

## 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. 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]
  2. **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]
  3. **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]
  4. 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]
  5. 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
  6. Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Flournoy, J., Li, T., Cegarra L., Yousoufian, A., Grad-Freilich, M., Kordyban, L., Mair, P., & Somerville, L. (*submitted*) Prosocial motives differentially override default risk preferences across adolescence.
  7. Chen, Y.Y., Rosenbaum, G., **Fan, H.**, Li, T., Flournoy, J., Mair, P., Cegarra L., Yousoufian, 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
  8. **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 effort for non-instrumental information under risk. pdf

9. Beech, A., **Fan, H.**, Shu, J., Oyarzun, J., Nadel, P., Phelps, E. A., & Kredlow, M. A. (*submitted*). Depression, Anxiety, and Stress During the COVID-19 Pandemic: A Natural Language Processing Approach.
10. **Fan, H.**, Callaway, F., Gershman, S. J. (*submitted*) Uncertainty-driven exploration in planning. pdf

## MANUSCRIPT IN PREPARATION

1. Kasperek, 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

|  |           |
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| 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

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, 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, L<sup>A</sup>T<sub>E</sub>X

## REFERENCES

Elizabeth Phelps

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