

• PERSONAL INFORMATION

Family name, First name: Fusaro, Martina

• EDUCATION

- 2022-2025 School in Cognitive and Behavioral Therapy at “Associazione di Psicologia Cognitiva APC-Scuola di Psicoterapia Cognitiva SPC srl”, Rome (IT). Trainers: Dott.ssa Barbara Barcaccia and Dott.ssa Maria Teresa Rocchi.
- 2018 PhD in Psychology and Social Neuroscience, research curriculum in “Cognitive, Social and Affective Neuroscience” (CoSAN) (coordinator: Prof. Salvatore Maria Aglioti), Department of Psychology, Faculty of Medicine and Psychology, Sapienza University of Rome and Santa Lucia Foundation. Thesis: “The perception of pain and pleasure in immersive virtual reality: behavioral, physiological and neurophysiological evidence”, Supervisor: Dott. G.Tieri
- 2013 MSc with specialization in “Clinical Psychology and Neuropsychology, Faculty of Psychology, University of Milan-Bicocca (IT), 110/110 cum laude

• CURRENT POSITION

2024–2025 Post-doctoral fellow at Istituto di Scienze e Tecnologie della Cognizione, CNR, Rome (Italy)

• PREVIOUS POSITIONS

- 2023 – 2024 Post-doctoral fellow (assegno di ricerca) Department of Psychology, Sapienza University of Rome, Rome (Italy)
- 2021 – 2023 Researcher at Fondazione Santa Lucia, Rome (Italy)
- 2019 – 2021 Post-doctoral fellow (2 assegni di ricerca) Department of Psychology, Sapienza University of Rome, Rome (Italy)
- 2018 – 2019 Post-doctoral fellow Unitelma Sapienza University of Rome, Rome (Italy)
- 2014 – 2018 PhD student Department of Psychology, Sapienza University of Rome, Rome (Italy); Social and Cognitive Neuroscience Laboratory, IRCCS Santa Lucia Foundation, Rome (Italy)

• FELLOWSHIPS

- 2024 – 202 Fellowship at the CNR, Rome (Italy)
- 2023 – 2024 Fellowship at the Department of Psychology, Sapienza University of Rome, Rome (Italy), granted by Sapienza University of Rome – BE-FOR-ERC
- 2019 – 2021 Fellowship at the Department of Psychology, Sapienza University of Rome, Rome (Italy)
- 2018 – 2019 Fellowship at Unitelma Sapienza University of Rome, Rome (Italy)
- 2014 – 2018 Scholarship “Sapienza” University of Rome

• TRAININGS

- 2025 Training at “Medu- Psychè”, engaged in clinical psychotherapy with individuals with a background of immigration. Activities include psychological assessment, and individual therapy, 200 hours.
- 2023 Training at “Studio Caretto e associati”, participated in the assessment, 200

- hours, diagnosis, and intervention processes for autistic individuals.
- 2022 Training at “Spazio Donna-San Basilio”, Cooperativa BEFREE, 200 hours. Supervisor: Evelina Fusco. Skills: empathic listening, counselling, empowerment.
- 2013 Training post-lauream (500 hours) in experimental psychology, Faculty of Psychology, University of Milan-Bicocca (IT). Supervisor: Nadia Bolognini; Skills: Brain stimulation (tDCS, TMS) and neuro-navigation
- 2013 Training post-lauream (500 hours) in in clinical and experimental neuropsychology, Laboratory of Neuropsychology, Italian Institute for Auxology, Milan (IT). Supervisor: Elisabetta Banco; Skills: evaluation and rehabilitation of patients suffering from neurological disease
- 2012 Training pre-lauream (200 hours) in experimental psychology, Faculty of Psychology, University of Milan-Bicocca (IT). Supervisor: Nadia Bolognini; Skills: Brain stimulation (tDCS, TMS), Skin conductance response (SCR)
- 2010 Training pre-lauream (200 hours) Training (200 hours) in clinical Psychology, “Stella Polare CooperativaOnlus”, Milan (IT) Supervisor: Elena Pila; Skills: establish relationships with patients suffering from psychiatric disorders.

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2013-2025 Research co-tutor of a PhD student at the department of Psychology, “Sapienza” University of Rome.
- 2018-2021 Research co-tutor of a PhD student at the department of Psychology, “Sapienza” University of Rome.
- 2017-2023 Research tutor of master’s degree students at the department of Psychology, “Sapienza” University of Rome.

• TEACHING ACTIVITIES

2016/2017/2018/2019/2022/2023/2024 Lectures on “Social touch” and “Positive Empathy”, duration 4h, Class: Social Neuroscience (prof. Salvatore Maria Aglioti). Department of Psychology, Sapienza University of Rome.

• ORGANISATION OF SCIENTIFIC MEETINGS

2017 organizer for the meeting “Mindful perception: insights for pain relief research” Gerace, Italy

• REVIEWING ACTIVITIES

I served as ad-hoc reviewer for the following journals: Neuropsychology, Brain Sciences, PLoS ONE, Scientific Reports, Frontiers in Neuroscience, Social Cognitive and Affective Neuroscience, Vision Research, Cortex, Frontiers in Human Behavior, European Journal of Neuroscience, Biological Psychology; Transactions on Neural Systems & Rehabilitation Engineering

• MAJOR COLLABORATIONS

Bhismadev Chakrabarti, University of Reading (UK), department of Psychology. Investigating the vicarious perception of stimuli in virtual reality in autistic people. Giorgia Silani, University of Vienna. Investigating the interplay between prosopagnosia, oxytocin and empathy.

● RESEARCH INTERESTS

- Perception of vicarious sensations of pain and pleasure in immersive virtual reality
- Interoception and bodily self-awareness in virtual and real-world social interactions
- Social and affective modulation of touch and interpersonal distance
- Empathy and embodied perspective-taking
- Pain modulation through cognitive, emotional, and multisensory mechanisms in healthy and clinical populations
- Autism spectrum conditions and social touch perception
- Chronic pain and its psychophysiological underpinnings

● RESEARCH TECHNIQUES

The above-mentioned topics are investigated through a combination of behavioral, physiological, and neurostimulation methods, including:

- Immersive Virtual Reality (VR) for simulating embodied and social experiences
- Non-invasive brain stimulation, including:
 - Transcranial Direct Current Stimulation (tDCS)
 - Transcranial Alternating Current Stimulation (tACS)
 - Transcranial Magnetic Stimulation (TMS): single-pulse, paired-pulse, cortico-cortical paired associative stimulation (ccPAS), and theta burst protocols
- Psychophysiological recording and analysis, including:
 - Electrodermal activity (EDA / Skin Conductance Response)
 - Cardiac activity: heart rate (HR) and heart rate variability (HRV)
 - Gastric activity during social interactions (such as interpersonal touch)
 - EMG (surface electromyography) for facial and bodily responses
- Behavioral paradigms (reaction times, accuracy, preference ratings), personality assessments, and attitudinal measures
- Online experimental designs and large-scale survey administration

● SUMMARY OF SCIENTIFIC EXPERTISE

My research investigates how bodily and affective signals—such as pain and social touch—are represented and modulated in immersive contexts, with a focus on vicarious experiences, embodiment, and interpersonal dynamics. I combine immersive virtual reality with psychophysiological measures (including heart rate, skin conductance, and more recently gastric activity) to study emotional and bodily responses in both neurotypical individuals and clinical populations, such as people with chronic pain (such as fibromyalgia, spinal cord injuries, endometriosis), cardiovascular diseases (hypertension), or on the autism spectrum. My work also integrates non-invasive brain stimulation techniques (tACS, tDCS, TMS) to explore the neural mechanisms underlying bodily self-awareness and affective processing.

Currently, my research focuses on four main lines: (1) the use of non-invasive brain stimulation combined with virtual reality to reduce pain in fibromyalgia; (2) the investigation of gastric (EGG) and EEG responses during pleasant versus neutral touch in healthy individuals; (3) the role of oxytocin in modulating empathy and stress in autistic adults, including those with prosopagnosia; (4) the modulation of peripersonal space and interpersonal distance through virtual social touch in autism; (5) the study of the psychophysiological correlates of affective touch in clinical populations (autistic people, people with chronic pain and people with cardiovascular diseases), and in healthy individuals.

● SELECTED CONFERENCES

15-18 2025 Giornate della Neuropsicologia Evolutiva, Bressanone. Oral presentation: "Lo studio del tocco sociale, reale e virtuale, in persone autistiche e neurotipiche"

22-25 May 2024 ESCAN 2024, Ghent. Symposium "Touching perspectives: A multidisciplinary exploration of vicarious touch and social interaction across diverse populations and techniques" Organizer Martina Fusaro, Matteo Lisi.

22-25 May 2024 ESCAN 2024, Ghent, Poster Presentation: Martina Fusaro, Manuel Mello, Salvatore Maria Aglioti, Ilaria Minio-Paluello. "Unveiling the dynamics of social touch in autistic and non-autistic adults during intimate, friendly, and professional interactions"

13-15 June 2024 European Workshop on Imagery and Cognition Mind, Brain, Society in the Real and Virtual Worlds. Napoli, Oral presentation at the symposium: Understanding the affective dimension of social interactions in real and virtual spaces at "Exploring social touch perception in fibromyalgia and endometriosis: Insights from virtual reality" Martina Fusaro, Maddalena Beccherle, Valentian Moro, Salvatore Maria Aglioti.

8-11 April 2024 A Metaverse for the Good, Barcellona. Poster presentation. Martina Fusaro, Arianna Vecchio, Luca Provenzano, Salvatore Maria Aglioti. "Exploring the analgesic effects of virtual and real touches: neurophysiological and behavioural evidence"

4-7 July 2023 International Association for the Study of Affective Touch, Marseille. Poster presentation: Fusaro M., Nicolardi V., Provenzano L., "Investigating the Sensory Experience of Virtual and Real Touch During Painful Stimulation".

13-17 September 2021 International Conference Spatial Cognition, 2021 Rome. Invited presentation: Fusaro M., Lisi M., "The influence of sexual orientation on nonverbal interactions".

11-13 September 2019 International Association for the Study of Affective Touch, Linköping. Oral presentation: Fusaro M., "Feeling touch in absence of tactile stimulation: subjective and bodily reactivity to observation of virtual touches on taboo body zones".

15 February 2019 Neuroscience Goes Social II, Department of Psychology Sapienza University of Rome. Oral presentation: Fusaro M., "Vicarious experience of (intimate) touch in Immersive Virtual Reality"

17-19 October 2018 DISSELF 2018 (DIS)Embodied Perception of the Self and Other, Porto (Portugal). Poster presentation: Fusaro M., Lisi M., Tieri G "Vicarious touch in Immersive Virtual Reality"

19-31 August 2018 SPSAN São Paulo School of Advanced Science on Social and Affective Neuroscience (SPSAN). Poster presentation: Fusaro M., Lisi M., Tieri G., "Vicarious pain, pleasant and intimate touch in Immersive Virtual Reality".

6-7 July 2017 3RDworkshop on Virtual Social Interaction (Bielefeld, Germany). Oral presentation. Fusaro M., Tieri G., Aglioti S.M., "Cognitive and Visual Perspective-Taking in immersive virtual reality modulate implicit and explicit reactions to observed pain and pleasure"

29 October 2016 XXIV Congresso SIPF. Poster Presentation. Fusaro M., Tieri G., "Visual perspective changes subjective and psychophysiological reactivity to the virtual pain and pleasure on self and others".

7-15 July Bossey, Switzerland: International Summer School in Affective Sciences (ISSAS) of the National Center of Competence in Research in Affective Sciences.

• GRANTS AND AWARDS

June 2023 Principal investigator of the project “Touch on the Spectrum: social modulation of tactile attitudes in individuals with ASD” grant awarded by Sapienza University of Rome (50000 euro)

November 2020 Principal investigator of the project “The analgesic power of pleasant virtual touch in patients with chronic pain: immersive virtual reality and non-invasive brain stimulation studies”, GR-2019-12369761 Giovani Ricercatori grant awarded by the Italian Ministry of Health (448600 euro)

October 2019 Principal investigator of a starting Research grant awarded by Sapienza University of Rome for the project “The analgesic power of a caress: the role of the virtual touch in the modulation of chronic and acute pain” (2000 euro)

Travel grant per la “São Paulo School of Advanced Science on Social and Affective Neuroscience (SPSAN)”, August 2018

October 2017- January 2018 Grant for research activity abroad (University of Reading, UK), funded by “Sapienza” University of Rome (4500 euro)

2017 Principal investigator of a starting Research grant awarded by Sapienza University of Rome for the project “Observing pain and pleasure on self and others: behavioral, physiological and motor evoked potentials in immersive virtual reality” (1000 euro)

Foundation Research Grant (2016-2017) “Virtual bodies, real empathy: behavioural, bodily, and neural reactivity to the observation of Pain and Pleasure on self and others in immersive virtual reality” (PI: TIERI Gaetano, Co-PI: FUSARO Martina) (45000 euro)

• PUBLICATIONS

Fusaro, M., Lisi, M. P., Era, V., Porciello, G., Candidi, M., Aglioti, S. M., & Boukarras, S. (2025). The Transformative Power of Virtual Reality: Redefining Interactions in Virtual Platforms, Education, Healthcare, and Workplaces. *Topoi*, 1-16.

Nicolardi, V., Lisi, M. P., Mello, M., **Fusaro, M.**, Tieri, G., & Aglioti, S. M. (2025). Taking an embodied avatar’s perspective modulates the temporal dynamics of vicarious pain and pleasure: a Virtual Reality and EEG study. *Social cognitive and affective neuroscience*, 20(1), nsaf035.

Mello, M., **Fusaro, M.**, Aglioti, S. M., & Minio-Paluello, I. (2024). Exploring social touch in autistic and non-autistic adults via a self-report body-painting task: The role of sex, social context and body area. *Autism*, 28(8), 1985-2001.

Mello M., **Fusaro M.**, Aglioti S.M. The neuroscience of human empathy for pleasure: Protocol for a scoping review. *Systematic Reviews*, 13(1), 82

Lisi P.M., & **Fusaro M.**, Aglioti S.M., Visual perspective and body ownership modulate vicarious somatosensory processing: A systematic review. *Systematic Reviews*, 13(1), 82

Mello M., **Fusaro M.**, Aglioti S.M., Minio-Paluello I., Exploring social touch in autistic and non-autistic adults via a self-report body-painting task: the role of sex, social context, and body area. *Autism*. <https://doi.org/10.1177/13623613231218314>

Fusaro M., Fanti V., Chakrabarti B. Greater interpersonal distance in adults with autism *Autism Research*. <https://doi.org/10.1002/aur.3013>

Fini, C., Bardi, L., Bolis, D., **Fusaro, M.**, Lisi, M. P., Michalland, A. H., & Era, V. (2023). The social roots of self development: from a bodily to an intellectual interpersonal dialogue. *Psychological Research*, 1-13.

Fusaro, M., Bufacchi, R., Nicolardi, V., & Provenzano, L. The analgesic power of pleasant touch in individuals with chronic pain: recent findings and new insights. *Frontiers in Integrative Neuroscience*, 108.

Lisi, M., Scattolin, M., **Fusaro, M.**, & Aglioti, S. M. (2021) A Bayesian approach to reveal the key role of mask wearing in modulating projected interpersonal distance during the first COVID-19 outbreak. *Plos One*.

Mello, M., **Fusaro, M.**, Tieri, G., & Aglioti, S. M. (2021). Wearing same-and opposite-sex virtual bodies and seeing them caressed in intimate areas. *Quarterly Journal of Experimental Psychology*, 17470218211031557.

Lisi, M. P., **Fusaro, M.**, Tieri, G., & Aglioti, S. M. (2021). Humans adjust virtual comfort-distance towards an artificial agent depending on their sexual orientation and implicit prejudice against gay men. *Computers in Human Behavior*, 106948.

Fusaro, M., Lisi, M., Tieri, G., Aglioti S.M. (2021). Heterosexual, gay, and lesbian people's reactivity to virtual caresses on their embodied avatars' taboo zones. *Scientific reports*, 11(1), 1-12

Fusco, G., **Fusaro M.**, Aglioti S.M. Midfrontal-occipital Θ -tACS modulates cognitive conflicts related to bodily stimuli. *Social Cognitive and Affective Neuroscience* (2020)

Fusaro, M., Tieri,G., Aglioti S.M. (2019) Influence of cognitive stance and physical perspective on subjective and autonomic reactivity to observed pain and pleasure: An immersive virtual reality study. *Consciousness and cognition*, 67, 86-97.

Era, V. **Fusaro, M.** Gallo, S., (2017) Commentary: "Decoding the Charitable Brain: Empathy, Perspective Taking, and Attention Shifts Differentially Predict Altruistic Giving". *Frontiers in Behavioral Neuroscience*.doi: 10.3389/fnbeh.2017.00110

Fusaro, M., Tieri, G., & Aglioti, S. M. (2016). Seeing pain and pleasure on self and others: behavioral and psychophysiological reactivity in immersive virtual reality. *Journal of Neurophysiology*,116(6), 2656-2662.

Convento S., Bolognini N., **Fusaro M.**, Lollo F., Vallar G., (2014). Neuromodulation of parietal and motor activity affects motor planning and execution. *Cortex*, DOI:10.1016/j.cortex.2014.03.006

Bolognini N., Rossetti A., **Fusaro M.**, Vallar G., Miniussi C., (2014). Sharing social touch in the primary somatosensory cortex. *Current Biology*, DOI: 10.1016/j.cub.2014.05.025

Bolognini, N., Convento, S., **Fusaro M.**, Vallar, G., (2013). The Sound-induced Phosphene

- **MANUSCRIPTS SUBMITTED OR IN PREPARATION**

Mello, M., **Fusaro, M.**, Aglioti, S. M., & Minio-Paluello, I. Centrality of touch avoidance in social touch experiences in autism. (Under review)

Lisi M.P, Verga C., Aglioti S.M., **Fusaro M.**, Translating, adapting and validating the Touch Experiences and Attitudes Questionnaire (TEAQ) for the Italian population (Under review)

Fusaro, M., Provenzano, L., Nicolardi, V., Aglioti, S. M.. The analgesic effect of real and virtual touch: a comparative study in healthy participants. (Submitted)

Vecchio, A., Markovic, I., Provenzano, L., Pesci, U., Aglioti, S. M., **Fusaro, M.** (in preparation). The role of spatial congruence and modality in the modulation of pain: Behavioral and EEG evidence from real and virtual touch.

Fusaro, M., Ummarino, E., Vecchio, A., Provenzano, L., Pesci, U., Scivoletto, G., Aglioti, S. M. (in preparation). Pleasant touch and chronic pain: Behavioral and neurophysiological responses in patients with fibromyalgia and spinal cord injury.

Fusaro, M., Aglioti, S. M. (in preparation). Perceived pleasantness and pain modulation of virtual touch in women with endometriosis.