.J., BISAZZA, A., LIPPOLIS, G., ROBINS, A. (1998). Complementary right and left

hemifield use for predatory and agonistic behaviour in toads. *NeuroReport*, 9: 3341-3344.

1997

(59) BISAZZA, A., CANTALUPO, C., VALLORTIGARA, G. (1997). Lateral asymmetries during escape behavior in a species of teleost fish (*Jenynsia lineata*). *Physiology and Behavior*, 61: 31-35.

(58) BISAZZA, A., CANTALUPO, C., ROBINS, A., ROGERS, L.J., VALLORTIGARA, G. (1997). Pawedness and motor asymmetries in toads. *Laterality*, 2: 49-64.

(57) TOMMASI, L., VALLORTIGARA, G., ZANFORLIN, M. (1997). Young chickens learn to localize the centre of a spatial environment. *Journal of Comparative Physiology A: Sensory, Neural and Behavioral Physiology*, 180: 567-572.

(56) BISAZZA, A., PIGNATTI, R., VALLORTIGARA, G. (1997). Detour tests reveal task- and stimulus-specific behavioural lateralization in mosquitofish (*Gambusia holbrooki*). *Behavioural Brain Research*, 89: 237-242.

(55) BISAZZA, A., PIGNATTI, R., VALLORTIGARA, G. (1997). Laterality in detour behaviour: Interspecific variation in poeciliid fishes. *Animal Behaviour*, 54: 1273-1281.

(54) BISAZZA, A., VALLORTIGARA, G. (1997). Rotational swimming preferences in mosquitofish: Evidence for brain lateralization? *Physiology and Behavior*, 62: 1405-1407.

(53) VALLORTIGARA, G., ANDREW, R.J., SERTORI, L., REGOLIN, L. (1997). Sharply-timed behavioural changes during the first 5 weeks of life in the domestic chick (*Gallus gallus*). *Bird Behavior*, 12: 29-40.

1996

(52) CANTALUPO C., BISAZZA A., VALLORTIGARA G. (1996). Lateralization of displays during aggressive and courtship behaviour in the siamese-fighting fish (*Betta splendens*). *Physiology and Behavior*, 60: 249-252.

(51) VALLORTIGARA, G., REGOLIN, L., BORTOLOMIOL, G., TOMMASI, L. (1996). Lateral asymmetries due to preferences in eye use during visual discrimination learning in chicks. *Behavioural Brain Research*, 74: 135-143.

(50) VALLORTIGARA, G. (1996). Learning of colour and position cues in domestic chicks: Males are better at position, females at colour. *Behavioural Processes*, 36: 289-296.

(49) BISAZZA, A., CANTALUPO, C., ROBINS, A., ROGERS, L.J., VALLORTIGARA, G. (1996). Right-pawedness in toads. *Nature*, 379: 408.

(48) REGOLIN, L., VALLORTIGARA, G. (1996). Lateral asymmetries in the response to novel-coloured objects in the domestic chick: A developmental study. *Behavioural Processes*, 37: 67-74.

(47) BISAZZA, A., VALLORTIGARA, G. (1996). Rotational bias in mosquitofish (*Gambusia holbrooki*): The role of lateralization and sun-compass navigation. *Laterality*, 1: 161-175.

1995

(46) REGOLIN L., VALLORTIGARA G., ZANFORLIN M. (1995). Detour behaviour in the domestic chick: Searching for a disappearing prey or a disappearing social partner. *Animal Behaviour*, 50: 203-211.

(45) REGOLIN L., VALLORTIGARA G. (1995). Perception of partly occluded objects by young chicks. *Perception and Psychophysics*, 57: 971-976.

(44) TOMMASI L., BRESSAN P., VALLORTIGARA G. (1995). Solving occlusion indeterminacy in chromatically homogeneous patterns. *Perception*, 24: 391-403.

(43) CANTALUPO C., BISAZZA A., VALLORTIGARA G. (1995). Lateralization of predator-evasion response in a teleost fish. *Neuropsychologia*, 33: 1637-1646.

1994

(42) REGOLIN L., VALLORTIGARA G., ZANFORLIN M. (1994). Perceptual and motivational aspects of detour behaviour in young chicks. *Animal Behaviour*, 47: 123-131.

(41) VALLORTIGARA G., REGOLIN L., ZANFORLIN M. (1994). The development of responses to novel-coloured objects in male and female domestic chicks. *Behavioural Processes*, 31: 219-230.

(40) VALLORTIGARA G., ANDREW R.J. (1994). Olfactory lateralization in the chick. *Neuropsychologia*, 32: 417-423.

(39) REGOLIN L., VALLORTIGARA G., ZANFORLIN M. (1994). Object and spatial representations in detour problems by chicks. *Animal Behaviour*, 49: 195-199.

(38) VALLORTIGARA G., BRESSAN, P. (1994). Occlusion, transparency, and stereopsis: A new explanation for stereo capture. *Vision Research*, 34: 2891-2896.

(37) VALLORTIGARA G., ANDREW R.J. (1994). Differential involvement of right and left hemisphere in individual recognition in the domestic chick. *Behavioural Processes*, 33: 41-58.

1993

(36) BRESSAN P., GANIS G., VALLORTIGARA G. (1993). The role of depth stratification in the solution of the aperture problem. *Perception*, 22: 215-228.

(35) BRESSAN P., VALLORTIGARA G. (1993). What induces capture in motion capture? *Vision Research*, 33: 2109-2112.

(34) VALLORTIGARA G., ZANFORLIN M. (1993). Discussion of On Experimental Phenomenology by G.B. Vicario. In *Foundations of Perceptual Theory* (S.C. Masin, Ed.), pp. 211-215, Elsevier, Amsterdam.

1992

(33) VALLORTIGARA G. (1992). Affiliation and aggression as related to gender in domestic chicks (*Gallus gallus*). *Journal of Comparative Psychology*, 106: 53-57.

(32) BRESSAN P., TOMAT L., VALLORTIGARA G. (1992). Motion aftereffects with rotating ellipses. *Psychological Research*, 54: 240-245.

(31) VALLORTIGARA G. (1992). Right hemisphere advantage for social recognition in the chick. *Neuropsychologia*, 30: 761-768.

1991

(30) BRESSAN P., VALLORTIGARA G. (1991). Illusory depth from moving subjective figures and neon color spreading. *Perception*, 20: 637-644.

(29) VALLORTIGARA G., ANDREW R.J. (1991). Lateralization of response by chicks to change in a model partner. *Animal Behaviour*, 41: 187-194.

- (28) VALLORTIGARA G., BRESSAN P. (1991). Occlusion and the perception of coherent motion. *Vision Research*, 31: 1967-1978.
- (27) ZANFORLIN M., VALLORTIGARA G., AGOSTINI A. (1991). The whole may be less than the sum of its parts: the case of the stereokinetic cone divided into parts. *Gestalt Theory*, 4: 243-249.
- 1990
- (26) VALLORTIGARA G., ZANFORLIN M., COMPOSTELLA S. (1990). Perceptual organization in animal learning: Cues or objects? *Ethology*, 85: 89-102.
- (25) VALLORTIGARA G., ZANFORLIN M., PASTI G. (1990). Geometric modules in animal spatial representations: A test with chicks (*Gallus gallus*). *Journal of Comparative Psychology*, 104: 248-254.
- (24) VALLORTIGARA G., CAILOTTO M., ZANFORLIN M. (1990). Sex differences in social reinstatement motivation of the domestic chick (*Gallus gallus*) revealed by runway tests with social and nonsocial reinforcement. *Journal of Comparative Psychology*, 104: 361-367.
- (23) ZANFORLIN M., VALLORTIGARA G. (1990). The magic wand: A new stereokinetic anomalous surface. *Perception*, 19: 447-457.
- 1989
- (22) VALLORTIGARA G., ZANFORLIN M. (1989). Place and object learning in chicks (*Gallus gallus domesticus*). *Journal of Comparative Psychology*, 103: 201-209.
- (21) VALLORTIGARA G. (1989). Behavioral asymmetries in visual learning of young chickens. *Physiology and Behavior*, 45: 797-800.
- (20) CAILOTTO M., VALLORTIGARA G., ZANFORLIN M. (1989). Sex differences in the response to social stimuli in young chicks. *Ethology Ecology and Evolution*, 1: 323-327.
- 1988
- (19) VALLORTIGARA G. (1988). Chicks in a novel environment: Effects of conspecific calls. *Ethology*, 78: 341-345.
- (18) VALLORTIGARA G., ZANFORLIN M., CAILOTTO M. (1988). Right-left asymmetry in position learning of male chicks. *Behavioural Brain Research*, 27: 189-191.
- (17) VALLORTIGARA G., ZANFORLIN M. (1988). Simultaneous discrimination learning in chicks: Spatial representations and object characteristics. *Ethology*, 79: 248-256.
- (16) VALLORTIGARA G., ZANFORLIN M. (1988). Open-field behavior of young chicks (*Gallus gallus*): Antipredatory responses, social reinstatement motivation, and gender effects. *Animal Learning and Behavior*, 16: 359-362.
- (15) VALLORTIGARA G., BRESSAN P., BERTAMINI M. (1988). Perceptual alternations in stereokinesis. *Perception*, 17: 31-34.
- (14) ZANFORLIN M., VALLORTIGARA G. (1988). Depth effect from a rotating line of constant length. *Perception and Psychophysics*, 44: 493-499.
- 1987
- (13) MASIN S.C., MAZZONI G., VALLORTIGARA G. (1987). The first five responses in the method of constant stimuli. *Canadian Journal of Psychology*, 41: 80-83.
- (12) MASIN S.C., MAZZONI G., VALLORTIGARA G. (1987). An experimental study of the alphabetical rating. *Bulletin of the Psychonomic Society*, 25: 259-262.
- (11) BRESSAN P., VALLORTIGARA G. (1987). Stereokinesis with moving visual phantoms. *Perception*, 16: 73-78.
- (10) BRESSAN P., VALLORTIGARA G. (1987). Learning to see stereokinetic effects. *Perception*, 16: 187-192.
- (9) MASIN S.C., MAZZONI G., VALLORTIGARA G. (1987). Direct evaluation of distances within the alphabet. *Perceptual and Motor Skills*, 65: 449-452.
- (8) ZANFORLIN M., VALLORTIGARA G. (1987). Efectos de las preferencias de formas y tamanos sobre el proceso de generalizacion en pollos. *Revista Latinoamericana de Psicologia*, 19: 421-439.
- (7) VALLORTIGARA G. (1987). The hidden face of Kanizsa triangle: Apparent movement of subjective figures in three-dimensional space. *Perception*, 16: 449-452.
- 1986
- (6) VALLORTIGARA G., ZANFORLIN M. (1986). Position learning in chicks. *Behavioural Processes*, 12: 23-32.
- (5) VALLORTIGARA G., ZANFORLIN M. (1986). A newborn chick's companion. *Monit. Zool. Ital./ Ital. J. Zoology*, 20: 63-73.
- (4) VALLORTIGARA G., BRESSAN P., ZANFORLIN M. (1986). The Saturn illusion: A new stereokinetic effect. *Vision Research*, 26: 811-813.
- (3) BRESSAN P., VALLORTIGARA G. (1986). Multiple 3-D interpretations in a classic stereokinetic effect. *Perception*, 15: 405-408.
- (2) BRESSAN P., VALLORTIGARA G. (1986). Subjective contours can produce stereokinetic effects. *Perception*, 15: 409-412.
- 1985
- (1) ZANFORLIN M., VALLORTIGARA G. (1985). Form preferences and stimulus generalization in domestic chicks. *Boll. Zool.*, 52: 231-238.
- Publicazioni brevi (books reviews and other short publications)
1. VALLORTIGARA, G. (1996). Review of *Orang-Utans in Borneo* by Gisela Kaplan and L. J. Rogers, University of New England Press, Armidale, 1994, *Neuropsychologia*, 34 (6) : 615.
 2. VALLORTIGARA, G. (1996). Review of *The Development of Brain and Behaviour in the Chicken* by L. J. Rogers, CAB International, Wallingford, 1995, *Neuropsychologia*, 34 (11) : 1139.
 3. VALLORTIGARA, G. (1998). Review of *Minds of their Own* by L.J. Rogers, Allen & Unwin, St. Leonards, Australia, 1997, *Trends in Cognitive Sciences*, 2(3): 118.
 4. VALLORTIGARA, G. (2005). Editorial for *Cortex Forum: Cerebral lateralization: a Common Theme in the Organization of the Vertebrate Brain*, *Cortex*, 42: 5-7.
 5. MCMANUS, C., NICHOLLS, M., VALLORTIGARA, G. (2008). Editorial Commentary: Is LRRTM1 the gene for

handedness? *Laterality*, 14: 1-2.

6. MCMANUS, C., NICHOLLS, M., VALLORTIGARA, G. (2010). Introduction: The right hand and the left hand of history. *Laterality*, 15: 1-3.

7. VALLORTIGARA G. (2014). Laudatio for Mario Zanforlin on his 80th birthday. *Gestalt Theory*, 36: 317-319.

Publicazioni per esteso su libri e riviste a carattere nazionale:

1. VALLORTIGARA G., ZANFORLIN M. (1985). Apprendimento di posizione assoluta e relativa nel pulcino. In: *Conoscenza e Struttura. Festschrift per Gaetano Kanizsa*. (a cura di W. Gerbino), pp. 475-479, Il Mulino, Bologna.
2. VALLORTIGARA G. (1985). Visual preferences in size discrimination and generalization in chicks. *Atti e Memorie dell'Accademia Patavina di Scienze, Lettere ed Arti. Classe di Scienze Matematiche e Naturali. Volume XCVII*, pp. 45-54.
3. VALLORTIGARA G., ZANFORLIN M. (1987). Place learning in chicks: The role of object characteristics. *Atti e Memorie dell'Accademia Patavina di Scienze, Lettere ed Arti. Classe di Scienze Matematiche e Naturali, Volume XCIX*, pp. 145-155.
4. ZANFORLIN M., VALLORTIGARA G. (1988). Depth effect from a rotating line of constant length: A preliminary report. *Contributi degli Istituti e Dipartimenti Italiani di Psicologia*, 1: 6-35.
5. CAIOTTO M., VALLORTIGARA G., ZANFORLIN M. (1989). Behavioural differences between male and female domestic chicks (*Gallus gallus*) in an open field. *Atti e Memorie dell'Accademia Patavina di Scienze, Lettere ed Arti. Classe di Scienze Matematiche e Naturali. Volume CI*, pp. 77-92.
6. VALLORTIGARA G. (1991). Con gli occhi di un pulcino. Congetture su origine, natura e funzione della specializzazione emisferica. *Rivista di Psicologia*, 76:19-37.
7. ZANFORLIN M., VALLORTIGARA G. (1992). I modelli animali in psicologia. In: *Indici fisiologici in psicologia* (a cura di D. Palomba), pp. 13-17, Cleup, Padova.
8. VALLORTIGARA G., ZANFORLIN M. (1992). Il pulcino domestico come animale modello per lo studio della lateralizzazione cerebrale. In *Indici fisiologici in psicologia* (a cura di D. Palomba), pp. 27-42, Cleup, Padova.
9. VALLORTIGARA G. (1992). Lemmi: Incentivo, Incompatibilit ? Apprendimento latente, Novit ? Condizionamento negativo, Ricompensa, Apprendimento associativo, Behaviourismo, Etologia cognitiva, Mappa cognitiva, Discriminazione, Capacit ? di apprendimento, Disposizioni all'apprendimento, Apprendimento percettivo, Modellaggio, Generalizzazione, Condizionamento, Estinzione, Comportamento operante, Rinforzo, Apprendimento. In *Dizionario di Etologia* (a cura di Danilo Mainardi), Einaudi, Torino.
10. REGOLIN L., VALLORTIGARA G., ZANFORLIN M. (1994). Detour behaviour in the domestic chick: A review and re-interpretation. *Atti e Memorie dell'Accademia Patavina di Scienze, Lettere ed Arti. Classe di Scienze Matematiche e Naturali, Vol. CV*, pp. 105-126.
11. BISAZZA, A., CANTALUPO, C., VALLORTIGARA, G. (1996). Lateralization of functions in the brain and behaviour of lower vertebrates: New evidences. *Atti e Memorie dell'Accademia Patavina di Scienze, Lettere ed Arti. Classe di Scienze Matematiche e Naturali, Vol. CVIII*, pp. 93-138.
12. VALLORTIGARA, G., BISAZZA, A. (1997). L'asimmetria del cervello nei vertebrati. *Le Scienze*, N. 342, febbraio, pp. 54-63.
13. REGOLIN, L., VALLORTIGARA, G. (1997). L'occhio al di l  dell'ostacolo: le radici biologiche del completamento amodale. In *Tra Percezione e Arte* (A. Cavedon, L. Zanuttini, a cura di), pp. 193-208, Il Poligrafo, Padova.
14. VALLORTIGARA, G. (1999). La visione negli animali. In *La Percezione Visiva* (Purgh ?, Stucchi N. e Olivero, A., a cura di), pp. 191-230, Utet, Torino.
15. VALENTI, A., VALLORTIGARA, G. (2000). Lateralizzazione visiva nella quaglia comune (*Coturnix europaea*). *Ricerche di Psicologia*, 24: 43-58.
16. VALLORTIGARA, G., REGOLIN, L., TOMMASI, L., ZUCCA, P. (2000). Altro che cervello di gallina! Cervello e cognizione negli uccelli. *Le Scienze*, N. 367, Novembre, pp. 88-95.
17. VALLORTIGARA, G., TOMMASI, L., SOVRANO, V. A. (2001). La cognizione animale: due principi, un corollario e un problema aperto. *Giornale Italiano di Psicologia*, 28: 21-45.
18. SOVRANO, V.A., VALLORTIGARA, G. (2002). Lo studio comparato delle menti. In "Le scienze della mente" (A. Borghi e T. Iachini, a cura di), pp. 65-82, Il Mulino, Bologna.
19. VALLORTIGARA, G., TOMMASI, L., SOVRANO, V.A. (2002). Pesci rossi, etologi, psicolinguisti e altri animali. *Giornale Italiano di Psicologia*, 29: 185-201.
20. VALLORTIGARA, G. (2003). Gli oggetti visti dal cervello. *Mente & Cervello*, 1: 20-27.
21. VALLORTIGARA, G. (2004). Intelligenza animale. In "Manuale di Psicologia Generale" (a cura di Marco Zorzi e Vittorio Girotto), pp. 303-317, Il Mulino, Bologna.
22. RASSU, S.P., VALLORTIGARA, G., VERSACE, E., PULINA, G. (2006). Coscienza degli animali e interazione uomo animale. In "Il benessere animale e la qualit  delle produzioni nei piccoli ruminanti". *I Georgofili- Quaderni*, 7: 15-31.
23. VALLORTIGARA, G. (2005). Lemmi: Istinto, Pavlov. In "Dizionario Storico della Scienza della Psiche" (a cura di Francesco Barale, Vittorio Gallese, Stefano Misura e Adriano Zamperini), Einaudi, Torino, in corso di stampa.
24. VALLORTIGARA, G. (2005). Altre menti: esiste una coscienza nelle specie non umane? "Contributi del Centro Linceo Interdisciplinare Beniamino Segre, XXXII Seminario sulla Evoluzione Biologica, Neurobiologia della coscienza", Anno CDIII, pp. 49-78.
25. VALLORTIGARA, G. (2006). Voce: Mente e cervello. *Enciclopedia dei Ragazzi Treccani, Istituto per L'Enciclopedia Italiana Treccani*.
26. VALLORTIGARA, G. (2007). Pensiero senza linguaggio. Intelligenza e meccanismi cerebrali negli animali. *Prometeo*, 10: 38-49.
27. VALLORTIGARA, G. (2007). Editoriale. *Giornale Italiano di Psicologia*, XXXIV, n. 2, pp. 251-255.
28. VALLORTIGARA, G. (2007). Strutture e funzioni. Due storie personali sul ruolo delle spiegazioni evoluzionistiche nelle scienze cognitive. In "Cultura, evoluzione, simulazione", *Atti del Convegno 2007 del CODISCO, Coordinamento dei Dottorati italiani di Scienze Cognitive* (a cura di Alessandra Falzone e Mariangela Campochiaro), pp. 80-89, Ed. Squilibri, Roma.

29. VALLORTIGARA, G. (2010). Unico e originale: l'essenzialismo psicologico e le due culture. In "Pianeta Galileo 2009", (Alberto Peruzzi, a cura di), Regione Toscana, Consiglio Regionale, Centro Stampa del Consiglio Regionale della Toscana, pp. 543-547.
 30. Vallortigara, G. (2013). L'animale metafisico. Prometeo, Anno 31, Marzo 2013, Numero 121, pp. 74-81.
 31. Vallortigara, G. (2013). Cervelli, plastici e rigidi. *Giornale Italiano di Psicologia*, 3: 551-555.
 32. Girotto, V., Pievani, T., Vallortigara, G. (2013). Credenti nati. *Mente & Cervello*, Marzo, 2013.
 33. Rigosi, E., Vallortigara, G. (2014). Elogio dell'ape. *Cervello piccolo, mente fina. Le Scienze*, Gennaio 2014.
 34. Vallortigara, G. (2014). L'evoluzione dei cervelli e delle menti: un approccio comparativo. In "XL Seminario sulla Evoluzione Biologica e i Grandi Problemi della Biologia: Cervello in Evoluzione", Roma 27-28 febbraio 2013, pubblicato in *Contributi del Centro Linceo Interdisciplinare "Beniamino Segre"*, n. 130, pp. 125-137.
 35. Vallortigara, G. (2015). Voci d'autore: "Animale". *Nuovo Dizionario Zingarelli*, Zingarelli Editore, Bologna.
 36. Vallortigara, G., Voza, L. (2015). Ambiguità nimali. *Le Scienze*, Dicembre 2015.
 37. Rosa-Salva, O., Di Giorgio, E., Vallortigara, G. (2017). Con gli occhi di un bambino. *Le Scienze*, Febbraio 2017.
- Altre pubblicazioni:
1. VALLORTIGARA, G. (2007). Perch? mancini sono l'eccezione. *La Stampa, Tuttoscienze*, 14 marzo 2007.
 2. VALLORTIGARA, G. (2007). La coscienza ?el cervello? *Domenica Il Sole 24 Ore*, p. 41, 30 settembre 2007.
 3. VALLORTIGARA, G. (2008). L'evoluzione ha creato Dio (e non viceversa). *MicroMega, Almanacco di Scienze*, 3/26: pp. 119-128.
 4. VALLORTIGARA, G. (2009). Alex pappagallo pensoso. *Domenica Il Sole 24 Ore*, p. 33, 8 febbraio 2009.
 5. GIROTTTO, V., VALLORTIGARA, G. (2009). Radici biologiche della fede e della morale. *MicroMega, Almanacco di Scienze*, 3/40: pp. 150-158.
 6. VALLORTIGARA, G. (2010). Creduloni si nasce. *Darwin*, gennaio-febbraio, N.35, pp 76-83.
 7. VALLORTIGARA, G. (2010). Mangereste le uova di questa gallina? *Domenica Il Sole 24 Ore*, 27 settembre 2010.
 8. VALLORTIGARA, G. (2010). Perch?omini e pulcini vedono angeli ovunque. *La Stampa, Tuttoscienze*, 26 maggio 2010.
 9. VALLORTIGARA, G. (2010). Alla ricerca del 'life detector'. *MicroMega, Almanacco di Scienze*, 7: 88-98.
 10. Vallortigara, G. (2011). Il pensiero femminile fa la differenza. *La Stampa, Tuttoscienze*, 3 marzo 2011.
 11. Vallortigara, G. (2012). Cervello di pulcino. *Domenica Il Sole 24 Ore*, 10 giugno 2012.
 12. Vallortigara, G. (2013). Le ragioni di un salvataggio. *Domenica Il Sole 24 Ore*, 3 febbraio 2013.
 13. Vallortigara, G., Girotto, V. (2013). Perch?i affidiamo al soprannaturale. *Repubblica*, 26 giugno 2013.
 14. Vallortigara, G. (2013). Neuroni guaritori e ricordi innestati. *Repubblica*, 19 ottobre 2013.
 15. Voza, L., Vallortigara, G. (2014). E se i delfini non fossero poi cos?ntelligenti? *Domenica Il Sole 24 Ore*, 27 luglio 2014.
 16. Vallortigara, G., Panciera, N. (2014). Neuroni numerici. *Domenica Il Sole 24 Ore*, 16 novembre 2014.
 17. Vallortigara, G. (2014). Prima si coopera, poi si parla. *Domenica Il Sole 24 Ore*, 21 dicembre 2014.
 18. Vallortigara, G. (2015). Imprintati per credere. *Domenica Il Sole 24 Ore*, 20 settembre 2015.
 19. Vallortigara, G. (2015). Nella mente di un bassotto. *Domenica Il Sole 24 Ore*, 27 settembre 2015.
 20. Vallortigara, G. (2015). Non c'?! chiostro dell'anima. *Domenica Il Sole 24 Ore*, 29 novembre 2015.
 21. Vallortigara, G. (2016). Due neuroni per uno zero. *Domenica Il Sole 24 Ore*, 17 gennaio 2016.
 22. Girotto, V., Vallortigara, G. (2016). Cos? nato il timor di Dio. *Domenica Il Sole 24 Ore*, 8 aprile 2016.
 23. Vallortigara, G. (2016). Brillanti teste d'uovo. *Domenica Il Sole 24 Ore*, 10 luglio 2016.
 24. Vallortigara, G. (2016). Nel cervello dei matematici. *Domenica Il Sole 24 Ore*, 11 settembre 2016.
 25. Vallortigara, G. (2017). Imprinting al profumo di violetta. *Domenica Il Sole 24 Ore*, 19 marzo 2017.
- LIBRI:
- G. VALLORTIGARA (1994). L'evoluzione della lateralizzazione cerebrale. pp 137, Cleup, Padova.
 - G. VALLORTIGARA (2000). Altre menti. Lo studio comparato della cognizione animale. pp. 473, Il Mulino, Bologna.
 - G. VALLORTIGARA (2005). Cervello di gallina. Visite (guidate) tra etologia e neuroscienze. pp. 158, Bollati-Boringhieri, Torino.
 - V. GIROTTTO, T. PIEVANI, G. VALLORTIGARA. (2008). Nati per credere. Perch?l nostro cervello sembra predisposto a fraintendere il Darwinismo. Codice Edizione, Torino.
 - G. VALLORTIGARA (2011). La mente che scodinzola. Storie di animali e cervelli. Mondadori-Universit?Milano.
 - L.J. ROGERS, G. VALLORTIGARA, R.J. ANDREW (2013). Divided Brains. The Biology and Behaviour of Brain Asymmetries. Cambridge University Press, New York.
 - G. VALLORTIGARA, N. PANCIERA (2014). Cervelli che contano. Adelphi, Milano.
 - L. VOZZA, G. VALLORTIGARA (2015). Piccoli equivoci tra noi animali. Zanichelli, Bologna.
 - L.J. ROGERS, G. VALLORTIGARA, R.J. ANDREW (2016). Cervelli divisi. L'evoluzione della mente asimmetrica. Mondadori Education, Milano.