Corrado Corradi-Dell'Acqua, PhD

Neuroscientist · Cognitive Psychologist · Data Scientist
Researching Pain, Chemosensory Disgust & Social Cognition

University of Geneva – Campus Biotech, Chemin des Mines 9, Geneva, Switzerland
Tel: +4176679734. *Email*: corrado.corradi@outlook.com

Education

PhD in Neuroscience
October 2007
International School for Advanced Studies (SISSA/ISAS), Trieste, Italy

Master in Psychology
October 2001
UHSR University Hospital San-Raffaele, Milan, Italy
Grade: 110/110 cum laude

Skills

Project coordination ·Funding management · Scientific writing & communication · Experimental design · Brain imaging · Electrophysiology · Nociceptive, olfactory and gustatory stimulations · Programming *(Matlab)* · Data analysis *(R, Matlab, SPSS)* · Machine learning *(SVM, random forest, lasso)*

Linguistic Proficiency

English (high proficiency)
Italian (native language)
French (good proficiency)

References

Prof. Patrik Vuilleumier
patrik.vuilleumier@unige.ch

Prof. David Sander
david.sander@unige.ch

Prof. Raffaella I. Rumiati
rumiati@sissa.it

Cognitive neuroscientist and psychologist with:

- 14 years of experience in the study of the human adult brain, through behavioral measures, electrophysiology and brain imaging.
- 10 years of experience in the study of pain, ***chemosensory disgust*** and their interaction with social cognition and ***decision-making***
- 6 years of experience as ***laboratory director*** and team leader.

Research in both fundamental and translational topics, including: ***neural fingerprinting*** of somatic affect, ***prediction of real-life behaviour*** from brain activity, development of VR game for pain relief. Experience in projects combining academic and ***non-academic research parties***.

Professional Experience

2015-2021 – Assistant Professor
Faculty of Psychology and Educational Sciences (FPSE), University of Geneva, Geneva, Switzerland

2009-2015 – Post-doc and Maitre Assistant
Swiss Centre for Affective Sciences, University of Geneva, Switzerland

2007-2009 – Post-doc
Cognitive Neuroscience Sector, International School for Advanced Studies (SISSA/ISAS), Trieste, Italy

2006-2007 – Research Assistant
Institute of Neuroscience and Biophysics, Research Centre Jülich, Germany.

Accomplishments

- 37 scientific publications in: *Science Advances*, *Nature Communications*, *eLife*, etc. H-index = 16, > 900 citations (Sources: Web of Science).
- Secured funding for *> 3'000'000 CHF* across different projects.
- Directed/directing the thesis of 4 PhD and 11 Master students.
- Teaching: 2 full courses and multiple classes for Master/PhD Programs; continuing medical education lectures for non-academic audience.
- Extensive peer review and report drafting activity for scientific journals and funding schemes.
- Since 2019, council member of the *Swiss Society for Neuroscience*

Funding information

June, 2020 – "VRelief : la réalité virtuelle pour prévenir et soulager la douleur et l'anxiété liées aux soins des enfants hospitalisés. Création et validation d'un outil Genevois innovant". *[VRelief: the vitual reality to prevent and relief pain in hospitalized children. Creation and validation of an innovative tool from Geneva]*. Fondation Privée des HUG. Appel à projets «Patients/Qualité des soins». Principal Investigator: Cyril Sahyoun. Personal Role: Team Member. Sum awarded: *117'000 CHF*. Status: Ongoing.

October, 2018 – "Cognitive and neural systems for understanding others and their somatic states". *Swiss National Science Foundation* Boursier Professorship Prolongation. n. PP00P1_183715. Role: Principal Investigator. Sum awarded: *766'782 CHF*. Status: Ongoing.

September, 2018 – "Deciphering the neural impact of sleep loss on metacognition and empathic judgments for pain". *Swiss National Science Foundation*. n. 320030_182589. Role: Partner. Principal Investigator: S. Schwartz. Sum awarded: 700'000 CHF. Status: Ongoing.

February, 2015 – "Cognitive and neural systems for understanding others and their somatic states". *Swiss National Science Foundation* Boursier Professorship. n. PP00O1_157424. Role: Principal Investigator. Sum awarded: *1'357'062 CHF*. Status: Closed.

September, 2011 – "Your pains and my dangers: Linking empathy to shared predictive coding in the human anterior insula". *Swiss National Science Foundation*. n. 32003B_138413. Role: Co-applicant. Principal Investigator: P. Vuilleumier. Sum awarded: *305'803 CHF*. Status: Closed.

Publications

Chemosensory processing

Sharvit G., Lin E., Vuilleumier P., & **Corradi-Dell'Acqua C.** (2020) Does inappropriate behavior hurt or stink? The interplay between neural representations of somatic experiences and moral decisions. *Science Advances, 6*, eaat4390. *doi: 10.1126/sciadv.aat4390*

Dirupo G., Garlasco P., Chappuis C., Sharvit G., & **Corradi-Dell'Acqua C.** (2020) State-specific and supra-ordinal components of facial response to pain. *IEEE Transactions on Affective Computing*. doi: 10.1109/TAFFC.2020.2965105

Antico L., Cataldo E. & **Corradi-Dell'Acqua C.** (2019) Does my pain affect your disgust? Cross-modal influence of first-hand aversive experiences in the appraisal of others' facial expressions. *European Journal of Pain, 23*, 1283-1296. *doi: 10.1002/ejp.1390*

Antico L., Guyon A., Mohamed Z.K. & **Corradi-Dell'Acqua C.** (2018) Beyond Unpleasantness. Social exclusion affects the experience of pain, but not of equally-unpleasant disgust. *Cognition, 181*, 1-11. *doi: 10.1016/j.cognition.2018.08.002*

Sharvit G., **Corradi-Dell'Acqua C.**, & Vuilleumier P. (2018) Modality-specific effects of aversive expectancy in anterior insula and medial prefrontal cortex. *Pain, 159*, 8, 1529–1542. *doi: 10.1097/j.pain.0000000000001237*

Corradi-Dell'Acqua C., Tusche A., Vuilleumier P. & Singer T. (2016) Cross-modal representations in anterior insula and cingulate cortex. Evidence for shared and distinct neural codes for first-hand and vicarious pain, disgust, and unfairness. *Nature Communications, 7*, 10904. *doi: 10.1038/ncomms10904*

Sharvit G., Vuilleumier P., Delplanque S., & **Corradi-Dell'Acqua C.** (2015) Cross-modal and modality-specific expectancy effects between pain and disgust. *Scientific Reports, 5*, 17487. *doi: 10.1038/srep17487*

Other peer-reviewed publications

Dirupo G., Totaro S., Richard J., & **Corradi-Dell'Acqua C.** (2021). Medical education and distrust modulate the response of insular-cingulate network and ventral striatum in pain diagnosis. *eLife, 10*, e63272. *doi: 10.7554/eLife.63272*

Dirupo G., **Corradi-Dell'Acqua C.**, Kashef M., Debbané M., & Badoud D. (2020). The role of interoception in understanding others' affect. Dissociation between superficial and detailed appraisal of facial expressions. *Cortex, 136*, 16-31. *doi: 10.1016/j.cortex.2020.05.010*

Corradi-Dell'Acqua C., Ronchi R., Thomasson M., Bernati T., Saj. A & Vuilleumier P. (2020). Deficits in cognitive and affective theory of mind relate to dissociated lesion patterns in prefrontal and insular cortex. *Cortex, 128*, 218-233. *doi: 10.1016/j.cortex.2020.03.019*

Doell K., Olié E., Courtet P., **Corradi-Dell'Acqua C.**, Perroud N., & Schwartz S. Atypical processing of social anticipation and feedback in borderline personality disorder (2020). *Neuroimage: Clinical, 25*, 102126. *doi: 10.1016/j.nicl.2019.102126*

Corradi-Dell'Acqua C., Foester M., Sharvit G., Trueb L., Foucault E., Fournier Y., Vuilleumier P. & Hugli O. (2019) Pain management decisions in emergency hospitals are predicted by brain activity during empathy and error monitoring. *British Journal of Anaesthesia, 123* (2), e284-e292. *doi: 10.1016/j.bja.2019.01.039*

Sharvit G., Vuilleumier P., & **Corradi-Dell'Acqua C.** (2019) Sensory-specific predictive models in the human anterior insula. *F1000Research, 8*, 164. *doi: 10.12688/f1000research.17961.1*

Olié E., Doell K., **Corradi-Dell'Acqua C.**, Courtet P., Perroud N., Schwartz S. (2018) Physical pain recruits the nucleus accumbens during social distress in borderline personality disorder. *Social Cognitive and Affective Neuroscience, 13*, 10, 1071-1080. *doi: 10.1093/scan/nsy078*

Qiao-Tasserit E., **Corradi-Dell'Acqua C.**, & Vuilleumier P. (2018) The good, the bad, and the suffering. Transient emotional episodes modulate the neural circuits of pain and empathy. *Neuropsychologia, 116*, Part A, 99-116. *doi: 10.1016/j.neuropsychologia.2017.12.027*

Schobert A.K., **Corradi-Dell'Acqua C.**, Frühholz S., van der Zwaag W., & Vuilleumier P. (2018) Functional Organization of Face Processing in the Human Superior Temporal Sulcus: A 7T High-Resolution fMRI Study. *Social Cognitive and Affective Neuroscience, 13*, 102-113. *doi: 10.1093/scan/nsx119*

Domínguez-Borràs J., Rieger S.W., **Corradi-Dell'Acqua C.**, Neveu R., & Vuilleumier P. (2017) Fear spreading across senses: visual emotional events alter cortical responses to touch, audition, and vision. *Cerebral Cortex, 27*, 68–82. *doi: 10.1093/cercor/bhw337*

Corradi-Dell'Acqua C., Koban L., Leiberg S., & Vuilleumier P. (2016). Editorial: What Determines Social Behavior? Investigating the role of emotions, self-centered motives, and social norms. *Frontiers in Human Neuroscience, 10*, 342. *doi: 10.3389/fnhum.2016.00342*

Corradi-Dell'Acqua C., Turri F., Kaufmann L., Clément F., & Schwartz S. (2015) How the brain predicts people's behavior in relation to rules and desires. Evidence of a medio-prefrontal dissociation. *Cortex, 70*, 21-34. *doi: 10.1016/j.cortex.2015.02.011*

Corradi-Dell'Acqua C., Fink G. R., Weidner R. (2015) Selecting Category Specific Visual Information: Top-Down and Bottom-up Control of Object-Based Attention. *Consciousness and Cognition, 35*, 330-341. *doi: 10.1016/j.concog.2015.02.006*

Corradi-Dell'Acqua C., Hofstetter C. & Vuilleumier P. (2014). Cognitive and affective theory of mind share the same local patterns of activity in posterior temporal but not medial prefrontal cortex. *Social Cognitive and Affective Neuroscience, 9*, 1175-1184. *doi: 10.1093/scan/nst097*

Corradi-Dell'Acqua C., Schwartz S., Meaux E., Hubert B., Vuilleumier. P. & Deruelle C. (2014). Neural responses to emotional expression information in high- and low-spatial frequency in autism. Evidence for a cortical dysfunction. *Frontiers in Human Neurosciences, 8*, 189. doi: 10.3389/fnhum.2014.00189

Mengotti P., **Corradi-Dell'Acqua C.**, Negri G. A. L., Ukmar M., Pasavento V., & Rumiati, R. I. (2013). Selective imitation impairments differentially interact with language processing. *Brain, 136*, 2602-2618. doi: 10.1093/brain/awt194

Corradi-Dell'Acqua C., Civai C., Rumiati R.I., & Fink G. R. (2013). Disentangling self- and fairness- related mechanisms in the Ultimatum Game: an fMRI study. *Social Cognitive and Affective Neuroscience, 8*, 424-431. *doi: 10.1093/scan/nss014*

Koban L., **Corradi-Dell'Acqua C.**, & Vuilleumier P. (2013) Integration of Error Agency and Representation of Others' Pain in the Anterior Insula. *Journal of Cognitive Neuroscience, 25*, 258–272. *doi: 10.1162/jocn_a_00324*

Mengotti P., **Corradi-Dell'Acqua C.**, & Rumiati R.I. (2012) Imitation components in the human brain: An fMRI study. *NeuroImage, 59*, 1622–1630. *doi: 10.1016/j.neuroimage.2011.09.004*

Corradi-Dell'Acqua C., Tomelleri L., Bellani M., Rambaldelli G., Cerini R., Pozzi Mucelli R., Balestrieri M., Tansella M. & Brambilla P. (2012). Thalamic-insular dysconnectivity in Schizophrenia. Evidence from Structural Equation Modeling. *Human Brain Mapping, 33*, 740-752. *doi: 10.1002/hbm.21246*

Corradi-Dell'Acqua C., Hofstetter C. & Vuilleumier P. (2011) Felt and observed pain have shared distributed representations in human anterior insula. *Journal of Neuroscience, 31*, 17996-18006. *doi: 10.1523/JNEUROSCI.2686-11.2011*

Papeo L., **Corradi-Dell'Acqua C.**, & Rumiati R.I. (2011) "She" is not like "I". The tie between language and action is in our imagination. *Journal of Cognitive Neuroscience, 23*, 3939-3948. *doi: 10.1162/jocn_a_00075*

Rumiati R.I., Papeo L., & **Corradi-Dell'Acqua C**. (2010). Higher-level motor processes. *Annals of the New York Academy of Sciences, 1191*, 219-241. *doi: 10.1111/j.1749-6632.2010.05442.x.*

Corradi-Dell'Acqua C., & Tessari A. (2010) Is the Body in the Eye of the Beholder? Visual Processing of Bodies in Individuals with Anomalous Anatomical, Sensory and Motor Features. *Neuropsychologia, 48*, 689-702. *doi: 10.1016/j.neuropsychologia.2009.11.029*

Civai C., **Corradi-Dell'Acqua C.**, Gamer M., & Rumiati R. I. (2010) Are irrational reactions to unfairness truly emotionally-driven? Dissociated behavioral and emotional responses in the Ultimatum Game task. *Cognition, 114*, 89-95. *doi: 10.1016/j.cognition.2009.09.001*

Rumiati R. I., Carmo J. C., & **Corradi-Dell'Acqua C.** (2009) Neuropsychological perspectives on the mechanisms of imitation. *Philosophical Transactions of the Royal Society. B., 364*, 2337-2347. *doi: 10.1098/rstb.2009.0063*

Viviani P., Burkhard P., Catalano Chiuvé S., **Corradi-Dell'Acqua C.**, & Vindras P. (2009) Velocity control in Parkinson's disease: A quantitative analysis of isochrony in scribbling movements. *Experimental Brain Research, 194*, 259-283. *doi: 10.1007/s00221-008-1695-z*

Corradi-Dell'Acqua C., Tomasino B., & Fink G. R. (2009) What is the Position of an Arm relative to the Body? Neural Correlates of Body Schema and Body Structural Description. *Journal of Neuroscience, 29*, 4162-4171. *doi: 10.1523/JNEUROSCI.4861-08.2009*

Corradi-Dell'Acqua C., Hesse M. D., Rumiati R. I., & Fink G. R. (2008). Where Is A Nose With Respect To A Foot? The Left Posterior Parietal Cortex Processes Spatial Relationships Among Body Parts. *Cerebral Cortex, 18*, 2879-2890. *doi: 10.1093/cercor/bhn046*

Corradi-Dell'Acqua C., Ueno K., Ogawa A., Cheng K., Rumiati R. I., & Iriki A. (2008). Effects of Shifting Perspective of The Self: an fMRI study. *NeuroImage, 40*, 1902-1911. *doi: 10.1016/j.neuroimage.2007.12.062*

Non peer-reviewed publications

Silvestrini, L., & **Corradi-Dell'Acqua, C.** (2021). The impact of pain on subsequent effort and cognitive performance. *PsyArXiv. doi: 10.31234/osf.io/gwaup*

Corradi-Dell'Acqua C., Hofstetter C., Sharvit G., Hugli O., & Vuilleumier P. (2021). Healthcare experience disrupts representational similarity between one's and others' pain in anterior insula. *bioRxiv, doi: 10.1101/2021.07.01.450687*

Antico, L., & **Corradi-Dell'Acqua, C.** (2021). Far from the eyes, far from the heart. COVID-19 confinement dampened sensitivity to painful facial features. *PsyArXiv. doi: 10.31234/osf.io/ewvp7*

Loued-Khenissi L., & **Corradi-Dell'Acqua C.** (2020). Assessing Self-Other Distinctions Through Decision-making Under Risk in The Era of Covid-19. *PsyArXiv. doi: 110.31234/osf.io/qrbza*

Corradi-Dell'Acqua C., & Rumiati R. I. (2007). What Does the Brain Know About The Body? Evidence of Dissociable Representations. In: F. Santoianni and C. Sabatano (Eds.), *Brain Development In Learning Environments: Embodied Cognition and Perceptual Learning* (pp. 50-64). Newcastle, UK: Cambridge Scholar Publishing.

Teaching

Full Courses

2015-2021: "Corps et Cognition: l'embodiment" *[Body and Cognition: Embodiment]* Course for the Master in Neuroscience and the Master in Psychology, University of Genève, Genève, Switzerland.

2014-2015: "First and second level analysis of fMRI data and multivoxel pattern analysis". Course held for the PhD program in Neuroscience, International School for Advanced Studies (SISSA-ISAS), Trieste, Italy.

Course Classes

2019-2021: "Disorders of Body Representation". Class for the Course of "Clinical and Experimental Neuropsychology" (organized by R. Ronchi) in the Master in Neuroscience. University of Genève, Genève, Switzerland.

2015-2021: "Embodied Cognition". Class for the Course of "Introduction aux neurosciences cognitives et affectives" (organized by P. Vuilleumier) in the Master in Neuroscience. University of Genève, Genève, Switzerland.

2012-2014: "Investigating Moral Judgment through Cognitive Neuroscience and Neuroimaging". Class for the Course of "Neurosciences, éthique et evolution" (organized by A. Mauron, S. Hurst, B. Baertschi) in the Master in Neuroscience, University of Genève, Genève, Switzerland.

2010-2013: "Action and Body Representations". Class for the Course of "Introduction aux neurosciences cognitives et affectives" (organized by P. Vuilleumier) in the Master in Neuroscience. University of Genève, Genève, Switzerland.

2013: "Self-based vs. Fairness-based economical decisions: neural correlates". Class for the Course "Emotions et processus d'évaluation: Comprendre autrui" (organized by T. Brosch) in the Master in Psychology, University of Genève, Genève, Switzerland.

Teaching Seminars

2016-2017: "Pain and Empathy" Seminar part of the Neuroconferences for the Master of Neuroscience, University of Lyon, Lyon, France.

2013: "Common activation patterns between basal cognitive/emotional processes and high-level social interactions" Seminar at the FENS-IBRO Training Centre 2013, Lausanne & Genève, Switzerland.

2013: "Value, emotion and decision-making: psychological and neural mechanisms" (together with T. Brosch). Seminar at the International Summer School in Affective Sciences 2013, Château de Bossey, Bogis-Bossey, Switzerland.

Continuing Medical Education

2019: "Quantifier et gérer la douleur: le point de vue des neurosciences et de la psychologie" *[Quantifying and manage pain: the point of view of neuroscience and psychology]*. Class or the course of continuing education for osteopaths. Geneva, Switzerland.

2013: "Empatia ed autismo" *[Empathy and autism]*, Class of the Continuing Medical Education course: "Neurobiologia e Neuroriabilitazione dell'autismo: le nuove frontiere della ricerca traslazionale", Udine, Italy

2009: "Le Neuroimmagini Funzionali" *[Functional Neuroimaging]*, Class of the Continuing Medical Education course: "Incontri con le Neuroscienze" Trieste, Italy

2007: "La Rappresentazione visiva del corpo umano e le sue basi neurali" *[Visual representation of the human body and underlying neural correlates]*, Class of the Continuing Medical Education course: "Neuropsicologia e Neuroimaging" Trieste, Italy.

Students Mentoring & Supervision

Gil Sharvit – PhD thesis: "*Expectancy effects of Pain and Disgust in Perceptual and Moral Decisions"*, Faculty of Science, University of Geneva. Defense: 30 November 2016 (co-direction with prof Patrik Vuilleumier). Grade: 5.5/6

Giada Dirupo – PhD thesis: *"Cognitive and neural systems for understanding others' pain"*. Faculty of Psychology and Educational Sciences, University of Geneva. Defence: 23 April 2020. Grade: 6/6

Lia Antico – PhD thesis: *"Beyond unpleasantness. The interplay of social cognition and the somatic-affective states of pain and disgust"*. Faculty of Psychology and Educational Sciences, University of Geneva. Defence: 15 July 2020. Grade: 6/6

Emilie Qiao-Tasserit – PhD thesis on the effect of transient emotional events on social processing. Faculty of Sciences, University of Geneva. Planned Defence: 16 September 2021 (co-direction with prof Patrik Vuilleumier).

Since 2015 I was the thesis (co-)director of 11 students from the Master of Psychology at, UNIGE.

Awards

March 2019: Prix Coup de cœur for the project "VRrelief: Virtuellement soulager la (douloureuse) réalité des soins aigus des plus petits" *[Virtually relieving the (painful) reality of acute care in children]*. Project presented at the 4th Hackaton of the University Hospital of Geneva (Switzerland).

Other Activities

Thesis Committees

Ad hoc member of the committee for a PhD thesis defence at:

- School of Psychology University of Bradford, Bradford, United Kingdom.
- Doctorat en Science du Sport, Université Paris Sud 11, Orsay, France.
- Doctoral Program in Neurosciences and Cognitive Sciences, University of Trieste, Trieste, Italy.
- Doctoral Program in Psychological Sciences and Education, University of Trento, Trento, Italy.
- Doctoral Program in Psychology, Rey Juan Carlos University, Madrid, Spain.
- Doctoral Program in Psychology, University of Geneva, Geneva, Switzerland.

Ad hoc member of the committee for a Master thesis defence at the Master in Neurosciences, University of Geneva, Geneva, Switzerland.

Peer Review

More the 100 reviews since 2009 in scientific journals such as: Science, Nature Neuroscience, PNAS, Neuroscience and Biobehavioral Reviews, Cerebral Cortex, Journal of Neuroscience, Cortex, Journal of Pain, Psychological Science, Human Brain Mapping, Neuroimage, etc.

Ad hoc reviewer for the following funding agencies:

- Wellcome Trust, United Kingdom
- Netherland Organization for Scientific Research (NWO), Netherlands
- Uni:DOCs PhD program (University of Vienna), Austria
- Fondation Neurodis, Ministères Français de la Santé et de la Recherche, France.
- PRIN, Ministero dell'Istruzione dell'Università e della Ricerca, Italy

Editorial Experience

Editor for the Special Issue: **Corradi-Dell'Acqua C.**, Leiberg S., Koban L., Vuilleumier P., & Fehr E. (2013). What Determines Social Behavior? Investigating the role of emotions, self-centered motives, and social norms. Research Topic co-hosted by *Frontiers in Human Neuroscience & Frontiers in Emotional Science*.

02 September 2021