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Interactional beings: the power of automatic mimicry and nonverbal cues in shaping human-human and human-robot naturalistic interactions

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Curriculum Vitae



Fabiola Diana was born in Turin (Italy) on August 22, 1993 and graduated from Liceo Carlo Cattaneo (Turin, Italy) in 2012. She completed her Bachelor's program in Psychological Sciences at the University of Turin (2012–2015), where she was trained in experimental psychology, neuroscience, and affective science, and developed an early interest in emotion perception and social behavior. She continued at the same institution with a two-year Master of Science in Neuroscience and Neuropsychology (2015–2017), graduating *summa cum laude*. During her Master's program, she undertook a thesis project at the "Puzzle" Traumatic Brain Injury Rehabilitation Centre in Turin (2016–2017) in collaboration with Turin Ophthalmic Hospital, investigating facial emotion recognition and affective processes deficits in patients with acquired brain injury before and after neurocognitive rehabilitation and visual scanpath training. These experiences increasingly oriented her interests toward the fundamental bases of emotion, particularly how emotions are expressed and perceived in social interaction. Following her Master's degree, Fabiola worked as a research assistant at the University of Turin under the supervision of Prof. Marco Tamietto and Dr. Alessia Celegghin (2018–2019), investigating unconscious processing of emotional signals from faces and bodies and associated autonomic responses. In 2019, she joined Leiden University as a visiting research assistant in the Department of Cognitive Psychology, collaborating with Prof. Mariska E. Kret and Dr. Eliška Procházková on pupil dilation and emotional expression analysis. These experiences sparked her interest in how social dynamics and affective processes unfold in *real* interactions, inspiring her to move beyond highly controlled computer tasks that, though informative, cannot capture their full complexity and nuances. Later in 2019, Fabiola was selected as a PhD student at the Comparative Psychology and Affective Neuroscience lab at Leiden University, under the supervision of Prof. Mariska E. Kret and Dr. Ruud Hortensius, within an ERC Horizon-funded project. During her PhD, she investigated how social context modulates mimicry and synchrony, moving from face-to-face human interaction to mediated communication and interactions with artificial agents. Her work integrated social neuroscience, psychophysiology, and human–robot interaction, resulting in several peer-reviewed publications. Throughout her doctoral training, Fabiola independently pursued international and interdisciplinary collaborations. She collaborated with Prof. Lola Cañamero (CY Cergy Paris Université, France) on evolutionary and embodied approaches to artificial sociality, with Dr. Ivan Norscia (University of Turin) on comparative perspectives on social behaviour, and with Dr. Oscar Juárez-

Mora (Universidad Autónoma de Puebla, Mexico) on comparative approaches to mimicry. She was awarded multiple grants and fellowships, including the *Japanese Society for the Promotion of Science (JSPS)* Postdoctoral Short-Term Fellowship, which supported her research at the Tokyo Woman's Christian University (Japan) in 2023 under the supervision of Prof. Akihiro Tanaka. There, she investigated cross-cultural differences in dishonesty toward humans and artificial agents using eye-tracking and pupil size manipulation in naturalistic dyadic interactions. During her PhD, Fabiola was actively involved in teaching, supervising bachelor's and master's students, and lecturing in social and cognitive neuroscience, emotion, and psychophysiology. She also delivered several guest lectures at Tokyo Woman's Christian University and Utrecht University, as well as recurrent lectures on affective processing following traumatic brain injury at the University of Turin. She regularly presented her work at different international conferences and workshops across Europe, Australia, Canada, and the United States. Driven by the passion and inspiration for interdisciplinary research, in 2023, she applied and was awarded a KIEM seed grant to co-organize an interdisciplinary, cross-species pre-conference workshop in Belfast (UK) together with Prof. Mariska Kret and Dr. Joost Broekens, bringing together researchers from animal affective science, human emotion research, and artificial intelligence. Fabiola is actively engaged in academic service and community building. She serves as guest editor for a special theme issue on cross-species emotions and social behaviour, acts as Area Chair for the *Human-Robot Interaction Pioneers*, and is an active member of two international scientific societies. In 2025, she was selected as a Human–Robot Interaction Pioneer, an international recognition awarded to early-career researchers shaping the future of the field. Beyond academia, Fabiola is committed to public outreach and science communication. She has participated in science outreach events, such as the EuroScience Open Forum (2022), and was a national finalist in FameLab (2020). In 2025, Fabiola continued her academic career as a postdoctoral researcher at Utrecht University in the Department of Social, Health, and Organizational Psychology, working with Dr. Ruud Hortensius on an NWO-funded project they co-wrote together. Her current research examines multimodal naturalistic social interactions between humans and AI across the lifespan, combining behavioural economics paradigms with physiological and neural measurements.



A detailed pencil drawing of a dragon's head and wings. The dragon's head is in the lower-left quadrant, facing right, with a large, circular eye and a snout. Its wings are spread wide, showing intricate vein patterns and a fringed edge. The drawing is executed with fine lines and shading, giving it a textured, three-dimensional appearance. The background is a plain, light-colored surface.

List of Publications

Published

van Beek, H., Boda, D., **Diana, F.**, Held, R., Hogenhuis, A., Moore-Lorusso, A. & Hortensius, R. (in press) Seven Questions on Perceiving and Understanding Other Minds, Behaviour Brill.

All authors contributed equally to this publication and are listed alphabetically

Diana, F., & Kret, M.E. (2025) First predict, then bond: Rethinking the function of mimicry from prediction to affiliation in human and non-human animals, *Neuroscience & Biobehavioral Reviews*, 168, 105950, DOI: 10.1016/j.neubiorev.2024.105950

Diana, F., Hortensius, R. & Kret, M.E. (2025) Can Robots Trust Us? Neuropsychophysiological Insights into Honesty Towards Artificial Agents. In *Proceedings of the 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI '25)*. IEEE Press, 1838–1840. 10.1109/HRI61500.2025.10974055

Diana, F., Cañamero, L., Hortensius, R. & Kret, M.E. (2024). Merging sociality and robotics through an evolutionary perspective. *Science Robotics* DOI: 10.1126/scirobotics.adk6664

Diana, F., Juárez-Mora, O.E., Boekel, W., Hortensius, R. & Kret, M.E. (2023) How video calls affect mimicry and trust during interactions. *Philosophical Transaction of the Royal Society B*, DOI: 378:20210484.v <https://doi.org/10.1098/rstb.2021.0484>

Diana, F., Kawahara, M., Saccardi, I., Hortensius, R., Tanaka, A. & Kret, M.E. (2023). A Cross- Cultural Comparison on Implicit and Explicit Attitudes Towards Artificial Agents. *International Journal of Social Robotics*, DOI: 10.1007/s12369-022-00917-7 5

Preprints under review

Diana, F., Folz, J., Shjak-Shie, E., Hortensius, R. & Kret, M.E. (2025) Physiological Synchrony Predicts Reduced Reciprocity in Human Face-to-Face Interactions, *PsyArXiv* (In review at *Proceeding of the Royal Society B*) https://doi.org/10.31234/osf.io/n85t3_v1 Appendices 262



Appendices

Diana, F., Kawahara, M., Tanaka, A., Shalvi, S., Hortensius, R.* & Kret, M.E.* (2025) Cross-Cultural Variation in Dishonesty Toward Humans and Artificial Agents Depends on Agent Pupil Size, PsyArXiv (In review at ACM Transactions on Human-Robot Interaction) https://doi.org/10.31234/osf.io/8nqsy_v1 **authors share last authorship*

Diana, F.*, Samara, I.*, Taş, F. & van Berlo, E., Roth, T. & Kret, M.E. Paradigms and Techniques Tapping into Attention Toward Emotion Across Mammalian Species (Submitted book chapter for Routledge)
**authors contributed equally and are listed alphabetically*

In preparation

Diana, F., Held, R., Shjak-Shie, E., Hortensius, R. & Kret, M.E. Physiological Synchrony During Cooperation vs. Competition in an Iterated Prisoner's Dilemma

Behrens, F., **Diana, F.**, Moulder, R.G., Boker, S.M. & Kret, M.E. Quantifying Physiological Synchrony through Windowed Cross-Correlation Analysis: Statistical and Theoretical Considerations

Diana, F.*, Panormita, M.*, Celeghein, A.†, Diano, M.†, Kret, M.E. & Tamietto, M. Unconscious Processing of Emotional Faces and Bodies: an fMRI and psychophysiological study **share first authorship; † authors contributed equally to the work*

Diana, F., Norscia, I. & Kret, M. Are there super mimickers and are they empathetic? Exploring the relationship between contagious yawning, facial mimicry, and empathy