**ELENA NAVA**

Department of Psychology

University of Milano-Bicocca

Piazza dell’Ateneo Nuovo 1

20126 Milano (IT)

# Academic Positions

## National Scientific Habilitation (valid until 2027), a necessary requirement to apply for permanent positions of Full and Associate Professor in Italian Universities in the area Developmental Psychology

## June 2017 – now

**Assistant Professor (tenured, transitioning to Associate Professor in October 2023)**

Department of Psychology

University of Milano-Bicocca (Italy)

## January 2016 – May 2017

**Post-doc**

Tutors: Dr. Maria Dolores de Hevia, CNRS Paris (France), Prof. Viola Macchi Cassia, Department of Psychology, University of Milano-Bicocca (Italy)

## December 2013 – November 2015

**Post-doc**

Tutor: Prof. Chiara Turati

Department of Psychology, University of Milano-Bicocca (Italy)

## April 2010 – October 2013

**Post-doc**

Tutor: Prof. Brigitte Röder

University of Hamburg (Germany)

# Education

2007 - 2010

**PhD in Cognitive Neuroscience**

Centre for Mind and Brain (CIMeC)

University of Trento

Tutor: Prof. Francesco Pavani

Title of the thesis: “Plasticity following auditory deafferentation and reafferentation”

2003 - 2006

**B.A. in Psychology**

University of Milano-Bicocca (Italy)

Tutor: Prof. Angelo Maravita

Title of the thesis: “Is this my hand? The effect of size on grasping”

1997 - 2002

**M.A. History**

University of Milano (Italy)

Tutor: Prof. Roberto Perelli Cippo

Title of the thesis: “The idea of crusade in contemporary historiography”

# Awards

**2016** Cover for the paper: Nava, E., Romano, D., Grassi, M., & Turati, C. (2016).

Skin conductance reveals the early development of the unconscious processing of emotions. *Cortex*, *84,* 124-131.

**2012** Teaching award for Best Seminar entitled: “Developmental Cognitive Neuroscience”, part of the Master Course in Psychology at the University of Hamburg (Germany).

**2010** Award for Best PhD thesis, University of Trento (500 euros).

**2007** Travel award for Best Abstract, awarded by IMRF (International Multisensory Research Forum). The award included 800 euros travel reimbursement and the possibility to present orally at the conference, held in Sydney (Australia).

# Participation at National and International Grants

**2019-2020** **University of Kent Faculty of Social Sciences Research Grant:** "Sensory attenuation in preschool children". (5.000 Pounds). Role: **Collaborator.**

**2019 Department Funds of the University of Milano-Bicocca (ATE-0053)** for the project entitled“Mechanisms of intuitive cooperation across the lifespan”**.** (1.883 Euros). Role: **PI**.

**2018 Department Funds of the University of Milano-Bicocca (ATE-0038)** for the project entitled “Mechanisms of sensory attenuation in childhood”. (2.187 Euros). Role: **PI**.

**2018 MSC – ITN -** Marie Sklodowska-Curie Innovative Training Networks. PI: Prof. Chiara Turati. Title of the project: “Mobile technology for infant social-cognitive neuroscience: interdisciplinary training network for innovative research in developmental cognitive neuroscience. (472.922.000 Euros). Role: **Collaborator**.

**2017 National Funds for Basic Research, Ministry of Education (NAZ-0345).** (3.000 Euros).Role: **PI**.

**2017 Department Funds of the University of Milano-Bicocca (ATE-0176).** Title of the project: “The development of the multisensory representation of the body”. (1.876 Euros). Role: **PI**.

**2013-2015 ERC – Starting Grant** - European Research Council. PI: Prof. Chiara Turati, University of Milano-Bicocca. Title of the project: “The origins and development of the mirror neuron system in humans”. (1.208.000 Euros). Role: **Collaborator with Post-doc fellowship.**

**2010-2013 ERC – Advanced Investigator Grant** - European Research Council. PI: Prof. Brigitte Röder, University of Hamburg (Germany). Title of the project: “Development and plasticity of multisensory functions to study the principles of age dependent learning plasticity in humans”. (2.396.640 Euros). Role: **Collaborator.**

**2008-2010 PRIN** (Prot. No. 2008HETS3W\_002). PI: Prof. Francesco Pavani, University of Trento. Title of the project: “Neural basis of perceptual and attentive functions in the visual modality in individuals with profound deafness.” (110.700 Euros). Role: **Collaborator.**

**2008-2010 PAT** (Bando “Grandi Progetti” della Provincia Autonoma di Trento). PI: Prof. Francesco Pavani, University of Trento. Title of the project: “Multisensory plasticity in profound deafness and in cochlear implant recipients”. (52.300 Euros). Role: **Collaborator.**

# Teaching Experience

**2020-now**

*Applied Cognitive Development*, part of the M.A. course in Applied Experimental Psychological Sciences

University of Milano-Bicocca (Italy)

**2017-now**

*Lifespan Development*, part of the B.A course in Communication Sciences

University of Milano-Bicocca (Italy)

**2010-2013**

*Biopsychology*, part of the M.A. course in Psychological Sciences

University of Hamburg (Germany)

**2016, 2017**

*Developmental Cognitive Neuroscience*, part of the M.A. course in Psychological Sciences

University Ludwig-Maximilian, Munich (Germany)

# Institutional Roles

**2020-now**. Member of the Joint Committee for the M.A. Course in Applied Experimental Psychological Sciences (University of Milano-Bicocca)

**2019-now**. Responsible for the Internship Programme for M.A. students for the Course in Developmental Psychology (University of Milano-Bicocca)

**2017-now**. Member of the PhD programme in Psychology, Linguistics and Cognitive Neuroscience (University of Milano-Bicocca)

# Invited Talks

**December 2022.** Ludwig-Maximilian University, Munich (Germany). Titolo: “Interactions between body and emotions: behavioural and neurophysiological insights”. Invited by Dr. Julia Föcker.

**December 2021.** University of Lincoln (UK). Titolo: “Early experiences in shaping the bodily self”. Invited by Dr. Julia Föcker.

**December 2020.** University of Kent, UK. Title: “Multisensory and unisensory contributions to the development of body representation”. Invited by Prof. Markus Bindemann.

**November 2019.** Ludwig-Maximilian University, Munich (Germany). Title: “Multisensory contributions to the development of body representation”. Keynote lecture alla “Autumn School”. Invited by Prof. Markus Paulus.

**July-August 2019**. APCV (Asia-Pacific Conference on Vision), Osaka (Japan). Title: “Multisensory contributions to the development of body representation”, Invited by Prof. Masami Yamaguchi.

**November 2018**. Italian Society of Psychophysiology and Cognitive Neuroscience, Torino (Italy). Title: “The multisensory development of the sense of body ownership”, within the symposium “Representing the body in the plastic brain: insights from neurophysiological, developmental and clinical approaches”.

**September 2018**. IIT (Italian Institute of Technology). Title: “Multisensory development and its relation to the bodily sense of self”. Invited by Dr. Monica Gori.

**February 2018**. University of Trento. Title: “Asymmetry signatures in the developmental population”. Invited by Prof. Giorgio Vallortigara.

# Peer-reviewed Pubblications (Under review)

**Nava**, E., Tamè, L., Giurgola, S., & Bolognini, N. (*In prep*). Congenital visual deprivation distorts the perception of own, but not other’s body size.

Giraud, M., Marelli, M., & **Nava**, E. (*under review*). Embodied language of emotions: insights from blind individuals.

Nava, F., Margoni, F., Herath, N., & **Nava**, E. (*under review)* Age-dependent changes in intuitive cooperative behavior.

Margoni, F, & **Nava**, E. (*under review*) The Development of Intent-based Epistemic Trust.

Licht, V., Addabbo, M., **Nava**, E., & Turati, E. (*under review*). Neural signatures to prosocial and antisocial interactions in young infants.

Manzone, D., **Nava**, E., & Bolognini, N. (*Under review*). Multisensory interactions: behavioural and physiological evidence.

# Pubblications (Peer-Reviewed)

1. **Nava**, E., & Turati, C. (2022). Preverbal infants tune manual choices on subliminal affective information. Infant Behavior and Development, 69, 101774.

Impact Factor: 2.67

1. Bottini, R., **Nava**, E., De Cuntis, I., Benetti, S., & Collignon, O. (2022). Synesthesia in a congenitally blind individual. Neuropsychologia, 170, 108226.

 Impact Factor: 3.14

1. **Nava**, E., de Hevia, L., Bulf, H., & Macchi Cassia. (2022). Signatures of visual-spatial asymmetries in infancy. Journal of Experimental Child Psychology, 215, 105326.

Impact Factor: 2.61

1. Margoni, F., **Nava**, E., & Surian, L. (2022). Do children selectively trust leaders and prosocial agents in an economic exchange? Developmental Psychology, 58, 152-160.

 Impact Factor: 3.84

1. Bulf, H., Capparini, C., **Nava**, E., de Hevia, M.D., & Macchi Cassia, V. (2022). Space modulates cross-domain transfer of abstract rules in infants. Journal of Experimental Child Development, 213, 105270.

 Impact Factor: 2.61

1. Silvestri, V., Grassi, M. & **Nava**, E. (2021). Face in collision: emotional looming stimuli modulate interpersonal space perception across development and gender. Psychological Research, 86, 1591-1598.

 Impact Factor: 2.96

1. **Nava**, E., Etzi, R., Gallace, A., & Macchi Cassia, V. (2021). Socially-relevant visual stimulation modulates physiological response to social touch in human infants. Neuroscience, 464, 59-66.

 Impact Factor: 3.24

1. Addabbo, M., Quadrelli, E., Bolognini, N., **Nava**, E., & Turati, C. (2020). Mirror-touch experiences in the infant brain. Social Neuroscience. 15, 641-649.

 Impact Factor: 2.57

1. Camodeca, M. & **Nava**, E. (2020). The long-term effects of bullying, victimisation, and bystander behaviour on emotion regulation and its physiological correlates. Journal of Interpersonal Violence.

 Impact Factor: 6.14

1. Giurgola, S., Bolognini, N., & **Nava**, E. (2020). Perceptual representation of own hand size in early childhood and adulthood. Scientific Reports, 10, 5378.

 Impact Factor: 4.52

1. **Nava**, E., & Turati, C. (2020). Subliminal affective priming changes the ‘feeling’ towards neutral objects in infancy. Social Neuroscience, <https://doi.org/10.1080/17470919.2020.1756403>.

 Impact Factor: 2.57

1. **Nava**, E., & Tajadura-Jimenez, A. (2020). Auditory-induced body distortions in children and adults. Scientific Reports, 10, 3024.

 Impact Factor: 4.52

1. **Nava**, E., Föcker, J., & Gori, M. (2020). Children can optimally integrate multisensory information after a short action-like mini game training. Developmental Science, 23, e12840.

 Impact Factor: 4.08

1. **Nava**, E., Croci, E., & Turati, C. (2019). I see you sharing, thus I share with you: Indirect reciprocity in toddlers, but not in infants. Palgrave Communications, 5, 1-9.
2. **Nava**, E., Rinaldi, L., Bulf, H., & Macchi Cassia, V. (2018). The spatial representation of numbers and time follow distinct developmental trajectories: a study in 6- and 10-year-old children. Cognitive Development, 48, 52-61.

 Impact Factor: 2.06

1. **Nava**, E., Gamberini, C., Berardis, A., & Bolognini, N. (2018). Action shapes the sense of body ownership across human development. Frontiers in Psychology, 9, 2507.

 Impact Factor: 2.13

1. De Hevia, L., Addabbo, M., **Nava**, E., Croci, E., Girelli, L., Macchi Cassia, V. (2017). Infants’ detection of increasing numerical order comes before detection of decreasing number. Cognition, 158, 177-188.

 Impact Factor: 3.54

1. Fengler, I., **Nava**, E., Villwock, A. K., Büchner, A., Lenarz, T., & Röder, B. (2017). Multisensory emotion perception in congenitally, early, and late deaf CI users. PloS One, 12, e0185821.

 Impact Factor: 2.78

1. **Nava**, E., Bolognini, N., & Turati, C. (2017). The development of a crossmodal sense of body ownership. Psychological Science, 28, 330-337.

 Impact Factor: 4.90

1. **Nava**, E., Grassi, M., Brenna, V., Croci, E., & Turati, C. (2017). Multisensory motion perception in 3–4 month-old infants. Frontiers in Psychology, 8, 1994.

 Impact Factor: 2.13

1. **Nava**, E., Mattioli, F., Gamberini, C., Stampatori, C., Bellomi, F., Turati, C., ... & Bolognini, N. (2017). Altered bodily self‐consciousness in multiple sclerosis. Journal of Neuropsychology, 12, 463-470.

 Impact Factor: 2.48

1. **Nava**, E., Rinaldi, L., Bulf, H., & Macchi Cassia, V. (2017). Visual and proprioceptive feedback differently modulate the spatial representation of number and time in children. Journal of Experimental Child Psychology, 161, 161-177.

 Impact Factor: 2.42

1. **Nava**, E., Grassi, M., & Turati, C. (2016). Audio-visual, visuo-tactile and audio-tactile correspondences in preschoolers. Multisensory Research, 29, 93-111.

 Impact Factor: 1.89

1. **Nava**, E., Romano, D., Grassi, M., & Turati, C. (2016). Skin conductance reveals the early development of the unconscious processing of emotions. Cortex, 84, 124-131.

 Impact Factor: 4.31

1. Brenna, V., **Nava**, E., Turati, C., Montirosso, R., Cavallini, A., & Borgatti, R. (2015). Intersensory redundancy promotes visual rhythm discrimination in visually impaired infants. Infant Behaviour and Development, 39, 92-97.

 Impact Factor: 1.35

1. Fengler, I., **Nava**, E., & Röder, B. (2015). Short-term visual deprivation reduces interference effects of task-irrelevant facial expressions on affective prosody judgments. Frontiers in Integrative Neuroscience, 9, 1-11.

 Impact Factor: 2.81

1. **Nava**, E., Bottari, D., Villwock, A., Fengler, I., Büchner, A., Lenarz, T., & Röder, B. (2014). Audio-tactile integration in congenitally and late deaf cochlear implant users. PloS One, 9, e99606.

 Impact Factor: 2.78

1. **Nava**, E., Steiger, T., & Röder, B. (2014). Both developmental and adult vision shape body representations. Scientific Reports, 4, 6622.

 Impact Factor: 4.52

1. **Nava**, E., & Pavani, F. (2013). Changes in sensory dominance during childhood: Converging evidence from the colavita effect and the Sound‐Induced Flash Illusion. Child Development, 84, 604-616.

 Impact Factor: 5.02

1. **Nava**, E., Güntürkün, O., & Röder, B. (2012). Experience-dependent emergence of functional asymmetries. Laterality: Asymmetries of Body, Brain and Cognition, 18, 407-415.

 Impact Factor: 1.09

1. **Nava**, E. & Röder, B. (2011). Adaptation and maladaptation: insights from brain plasticity. Progress in Brain Research, 191, 177-194.

 Impact Factor: 3.04

1. Bottari, D., **Nava**, E., Ley, P., & Pavani, F. (2010). Enhanced reactivity of profound deaf in detection and discrimination tasks. Restorative Neurology and Neuroscience, 28, 167-79.

 Impact Factor: 3.22

1. Marino, B., Stucchi, N., **Nava**, E., Haggard P. & Maravita, A. (2010). Distorting the visual size of the hand affects hand pre-shaping during grasping. Experimental Brain Research, 202, 499 - 505.

 Impact Factor: 2.39

1. **Nava**, E., Bottari, D., Bonfioli, F., Beltrame, M.A., & Pavani, F. (2009). Spatial hearing with a single implant: a study in preverbally deafened adults. Hearing Research, 255, 91-98.

 Impact Factor: 2.82

1. **Nava**, E., Bottari, D., Bonfioli, F., Beltrame, M.A., Portioli, G., Formigoni, P., & Pavani, F. (2009). Hearing again with two ears: recovery of binaural spatial hearing after bilateral cochlear implantation. Neuropsychologia, 47, 928-932.

 Impact Factor: 2.89

1. **Nava**, E., Bottari, D., Zampini, M., & Pavani, F. (2008). Visual temporal order judgment in profoundly deaf individuals. Experimental Brain Research, 2, 179-88.

 Impact Factor: 2.39

# Book Chapters

**Nava**, E., & Bottari, D. (2019). Esperienze atipiche nel corso dello sviluppo. In E. Valenza & C. Turati (Eds). *Promuovere lo sviluppo della mente* (Cap. 5). Bologna: Il Mulino.

Manzone, D., **Nava**, E., Bolognini, N. (2022). Methods for the Assessment of Multisensory Processing. To appear in *Psychophysiology Methods*, eds. Massimiliano Valeriani & Marina De Tommaso.

# Presentations at National and International Conferences

1. **Nava**, E. (2019). Organisation of the symposium “*Percepire e sentire il corpo: evidenze comportamentali e neurofisiologiche nello sviluppo tipico e patologico*”, AIP (Associazione Italiana di Psicologia), Milano, 18-20 September.
2. De Berardis, A., Gamberini, C., Bolognini, N., & **Nava**, E. (2018). *Action shapes the sense of body ownership across human development*. AIP, Madrid, 3-6 Luglio.
3. Frigerio, S., Filipponi, C., Weinreich, L., Turati, C., Grassi, M., & **Nava**, E. (2018). *Unconscious processing of emotions alters the feeling of neutral objects: Evidence from 3-month-old infants*. Cognitive Science Arena, Bressanone, 23-24 February.
4. Gamberini, C., & **Nava**, E. (2017). *Active movements promote the development of a unitary sense of body ownership*. NeuroMi, Università degli Studi Milano-Bicocca, 13-15 September.
5. **Nava**, E., & Rinaldi, L. (2016). *Il feedback visivo e propriocettivo modulano diversamente la rappresentazione del numero e del tempo in bambini di età prescolare e scolare*. Associazione Italiana di Psicologia (AIP – sezione di Psicologia dello Sviluppo), Vicenza, 8-10 September.
6. **Nava**, E., Bolognini, N., & Turati, C. (2015). *The development of a crossmodal sense of body ownership*. International Multisensory Research forum (IMRF), Pisa, 13-16 June.
7. **Nava**, E., Croci, E., & Turati, C. (2015). *Crossmodal correspondences in 3-4-month-old infants for vision, hearing and touch*. Budapest CEU Conference on Cognitive Development (BCCCD), Budapest (Hungary), 8-10 January.
8. **Nava**, E., & Turati, C. (2015). *Emotion understanding in deaf children*. Budapest CEU Conference on Cognitive Development (BCCCD), Budapest (Hungary), 8-10 January.
9. **Nava**, E., Bolognini, N., & Turati, C. (2015). *The somatosensory rubber hand illusion in children*. Budapest CEU Conference on Cognitive Development (BCCCD), Budapest (Hungary), 8-10 January.
10. **Nava**, E., Grassi, M., Croci, E., & Turati, C. (2014). *Crossmodal correspondences in 3-4 month-old infants for vision, hearing and touch*. Workshop on Cognition and Evolution (CogEvo), Rovereto, 6-9 July.
11. **Nava**, E., Güntürkün, & Röder, B. (2012). *Blind kiss: lateralized behaviour in blind individuals*. MMPS, Munich (Germany), 10-12 July.
12. **Nava**, E., Pavani, F. (2011). *Enhanced visual abilities in prelingual but not postlingual cochlear implant recipients*. International Multisensory Research forum (IMRF), Fukuoka (Japan), 17-20 July.
13. **Nava**, E., & Pavani, F. (2009). *Changes in sensory preference during childhood*. International Multisensory Research forum (IMRF), New York (USA), 29 Giugno-2 July.
14. **Nava**, E., Bottari, D., & Pavani, F. (2008). *Fast recovery of binaural spatial hearing in a bilateral cochlear implant recipient*. Cognitive Neuroscience Society (CNS), San Francisco (USA), 12-15 April.
15. **Nava**, E., Bottari, D., & Pavani, F. (2008). *Fast recovery of binaural spatial hearing in a bilateral cochlear implant recipient*. International Conference on Cochlear Implants (CI), San Diego (USA), 17-19 April.
16. **Nava, E.,** Bottari, D., & Pavani, F. (2008). *Hearing again with two ears: recovery of spatial hearing after cochlear implantation*. International Multisensory Research Forum (IMRF), Hamburg (Germany), 6-9 July.
17. **Nava**, E., Bottari, D., & Pavani, F. (2008). *Ascoltare di nuovo con due orecchie: il recupero di abilità uditive spaziali a seguito di impianto cocleare binaurale*. Coordinamento dei Dottorati Italiani in Scienze Cognitive (CODISCO), Noto, 5-7 September.
18. **Nava**, E., Bottari, D., & Pavani, F. (2008). *Ascoltare di nuovo con due orecchie: il recupero di abilità uditive spaziali a seguito di impianto cocleare binaurale*. Associazione Italiana di Psicologia (AIP – sezione di Psicologia Sperimentale), Padova, 18-20 September.
19. **Nava**, E., Bottari, D., Zampini, M., & Pavani, F. (2007). *Visual temporal order judgment in deaf and hearing individuals*. European Conference on Visual Perception (ECVP), Arezzo, 15-18 July.
20. **Nava**, E., Bottari, D., Zampini, M., & Pavani, F. (2007). *Visual temporal order judgment in deaf and hearing individuals*. International Multisensory Research forum (IMRF), Sydney (Australia), 5-8 June.
21. **Nava**, E., Bottari, D., Zampini, M., & Pavani, F. (2007). *Giudizi di ordine temporale visivi in individui sordi e udenti*. Associazione Italiana di Psicologia (AIP – sezione di Psicologia Sperimentale), Como, 17-19 September.

# Peer-reviewing and Editorial activities

**2017-today**

**Associate Editor** for **Frontiers in Psychology**, Developmental Psychology section

Guest Editor for the Special Issue: Women in Sensory Neuroscience. Frontiers, Human Neuroscience (deadline: December 2022)

**Peer-reviewer for the following journals:**

Acta Psychologica

Brain Research

Child Development

Cognition

Cortex

Developmental Science

Experimental Brain Research

Frontiers in Psychology

Infant and Child Development

Infant Behavior and Development

Multisensory Research

Neural Plasticity

Neuropsychologia

PlosOne

Proceedings of the Royal Society of London

Psychological Science

Scientific Reports