# Basile Garcia

Postdoctoral fellow

basilegarcia@gmail.com | bsgarcia.github.io | bsgarcia


## Academia

### Postdoctoral fellow
*Geneva, Switzerland*

University of Geneva (UNIGE$^2$) - with **Daphne Bavelier** *since 2023*

Perceptual and value-based decision-making (DM) are ubiquitous in real-life decisions. Perceptual DM involves collecting evidence on stimuli based on perceptual dimensions and then making a decision. Value-based DM involves associating subjective values to stimuli, through a trial-and-error learning process, to ultimately select the most rewarding. Arguably, most decisions involve a tradeoff between these two processes. Yet, these two areas of behavioral research have been investigated independently. Therefore, much work needs to still be done in order to fully characterize decision processes as they might occur outside of the lab. Hence, this project will aim to (1) study decision-making processes in a gamified task that requires both dimensions for optimal DM; (2) develop a computational framework that captures behaviors through various weightings of perceptual and value signals; and (3) use MagnetoEncephalography (MEG) in order to study the neural chronometry of the perceptual-value integration during DM.

### Postdoctoral fellow
*Paris, France*

École Normale supérieure (LNC$^2$) - with **Stefano Palminteri** *2022-2023*

Foundational models such as large language models (LLMs) are increasingly adopted in morally-complex decision-making scenarios, such as those faced by autonomous vehicles medical devices, or even psychotherapy . To better understand human and LLMs' moral alignment, we conducted three behavioral user studies where participants (N=230) evaluated justifications for decisions generated by humans (N=30) and LLMs (GPT-3.5). Participants' detection of provenance was low-to-moderate (60-70%), and agreement with justifications did not significantly differ between human- and LLM-generated responses. LLM-generated justifications were favored in morally conflicting dilemmas, but a systematic anti-AI bias exists: participants were less likely to agree with judgments they believed were machine-generated. These findings are supplemented with a linguistic analysis of text features as predictors of provenance identification and agreement. The present paper was submitted to ACM (Association of Computing Machinery) for the CHI conference on Human Factors in Computing Systems 2025.

### Ph.D in Cognitive Science
*Paris, France*

École Normale supérieure (LNC$^2$ - IJN) - with **Stefano Palminteri** and **Sacha Bourgeois-Gironde** *2018-2022*

My Ph.D thesis consists in the study of human reinforcement learning through behavioral experiments and computational modeling. More specifically, I am interested in the acquisition and comparison of different kind of subjective values, namely these acquired from experience (via trial-and-error) and description (via symbolic/semantic information). The two-step model of value based decision-making posits that orderly choice is possible through the mapping of different option values on a common scale. A subsequent question is thus whether these values of different nature are commensurable, and if so, what is the decision and valuation process allowing such a comparison.

### M.Sc in Cognitive science
*Bordeaux, France*

Université de Bordeaux *2016 - 2018*

### B.Sc in Psychology
*Bordeaux, France*

Université de Bordeaux *2013 - 2016*

## Teaching

### Université Paris Cité
*Paris, France*

B.Sc - first year *September 2022 - December 2022*

Introduction to Experimental Psychology (25h)

### Ecole Normale Supérieure
*Paris, France*

Cogmaster *October 2022*

Introduction to Reinforcement learning (4h)

### Paris School Of Economics
*Paris, France*

Economics and Psychology M.Sc *January 2022*

Cognition and Economic Behavior: The Description-Experience Gap (2h)

## Mentoring

### Master students
*Paris, France*

Paris School of Economics - Ecole Normale Supérieure *September 2021 - July 2022*

Supervised the conception of experimental design, data collection, analyses and thesis writing.

- Fernanda Senko, *Forced disclosure of private information hinders cooperation*
- Theresa Pachmann, *Voluntary disclosure of private information and sorting to promote a sustainable health system*

## Communications

### Conference posters

| | | |
|---|---|---|
| 2022 | Federation of European Neuroscience Societies Forum | *Paris, France* |
| 2021 | Subjective Probability, Utility and Decision Making | *Online* |
| 2021 | Neurofrance | *Online* |
| 2019 | Fourth Quadrennial Meeting on OFC Function | *Paris, France* |
| 2019 | Symposium on Biology of Decision-Making | *Oxford, UK* |

### Outreach activities

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|---|---|---|
| 2021 | Declics meetings, that consist in introducing high school students to academia (Lycée Jacques Decour) | *Paris, France* |
| 2019 | Cog'Innov & Monocyte Edition collaboration, *Bavard S, *Garcia B. Les illusions économiques. | *Paris, France* |
| 2018 | Organization of the Mindlab association's hackaton. | *Bordeaux, France* |

## Skills

**Programming** Python, Matlab, R, C#, Javascript, HTML, CSS, LaTeX
**Frameworks** Django (web apps), oTree (online experiments), Unity3d (game engine), Flutter (android apps)
**Languages** French (native speaker), English (C1), Spanish (B2)
**Interests** Guitar/Music production, Climbing, Philosophy, Social Science, Game Dev/Web Dev

## Papers

### Published

2023 **Experiential values are underweighted in decisions involving symbolic options,** **Garcia, B.**, Lebreton, M., Bourgeois-Gironde, S., Palminteri, S. Nature Human Behaviour

2021 **The description–experience gap: a challenge for the neuroeconomics of decision-making under uncertainty,** **Garcia, B.**, Cerrotti, F., Palminteri, S., Philosophical Transactions of the Royal Society B

2019 **Coordination over a unique medium of exchange under information scarcity,** Nioche, A.*, **Garcia, B.***, Lefebvre, G., Boraud, T., Rougier, N. P., Bourgeois-Gironde, S., Humanities and Social Sciences Communications - Nature

2019 **Interaction effects between consumer information and firms' decision rules in a duopoly: how cognitive features can impact market dynamics,** Nioche, A.*, **Garcia, B.***, Boraud, T., Rougier, N. P., Bourgeois-Gironde, S., Humanities and Social Sciences Communications - Nature

### Submitted

2024 **The Moral Turing Test: Evaluating Human-LLM Alignment in Moral Decision-Making,** **Garcia, B.**, Qian C., Palminteri, S. CHI conference on Human Factors in Computing Systems

### In prep.

2023 **Shared values and norms drive collaboration in joint donation decisions,** Wanek E., **Garcia B.**, Bourgeois-Gironde S.

2023 **Crossing the description-experience gap,** **Garcia, B.**, Lebreton, M., Palminteri S.

2023 **A pure preference for social transparency,** **Garcia, B.**,Pachmann T., Bourgeois-Gironde S.