Haoxue Fan

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EDUCATION & PROFESSIONAL EXPERIENCE

Brown University, Providence, RI, USA — Sept 2024 - Present
Postdoctoral Researcher
Advisor: Dr. Matthew Nassar

Harvard University, Cambridge, MA, USA — June 2024 - Aug 2024
Postdoctoral Researcher (Transitional Position)
Advisor: Dr. Samuel Gershman

Harvard University, Cambridge, MA, USA — 2024
Ph.D., Psychology
Secondary Field in Computational Science and Engineering — 2023
M.A. Psychology — 2022
Advisor: Dr. Elizabeth Phelps

Peking University, Beijing, China — 2019
B.S. in Psychology (Economics minor), *graduated with honors*

RESEARCH INTERESTS

Exploration, Information-seeking, Planning, Emotion, Computational Psychiatry

PUBLICATION AND MANUSCRIPT

(Trainee authors/presenters are underlined; *: Equal Contribution; Google Scholar)

1. Beech, A., **Fan, H.**, Shu, J., Oyarzun, J., Nadel, P., Karaman, O. T., Vranos, S., Phelps, E. A., & Kredlow, M. A. (2025). Using Natural Language Processing to Identify Patterns Associated with Depression, Anxiety, and Stress Symptoms During the COVID-19 Pandemic. *Journal of Affective Disorders* pdf

2. Castillo, J*., **Fan, H*.**, Karaman, O.T., Shu, J., Stussi, Y., Kredlow, M.A., Vranos, S., Oyarzun, J.P., Dorfman, H., Sambrano, D., Merskin, R., Hirst, W., & Phelps, E. A. (2024) Overestimating negative emotion in autobiographical memory: evidence from memories for the COVID-19 pandemic and 9/11 attacks. *Cognition and Emotion* [pdf]

3. **Fan, H.**, Burke, T., Sambrano, D. C., Dial, E., Phelps, E. A., & Gershman, S. J. (2023) Pupil size encodes uncertainty during exploration. *Journal of Cognitive Neuroscience* [pdf]

4. **Fan, H.**, Gershman, S. J., & Phelps, E. A. (2023) Trait somatic anxiety is associated with reduced directed exploration and underestimation of uncertainty. *Nature Human Behavior* [pdf]

5. Kredlow, M.A*., Oyarzun, J.P*., **Fan, H.**, Meskin, R., Hirst, W. & Phelps, E.A. (2023). Language use in narratives of the 9/11 attacks predicts long-term memory. *Emotion* [pdf]

6. Hart, B., Achakulvisut, T., Adeyemi, A., Akrami, A., Alicea, B., Alonso-Andres, A., ... **Fan, H.**, ... & Wallisch, P. (2022). Neuromatch Academy: a 3-week, online summer school in computational neuroscience. *Journal of Open Source Education* pdf

7. Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Flournoy, J., Li, T., Cegarra L., Youssoufian, A., Grad-Freilich, M., Kordyban, L., Mair, P., & Somerville, L. (*submitted*) Prosocial motives differentially override default risk preferences across adolescence.

8. Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Li, T., Flournoy, J., Mair, P., Cegarra L., Youssoufian, A., Grad-Freilich, M., Kordyban, L., Mair, P., & Somerville, L. (*submitted*). Developmental emergence of complex prosocial motives and their influence on risky decision making. pdf

9. **Fan, H.**, Dong, B., Benkelman, D. G., Rodman, A. M., Dorfman, H. M., Glimcher, P. W., & Phelps, E. A. (*submitted*) Working just to know: exerting effore for non-instrumental information under risk. pdf

10. **Fan, H.**, Callaway, F., Gershman, S. J. (*submitted*) Uncertainty-driven exploration in planning. pdf

MANUSCRIPT IN PREPARATION

1. Kasparek, W. S., **Fan, H.**, Cikara, M., & McLaughlin K. (*in prep*) Altered social categorization and affective attribution processes after childhood violence exposure as novel indicators of psychopathology risk. pre-registration

2. Dorfman H. M., **Fan H.**, & Phelps E. A. (*in prep*) Individual differences in seeking and avoiding threatening information.

PROCEEDING AND PUBLISHED ABSTRACT

1. Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Li, T., Flournoy, J., Mair, P., & Somerville, L. (2024). How beliefs around peers' risk preferences get incorporated into adolescents' decision making. In *Proceedings of the 46th Cognitive Science Society* [pdf]

2. Beech, A., **Fan, H.**, Shu, J., Oyarzun, J., Nadel, P., Phelps, E. A., & Kredlow, M. A. (2024). Differential language analysis of participant narratives and depression and anxiety symptoms during the COVID-19 pandemic. In *Abstracts from the 2023 Annual Meeting of the Society for Affective Science: Emotion and Mental Health. Affective Science.* [link]

INVITED TALK

Computational Cognitive Science Journal Club, University of Maryland	May 2024
The Translational Lab (PI: Dr. Pete Hitchcock), Emory University	Mar 2024
Radulescu Lab (PI: Dr. Angela Radulescu), Mount Sinai Center of Computational Psychiatry	Dec 2023
Learning Memory & Decision Lab (PI: Dr. Matthew Nassar), Brown University	Dec 2023
MindRL Hub recording (Chinese)	Sept 2023
Social Decision Neuroscience Lab (PI: Dr. Patricia Lockwood), University of Birmingham	Sept 2023
SPAN Lab (PI: Dr. Brian Knuston), Stanford University	May 2023
Reviews Reading Group	Mar 2023
Rutledge Lab (PI: Dr. Robb Rutledge), Yale University	Mar 2023
Cognition, Brain, and Behavior Seminar, Harvard University	Feb 2023
Goldenberg Lab (PI: Amit Goldenberg), Harvard University	Feb 2023
Chinese Computational Psychiatry Association	Oct 2022
Otto Lab (PI: Dr. Ross Otto), McGill University	Oct 2021
Computational Psychiatry Journal Club, Max Planck Institute for Biological Cybernetics	Oct 2021

CONFERENCE TALK

Beech, A., **Fan, H.**, Shu, J., Oyarzun, J., Nadel, P., Phelps, E. A., & Kredlow, M. A. (Nov, 2023). Differential language analysis of participant narratives and depression and anxiety symptoms during the COVID-19 pandemic. Symposium talk presented as part of "When is it Helpful to Revisit the Anxious Past? The Relevance of Symptom-Related Autobiographical Memories in Anxiety and Related Disorders" at *the 57th annual convention of the Association for Behavioral and Cognitive Therapies (Seattle, WA)*

Fan, H.*, Castillo, J.*, Karaman, O. T., Shu, J., Stussi, Y., Kredlow, M. A., Vranos, S., Oyarzun, J. P., Dorfman, H., Sambrano, D., & Phelps, E. A. (Nov, 2022). Overestimating stress experienced early during the pandemic is associated with decreased emotional well-being. Symposium talk presented as part of "Exploring Relationships Between Various Cognitive Mechanisms and COVID-19 Emotional Distress" at *the 56th annual convention of the Association for Behavioral and Cognitive Therapies (New York, NY)*

Kredlow, M. A., Oyarzun, J. P., **Fan, H.**, Meskin, R., Hirst, W. & Phelps, E. A. (November, 2021). Do linguistic features of trauma narratives predict trauma-related emotions and memory over time? Symposium talk presented as part of "Making sense of trauma memories: Characteristics and responses to trauma narratives as predictors of PTSD outcomes" at *the 37th annual conference of the International Society for Traumatic Stress Studies (virtual)*

Fan, H., Gershman S.J., & Phelps E.A. (September, 2021). Trait somatic anxiety is associated with reduced directed exploration and underestimation of uncertainty. *Society for Neuroeconomics Annual Meeting (virtual)*. **silver best talk award**

CONFERENCE POSTER	**Fan, H.**, Xia, A., FeldmanHall, O., & Nassar, M. (April 2025). Resolving uncertainty fosters tie formation in real-world social networks. *Social and Affective Neuroscience Society Annual Meeting, Chicago, IL*

Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Li, T., Flournoy, J., Mair, P., & Somerville, L. (July 2024). How beliefs around peers' risk preferences get incorporated into adolescents' decision making. *Cognitive Science Society, Rotterdam, Amsterdam*

Fan, H., Dong, B., Benkelman, D. G., Rodman, A., Dorfman, H. M., Glimcher, P., & Phelps, E. A. (Oct 2023). Bidding with Effort: Using Grip Force to Assess the Value of Information. *Society of Neuroeconomics Annual Meeting, Vancouver, Canada*

Fan, H., Gershman S. J., & Phelps E. A. (June, 2022). Trait somatic anxiety is associated with reduced directed exploration and underestimation of uncertainty. *20th Summer Institute on Bounded Rationality, Berlin, Germany*

Castillo, J.*, **Fan, H.***, Karaman, O. T., Shu, J., Stussi, Y., Kredlow, M. A., Vranos, S., Oyarzun, J. P., Dorfman, H., Sambrano, D., & Phelps, E. A. (May, 2022). Over-estimating stress experienced early during the pandemic is associated with decreased emotional well-being. *Social and Affective Neuroscience Society Annual Meeting (virtual)*

Aslarus I., Kredlow, M.A., **Fan H.**, &Phelps, E.A. (May, 2022). Novelty Exposure Interferes with Visual Emotional Memory Consolidation. *Social and Affective Neuroscience Society Annual Meeting (virtual)*

Fan, H., Gershman S. J., & Phelps E. A. (Apr, 2021). Distinct Effects of Trait Anxiety Components on Exploration *Wisconsin Symposium on Emotion (virtual)*

Heffner, J., Son, J., **Fan, H.**, & FeldmanHall, O. (May, 2019). The Joy of Punishment: Early Emotional Reactions Predict Decisions to Restore Justice. *Social and Affective Neuroscience Society Annual Meeting, Miami Beach, Florida*

HONORS AND AWARDS	Derek Bok Center Teaching Certificate, Harvard University	2024
	Restricted Fund, Department of Psychology, Harvard University	2023, 2024
	Stimson Fund, Department of Psychology, Harvard University	2023
	Certificate of Student Recognition of Teaching, Harvard University	2022
	Certificate of Distinction in Teaching, Harvard University	2022
	GSAS Professional Development Fund, Harvard University	2022
	Silver Best Talk Award, Society for Neuroeconomics Annual Meeting	2021
	Outstanding Graduate Award, Beijing Municipal Education Commission	2019
	College Student Research Program, Beijing Municipal Education Commission	2017
	National Scholarship, Ministry of Education of China	2017, 2018
	Pacemaker to Merit Student, Peking University	2017, 2018
	Xinhe Scholarship, Peking University	2016

RESEARCH TRAINING	**Complexity-GAINs(UK) International Summer School**(Aug, 2023), *Cambridge,*

UK
Summer Institute on Bounded Rationality(June, 2022), *Berlin, Germany*

TEACHING EXPERIENCE	**Instructor**: Let me google it: Information seeking (avoidance) in everyday life, January 2021 (a five-lecture introductory psychology course) **Guest Speaker**: PSYC 417: Data Science for Psychology and Neuroscience Majors, Department of Psychology, University of Maryland, Spring & Fall 2023 **Teaching Assistant**:

- PSY 1322: Decisions Big and Small: The Cognitive Science of Making Up Your Mind (Instructor: Dr. Tomer Ullman), Spring 2023

- PSY 1901: Methods of Behavioral Research (Instructor: Dr. Mina Cikara), Fall 2022

- PSY 1401: Computational Cognitive Neuroscience: Building Models of the Brain (Instructor: Dr. Samuel J. Gershman), Spring 2022

- AM 207: Stochastic Methods for Data Analysis, Inference and Optimization (Instructor: Dr. Weiwei Pan), Fall 2021

- online R workshop on Fundamentals of Tidyverse (Instructors: Drs. Kelly Bodwin & Hunter Glanz), Jan 2021

AD HOC REVIEW	(*: co-review with mentor) **Conference proceeding and abstract**: CCN, Cogsci, SAS, RLDM **Journal**: Cognitive Affective, & Behavioral Neuroscience, Communications Psychology, eLife, Emotion, Frontiers in Behavioral Neuroscience, Journal of Open Source Software, Nature Communication*, Neuroscience and Biobehavioral Reviews
SERVICE AND VOLUNTEER	**Mentoring Co-chair**, *Harvard Graduate Women in Science and Engineering*, 2022 - 2024 **Event Coordinator**, *Harvard Women in Psychology*, 2021 - 2023 **Graduate Student Interview Day Committee and Orientation Panelist**, *Harvard University Department of Psychology*, 2022 **PPREP Mentor and Identity and Empowering Panelist**, *Harvard Prospective PhD and RA Event in Psychology*, 2020-2023 **International Community Conversation Facilitator**, *Harvard GSAS orientation*, Aug 2020 **Student Salon Host**, Theme: Studying emotion in decision-making. co-hosted with Dr. Ian Robert. *Society for Neuroeconomics Annual Meeting 2021 (virtual)*, 2021 **Video Caption Editor**, *Neuromatch Academy 2020*, Aug 2020
MENTORSHIP EXPERIENCE	Founding member of the Mentoring Group in Department of Psychology [Mentoring Resources for Trainees] Certificate in Mentoring Undergraduates in Science, *Harvard University*, Apr 2022 Currently Mentored Undergraduates/Post-Bacs: Ellie Jeong (2024-present) Previously Mentored Undergraduates: Bryan Dong (2023-2024), Emily Dial (2022-2024), Dorothy Grace Benkelman (2023), Rachel Mehler (2023), Ecem Sena Uluegeci (2022-2023), Isabella Caterina Aslarus (2020-2021; Current: Graduate Student, Stanford University)
TECHNICAL SKILLS	R, Python, MATLAB, Javascript, Qualtrics, Git, LaTeX

REFERENCES   Elizabeth Phelps
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Paul Glimcher
Julius Silver Professor of Neural Science, New York University
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