

# Paul B. Sharp

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## Employment

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### Yale University

POSTDOCTORAL FELLOW

August 2023-Current

### Hebrew University of Jerusalem

FULBRIGHT POSTDOCTORAL SCHOLAR

2021-March 2023

### Max Planck UCL Centre for Computational Psychiatry and Ageing Research

POSTDOCTORAL FELLOW

2019-2021

## Education

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## Awards, Fellowships, & Grants

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2022-	<b>eLife Early-Career Reviewer</b> , eLife	
2021-2023	<b>Fulbright Postdoctoral Fellowship</b> , Fulbright Foundation	\$ 95,000
2015-2016	<b>Teaching Excellence</b> , UIUC	
2015	<b>Departmental Grant</b> , University of Illinois at Urbana-Champaign	\$ 6,000
2015	<b>NIMH fMRI Training</b> , University of Michigan	
2014	<b>Kanfer Fellowship</b> , University of Illinois at Urbana-Champaign	\$ 8,000
2008	<b>American Mathematics Competition Honor Roll</b> , MAA	

## Publications

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**Sharp, PB**, Eldar, E. Humans adaptively deploy forward and backward prediction. *Nature Human Behaviour*. (In Press)

Solomyak, L, **Sharp PB**, Eldar E. Training diversity promotes absolute-value-guided choice. (2022). *PLOS Computational Biology*.

**Sharp PB**, Fradkin I, Eldar E. Hierarchical inference as a source of human biases. (2022). *Cognitive Affective and Behavioral Neuroscience*.

**Sharp PB**, Russek, E., Huys, Q., Dolan RJ, Eldar E. Humans persevere on punishment avoidance goals in multigoal reinforcement learning. (2022). *eLife*.

**Sharp PB**, Dolan RJ, Eldar E. Disrupted state transition learning as a computational marker of compulsivity. (2021). *Psychological Medicine*.

**Sharp PB**, Do KT, Lindquist KA, Prinstein MJ, Telzer EH. Cognitive control deployment is flexibly modulated by social value in early adolescence. (2021). *Developmental Science*.

Thomas, J.G., **Sharp PB**, Niznikiewicz M, Heller W. Beyond the Placebo: A Double-Blind Randomized Control Trial of Expectation as a Mechanism of Therapeutic Change. (2021).

**Sharp PB**, Miller, GA, Dolan RJ, Eldar E. Towards formal models of psychopathological traits that explain symptom trajectories. (2020). *BMC Medicine*.

Do KT\*, **Sharp PB\***, Telzer EH (2020). Modernizing conceptions of valuation and cognitive control deployment in adolescent risk taking. *Current Directions in Psychological Science*.

**Sharp PB**, Eldar E. Computational models of anxiety: Nascent efforts and future directions. (2019). *Current Directions in Psychological Science*.

Thomas JG, **Sharp PB**. Mechanistic science: A new approach to comprehensive psychopathology research that relates psychological and biological phenomena. (2019). *Clinical Psychological Science*.

**Sharp PB**, Miller, GA. Reduction and autonomy in psychology and neuroscience: A call for pragmatism. (2019). *Journal of Theoretical and Philosophical Psychology*.

**Sharp PB**, Sutton BP, Paul EJ, Sherepa N, Cohen NJ, Hillman CH, Kramer AF, Prakash R, Heller W, Telzer EH, Barbey AK. (2018). Mindfulness training induces structural connectome changes in insula networks. *Scientific Reports*.

**Sharp PB**, Telzer EH. (2017). Structural connectomics of anxious arousal in early adolescence: Translating clinical and ethological findings. *NeuroImage: Clinical*.

**Sharp PB**, Heller W, Telzer EH. (2017). Selective neural sensitivity to familial threat in adolescents with weak family bonds. *Social Neuroscience*.

**Sharp PB**, Miller GA, Heller W. (2015). Transdiagnostic dimensions of anxiety: Neural mechanisms, executive functions, and new directions. *International Journal of Psychophysiology*.

## IN PREP

**Sharp, PB**, Eldar, E. Humans gradually learn to optimally delay planning.

Bedder, R, Hitchcock PF, **Sharp, PB**. Computations of Negative Repetitive Thinking.

**Sharp, PB**, Flannery, JS, Do, KT, Telzer, EH. Effects of social media deprivation on computations of mood.

## Presentations \_\_\_\_\_

### CONFERENCE WORKSHOPS

Co-Chair. *Repetitive Negative Thinking and Simulation in Natural and Artificial Cognition*. The 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making, Brown University, Providence, RI, June 2022.

Co-Chair. *Constructing riskier tests of theory, linking psychological and biological phenomena, and introducing a new mechanistic philosophy of science*. Society for Psychophysiological Research, Vienna, Austria, Fall 2017.

### CONFERENCE PAPERS

Sharp, PB, Eldar, E. *Predecessor representation for efficient backwards planning*. The 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making, Brown University, Providence, RI, June 2022.

Solomyak, L., Sharp, P., Eldar, E. *Training diversity promotes absolute-value-guided choice*. The 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making, Brown University, Providence, RI, June 2022.

### INVITED TALKS

August 2022. *Understanding worry using planning algorithms*. Laboratory of Neural Computation and Cognition (Michael J. Frank Lab), Brown University, RI

June 2022. *Using a science of planning to understand the dynamics of worry*. The 5th Multidisciplinary Conference on Reinforcement Learning and Decision Making

February 2022. *Efficient planning algorithms humans use to pursue multiple goals*. Israeli Society for Cognitive Psychology

September 2021. *Computations of Chronic worry: Dysfunction in Multigoal Learning and Planning Efficiency*. Society for Research in Psychopathology

March 2021. *Neuroscience only leads to understanding with computation: A brief history of efforts to understand human anxiety*. Lee lab. Virginia Tech, VA.

December 2019. *How task-irrelevant emotion affects model-building: Implications for basic learning processes and psychopathology*. Tel-Aviv University. Bar-Haim lab. 2019.

October 2019. *Computations in human anxiety: New developments in a nascent field*, National Institute of Mental Health, Pine lab. Bethesda, MD.

February 2018. *Current Issues in Developmental Science: Replicability Representation*. UNC-Duke Annual Research Meeting in Developmental Psychology. Chapel Hill, NC.

March 2015. *The neuroscience of mindfulness. Teachers of Champaign*. Illinois.

## CONFERENCE PRESENTATIONS

Effects of emotional cues on state transition learning. Sharp PB, Dolan, RJ, Eldar E. Society of Biological Psychiatry. Spring, 2020.

Testing a computational model of anxious mood in adolescence. Sharp PB, Telzer EH, Eldar E. Developmental Cognitive Neuroscience. Summer, 2018.

Structural Connectomics of Affective Disturbances in Adolescence. Sharp PB, Heller W, Telzer EH Society of Biological Psychiatry. Spring, 2017.

Reduced habituation to familial threat in adolescents with low family connectedness: A Novel use of MVPA. Sharp PB, Telzer EH. Society for Affective Science. Spring, 2016.

Trait negative affect and executive function in childhood: Neural mechanisms and mindfulness. Sharp PB, Menon S, Khan F, Davis MM, Weldon A, Sutton, BP, Heller W. Society for Research in Psychopathology. Spring, 2015.

## Teaching

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2018-2019	<b>Intro to Python</b> , Lead Instructor, Telzer Lab	UNC
Spring	<b>Intro to Neuroscience</b> , Teaching Assistant	UNC
2017		
2015-2016	<b>Abnormal Psychology</b> , Lead Instructor	UIUC

## Mentoring

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2021-	<b>Noa Peled</b> , Psychology Undergraduate, Hebrew University of Jerusalem
2021-	<b>Aviad Aharon</b> , Computer Science Undergraduate, Hebrew University of Jerusalem
2021-2022	<b>Lena Gorina</b> , PhD Research, Hebrew University of Jerusalem
2018-2019	<b>Sinclair Scales</b> , Psychology Undergraduate Thesis, UNC at Chapel Hill
2017	<b>Charles Wright</b> , Psychology Undergraduate, UNC at Chapel Hill

## SERVICE AND OUTREACH

Cientifico Latino GSMI Mentor, 2021, UNC Science Expo Organizer and Educator, 2018.

## AD HOC REVIEWER

Nature Communications, PLOS Computational Biology, Journal of Neuroscience, Neuroscience and Biobehavioral Reviews, Biological Psychiatry: Cognitive Neuroscience and Neuroimaging, Behavior Research and Therapy, Developmental Science, Clinical Psychology Review, Cognitive Affective and Behavioral Neuroscience, Brain Stimulation

## PROFESSIONAL MEMBERSHIPS

Reinforcement Learning and Decision Making, Cognitive Computational Neuroscience, Society of Biological Psychiatry, Society for Research in Psychopathology