

Nicolás Alejandro Comay

PhD candidate

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Education

PhD in Neurosciences, National University of Córdoba (UNC-Argentina).

2021-present

Supervisor: Dr. Pablo Barttfeld. Co-supervisor: Dr. Guillermo Solovey.

Degree in Psychology, National University of Córdoba (UNC-Argentina).

2016-2020

Recipient of the 'University Award' for academic excellence (highest GPA among on-time graduates).

Publications

Comay, N.A.; Solovey, G.; Barttfeld, P. Confidence phenotypes: a unified computational account of value and decision certainty in reinforcement learning. *eLife*, 15:RP111820. 2026

Comay, N.A.; Solovey, G.; Barttfeld, P. Iconic vs. working memory metacognition to evaluate the richness of perception: a registered report. *Royal Society Open Science*, 12(11), 231805. 2025

Comay, N.A.; Solovey, G.; Barttfeld, P. Decisions are based on less information than metacognitive judgments in multialternative contexts. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 52(7), 1080–1093. 2025

Barttfeld, P.; **Comay, N.A.**; Embon, I.; Solovey, G. Pre- and post-decision signals of certainty in changing minds. *Trends in Neurosciences*, 48(12), 935-937. 2025

Zapata, J. M.⁺, **Comay, N. A.**⁺, Taricco, G., Barttfeld, P., Solovey, G., Saal, A., & Ahumada, J. V. Metacognitive sensitivity on the Iowa Gambling Task reveals awareness as a necessary condition for advantageous performance. *Experimental Psychology*, 71(6), 343–351. ⁺joint first authors. 2025

Comay, N. A., Della Bella, G., Lamberti, P., Sigman, M., Solovey, G., & Barttfeld, P. The presence of irrelevant alternatives paradoxically increases confidence in perceptual decisions. *Cognition*, 234, 105377. 2023

Scholarships and distinctions

ACADEMIC SCHOLARSHIPS & AWARDS

Dr. Pedro Pavesi award for best presentation at the conference "The future of decision-making sciences" (Center of Rationality, Action and Decision – Economics School – University of Buenos Aires). 2022

Incubator project prize at the First Annual Summer School on Consciousness and Metacognition (University College London and Université de recherche Paris Sciences et Lettres). 2021

PhD fellowship. National Scientific and Technical Research Council of Argentina (CONICET). 2021

University Award from the National University of Córdoba for academic excellence (highest GPA among on-time graduates). 2021

Stimuli to Scientific Vocations scholarship. Undergraduate scholarship from the National Interuniversity Council of Argentina. 2020

TRAVEL GRANTS FOR ACADEMIC EVENTS

Travel grant to assist to the 2025 Multi-disciplinary Conference on Reinforcement Learning and Decision Making (Trinity College Dublin, Ireland) 2025

Travel grant to assist to the Neuroscience of Consciousness Winter School (Canadian Institute for Advanced Research, CIFAR). 2024

Travel grant to assist to the RIKEN Center for Brain Science Summer School (Tokyo, Japan) **2023**

EMBO travel grant to assist to the Barcelona Summer School for Advanced Modeling of Behavior (Centre de Recerca Matemàtica – Barcelona, Spain). **2022**

Research experience

AS GRADUATE STUDENT

Three months research internship at the Laboratory for Imagination and Executive Functions lead by Dr. Kentaro Miyamoto (*RIKEN Center for Brain Science* – Hirosawa, Wako, Saitama 351-0106, Japan). **2024**

Two months research internship at the Laboratory for Imagination and Executive Functions lead by Dr. Kentaro Miyamoto as part of the *RIKEN Center for Brain Science Summer School Program* (Hirosawa, Wako, Saitama 351-0106, Japan). **2022**

Ph.D. student in Neurosciences at the Psychological Research Institute (National Scientific and Technical Research Council – National University of Córdoba, Argentina). **2021-present**

AS UNDERGRADUATE STUDENT

Undergraduate research assistant as part of the *Stimuli to Scientific Vocations scholarship* from the National Interuniversity Council (Argentina). Project: *Effects of pre and/or postnatal ethanol exposure on the modulation of the opioid system in neonatal rats*. **2020-2021**

Thesis in Psychology (Psychological Research Institute, UNC-CONICET). Title: *Confidence in perceptual decisions with multiple alternatives*. Qualification: 10/10. Supervisor: Dr. Pablo Barttfeld. Co-supervisor: Dr. Guillermo Solovey. **2020**

Undergraduate research assistant. Project: *Neuroprotection facilitated by Omega 3 in two cognitive impairment models*. Psychological Research Institute (UNC-CONICET, Argentina). **2019**

Presentations

ORAL COMMUNICATIONS & TALKS

Bayesian approach to perceptual decision making and confidence (**Comay, N.A.**; Solovey, G.; Barttfeld, P.). Bayesian Plurinational Congress. **2023**

Computational modeling of behavior (**Comay, N.A.**; Solovey, G.; Barttfeld, P.). V International Psychology Congress and VIII National Psychology Congress “Science and Profession” (UNC, Argentina). **2023**

Deviations from Bayesian optimality in the evaluation of perceptual decisions (**Comay, N.A.**; Della Bella, G.; Lamberti, P.; Sigman, M.; Solovey, G.; Barttfeld, P.). The future of decision-making sciences conference (Center of Rationality, Action and Decision - Economics School – University of Buenos Aires). **2022**

Implausible alternatives paradoxically increase confidence in a perceptual decision. (**Comay, N.A.**; Della Bella, G.; Lamberti, P.; Sigman, M.; Solovey, G.; Barttfeld, P.). XXXVI Annual Meeting of the Argentinian Society for Neuroscience Research. **2021**

WORKSHOPS & SYMPOSIUMS

Thinking how we think: actual controversies in metacognition and experiment designs. (Embon, I.⁺; Lillo, M.⁺; **Comay, N.A.**⁺; Aguirre, J.⁺). II International Meeting “Frontiers in Neurosciences” (Universidad Nacional Autónoma de México, UNAM). ⁺equal contribution. **2023**

Reflecting upon our own thoughts: recent studies on metacognition in vigilance, personality and decision making (**Comay, N.A.**⁺; Aguirre, J.; Embon, I.; Gerbaudo, M.A.; Lillo, M.). XIX National Meeting and VIII International Meeting of the Argentinean Association for Behavioral Sciences.⁺symposium coordinator **2023**

POSTER PRESENTATIONS

Bayesian-like computations explain human confidence in values and decisions during learning (**Comay, N.A.**, Solovey, G.; Barttfeld, P.). 2025 Multi-disciplinary Conference on Reinforcement Learning and Decision Making. Trinity College Dublin, Ireland. **2025**

Computational modeling of uncertainty in reinforcement learning (**Comay, N.A.**, Solovey, G.; Barttfeld, P.). I Congreso Argentino de Ciencias Cognitivas. Universidad Torcuato Di Tella, Buenos Aires. **2024**

Implausible alternatives paradoxically increase confidence in a perceptual decision. (Comay, N.A.; Della Bella, G.; Lamberti, P.; Sigman, M.; Solovey, G.; Barttfeld, P.) Computational Cognition Workshop (Osnabrück, Germany). **2021**

Effect of subliminal feedback on metacognition in a visual perception task. (Zapata, J.M.⁺; **Comay, N.A.**⁺; Della Bella, G.⁺). XXXV Annual Meeting of the Argentinian Society for Neuroscience Research. ⁺equal contribution. **2020**

Deterioration of grid cells and loss of spatial orientation in Alzheimer's Disease (Cabrera, V.⁺; **Comay, N.A.**⁺; Maza, P.⁺; Vietéz Salvá, E.⁺; Macchione, A.F.⁺). V International Psychology Congress and VII National Psychology Congress "Science and Profession". ⁺equal contribution. **2020**

Teaching experience

Teaching assistant of the postgraduate course *A practical introduction to cognitive science* (National University of Córdoba, Argentina). **2023**

Teaching assistant of the research practice *Tools for data analysis in cognitive neuroscience* (National University of Córdoba, Argentina). **2023**

Student assistant of the subject *Neurophysiology and Psychophysiology* (National University of Córdoba, Argentina). **2020-2022**

Student assistant of the subject *Experimental Psychobiology* (National University of Córdoba, Argentina). **2019-2021**

Human resources training

STUDENTS SUPERVISED FOR THE PSYCHOLOGY DEGREE

Elias Franco Parras (UNC, Argentina). **2025-2026**

Juan Taravella & Lucia Molina (UNC, Argentina). **2024-2025**

Gaspar Taricco (UNC, Argentina). *Co-supervision*. **2024-2025**

Bautista Squire (UNC, Argentina). *Co-supervision*. **2024-2025**

Agostina Presuttari & Camila Abud (UNC, Argentina). **2024-2025**

Vera Candusso & Julieta Irazuzta (UNC, Argentina). **2024-2025**

Benjamin Sanchez (UNC, Argentina). *Co-supervision*. **2023-2024**

Camila Inés Amado (UNC, Argentina). **2023-2024**

Candelaria Nicolas & Florencia Ledesma (UNC, Argentina). *Co-supervision*. **2023-2024**

Experience as reviewer and advisor

PEER REVIEW FOR JOURNALS

Nature communications; Nature Machine Intelligence; NeuroImage: Reports; Scientific Reports; npj Artificial Intelligence; Frontiers in Psychology

UNDERGRADUATE THESES EVALUATED

Five theses evaluated for the Degree in Psychology at the National University of Córdoba.

Administrative positions

Member of the ethics committee for the Use and Care of Laboratory Animals at the Psychological Research Institute (UNC-CONICET) **2022-present**

Skills

Programming (R, MATLAB)

Computational modelling

Advanced statistics.

Data analysis and visualisation.

fMRI: FSL (FMRIB Software Library) & fMRIPrep.

EEG: EEGLAB.

Selected summerschools & courses

Neuroscience of Consciousness Winter School (Canadian Institute for Advanced Research) **2024**

RIKEN Center for Brain Science Summer School (RIKEN CBS, Japan) **2023**

Barcelona Summer School for Advanced Modeling of Behavior (Centre de Recerca Matemàtica, Spain) **2022**

Statistics applied to health sciences (UNC, Argentina) **2022**

First Annual Summer School on Consciousness and Metacognition (University College London & Paris Sciences et Letters) **2021**

Computational Neuroscience (UNSAM, Argentina) **2021**

Python programming (UNSAM, Argentina) **2021**

Decision making (UBA, Argentina) **2020**

Behavioral economics (UBA, Argentina) **2020**

References

Pablo Barttfeld, PhD

Independent Researcher at CONICET
Psychological Research Institute (UNC-CONICET), Argentina
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Guillermo Solovey, PhD

Independent Researcher at CONICET
Universidad Torcuato Di Tella (UTDT), Argentina
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