

# Julien Lie-Panis

POST-DOCTORAL RESEARCHER · DYNAMICS OF SOCIAL BEHAVIOR GROUP

Max Planck Institute for Evolutionary Biology, Plön, Germany

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I work at the interface between game theory and social psychology. I often use insights from social psychology to design more realistic mathematical models, and sometimes test the predictions of these models in the lab. In particular, I take a cognitive approach to reputation and cooperation: What information do we need to infer that a partner is trustworthy? Based on what model of the social world can we make this inference? Under what conditions will people evolve to cooperate according to our model of the social world?

I have developed collaborations with scientists from across the social sciences. Based on these collaborations, I try to better understand our cultural variability, and our ability to function in large collectives.

## Academic experience

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- 2023- **Post-doc at the Max Planck Institute for Evolutionary Biology**, advised by Christian Hilbe  
*The evolution of welfare trade-off ratios. Bayesian Games, Cooperation, Social Cognition.*
- 2019-2023 **PhD at École normale supérieure & Telecom Paris**, advised by Jean-Baptiste André & Jean-Louis Dessalles  
Dissertation: *Models of reputation-based cooperation. Bridging the gap between reciprocity and signaling.*  
Honest Signaling, Evolutionary Game Theory, Experimental Psychology, Cooperation, Institutions, Revenge.
- 2023 **Visiting PhD at Harvard, Department of Psychology**, invited by Bethany Burum (1 month)
- 2022 **Visiting PhD at the Max Planck Institute for Evolutionary Biology**, invited by Moshe Hoffman (1 month)
- 2018-2019 **Intern at Telecom Paris**, Agent-Based Modeling, advised by Jean-Louis Dessalles
- 2013-2014 **Research Assistant at Johns Hopkins University**, Macroeconomics, advised by Filippo Taddei

## Education

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- 2019-2023 **PhD in Cognitives Sciences**, Université Paris Cité
- 2018-2019 **Masters in Cognitive Sciences**, École normale supérieure, Paris  
Modeling Track. Selected coursework: Introduction to Evolutionary Anthropology; Social Cognition; Decision Sciences; Memory from an Interdisciplinary Perspective.
- 2013-2015 **Masters in International Relations**, Johns Hopkins University, Bologna & Washington D.C.  
Middle East Studies. Selected coursework: Arabic (C1); Behavioral Sociology of Conflict; Nations, States and Nationalism; Narratives of the Israel-Palestine Conflict; Political Development of North Africa; States and Societies of the Middle East and North Africa; Europe and Islam; Intellectuals and Politics; European Financial Markets.
- 2010-2013 **Masters in Mathematics and Economics**, École polytechnique, Palaiseau, France  
2012-2013: Economics Research Speciality. Selected coursework: Game Theory; Econometrics; Decision Theory.  
2010-2012: Generalist Scientific Curriculum. Selected coursework: Quantum Mechanics; Real and Complex Analysis; Distribution Theory, Fourier Analysis; Micro and Macroeconomics; Arabic; Basketball.
- 2007-2010 **Undergraduate program in Mathematics & Physics**, Classe préparatoire du Lycée Charlemagne, Paris

## Publications

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- Lie-Panis, J. & André, J.-B. (2024).** Peace is a form of cooperation, and so are the cultural technologies which make peace possible. *Behavioral and Brain Sciences* [Commentary on Glowacki].
- Lie-Panis, J. & Dessalles, J.-L. (2023).** Runaway signals: Exaggerated displays of commitment may result from second-order signaling. *Journal of Theoretical Biology*.
- Lie-Panis, J. & André, J.-B. (2022).** Cooperation as a signal of time preferences. *Proceedings of the Royal Society B*.

**Lie-Panis, J.,** Fitouchi, L., Baumard, N. & André, J.-B. (in prep.) The social leverage effect: Institutions transform weak reputation effects into strong incentives for cooperation.

**Lie-Panis, J.,** Burum, B., Hilbe, C. & Hoffman, M. (in prep.) The repeated punishment game explains why, and when, we seek revenge.

## Fellowships and Grants

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2019	<b>PhD Fellowship</b> , EURIP Graduate School for Interdisciplinary Research (accepted)	
	Three years of funding for an interdisciplinary PhD. 2 fellowships awarded, over 50 candidates.	
2019	<b>PhD Fellowship</b> , Telecom Paris, btw. Social & Computer science departments (declined)	
2015	<b>Language Study Grant</b> , Rotschild Foundation	1 000 €
2014	<b>Masters Scholarship</b> , Johns Hopkins University	10 000 \$
2013	<b>Masters Scholarship</b> , Johns Hopkins University	11 800 €

## Selected Presentations

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### INVITED TALK

2023, Max Planck Institute for Evolutionary Biology. *Making the most of reputation.*

### SELECTED CONFERENCES

2024, International Conference on Social Dilemmas, Netherlands. Talk: *The repeated punishment game explains why, and when, we seek revenge.*

2024, Human Behavior and Evolution Society, Denmark. Short talk: *The social leverage effect: Institutions transform weak reputation effects into strong incentives for cooperation.*

2023, Evolution and Human Behaviour European Association, United Kingdom. Talk: *The repeated punishment game explains why, and when, we seek revenge.*

2022, French Society for Evolutionary Human Sciences, France. Short talk: *Reputation can generate large-scale institutions.*

2021, Evolution and Human Behaviour European Association, online. Talk: *Cooperation as a signal of time preferences.*

## Teaching

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**Lecturer: Game Theory and Social Psychology.** Created and taught a class on using Game Theory to understand the seemingly quirky features of human psychology. For the final year of the Sciences for a Sustainable World Undergraduate Program at PSL University (30 hours, 2022-2023).

**Co-lecturer: Statistics.** Taught four semesters of an empirical and question-driven approach to Statistics, with Valentin Thouzeau, for the same program at PSL University (96 hours, 2021-2023).

**Co-lecturer: Programming.** Taught four week-long workshops, based on Axelrod's cooperation tournament and a simulation of French energy prices, with Valentin Thouzeau, for the same program at PSL University (80 hours, 2021-2023).

**Co-lecturer: Emergence in Complex Systems.** Intervened during an international Masters level exchange program (ATHENS) at Telecom Paris, on using Evolutionary Game Theory to study altruism (c. 12 hours, 2021-2023).

**Teaching assistant** (2019-2022): Introduction to Evolutionary Anthropology (38 hours, Masters level, ENS Paris); Mathematics (c. 15 hours, Masters level, Telecom Paris); Three Computer Science classes (c. 50 hours, Masters level, Telecom Paris).

## Other professional experience

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2017-2018 **High School Teacher in Mathematics**, Lycée Colbert (4 months)

2016-2017 **Analyst for the Public Sector**, BearingPoint France (4 months)

2010-2013 **Internships**

Apr.-Jul. 2013: European Commission, DG ECFIN. Economic analysis, policy notes.

Jul.-Aug. 2012: D.R. Congo Savings and Credit Cooperative (MECRECO). Microfinance.

Jan.-May 2011: French Military Intelligence Agency (DRM).

## Miscellaneous

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### MENTORING

2 Masters students (2024), 1 Undergraduate (2021)

### SERVICE

**Organized a symposium** on Evolution, Reputation, and Human Social Behavior at ENS Paris (2023). Speakers: P. Barclay, M. Boon-Falleur, F. Giardini, M. Karabegović, E. A. Power.

**Volunteered at the conference** of the French Society for Evolutionary Human Sciences at ENS Paris (2023), along with two other students, and the organizer, Valentin Thouzeau.

### PROFESSIONAL DEVELOPMENT

**Probabilistic Models of Cognition**, on my own, using the online book developed by N. Goodman and J. Tenenbaum (ongoing).

**Quantitative Social Sciences** Summer School at the Institute for Advanced Study of Toulouse (2022)

**Intensive Language Summer Programs** in Hebrew (Ulpan Dalet, Tel Aviv University, 2015) and in Modern Standard Arabic and Levantine Dialect (French Institute for the Near East, Beirut, 2014)

### LANGUAGES

I am bilingual in English and French, and out of practice, but formerly B2-C1 in Arabic, Levantine, Hebrew and Italian

### VOLUNTEERING

I have volunteered for many associations, including: *Bureau d'Accueil et d'Accompagnement des Migrants* (French language classes for asylum seekers, 2016-2018); *SAIS Francophone Association* (as president, 2014-2015); *X Microfinance* (in charge of communication, 2012; mission in Guatemala, 2011); *Polytechnique Student Bureau* (numerous campus-wide events, 2012); *Polytechnique Student Weekly Association* (which I created and presided); *Polytechnique Oenology Club*. I was awarded an 'Outstanding Investment' mention by École polytechnique.