

# Tobias Gerstenberg

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## Professional experience and affiliations

Sep 2018 - present	<b>Assistant Professor in Cognitive Psychology</b> PI of the <a href="#">Causality in Cognition Lab</a> (CICL)	Stanford, USA
Apr 2014 - Jul 2018	<b>Postdoctoral Associate</b> PI: Prof. Joshua Tenenbaum	MIT, USA
Apr 2013 - Apr 2014	<b>Postdoctoral Fellow</b> PI: Prof. Joshua Tenenbaum	MIT, USA

## Education

Aug 2009 - Feb 2013	<b>PhD Candidate</b> Supervisors: Dr. David Lagnado & Prof. Nick Chater	University College London, England
Oct 2008 - Aug 2009	<b>Course Attendance</b> Psychology, Computer Science, Philosophy and Theology	Humboldt University, Berlin, Germany
Sep 2007 - Sep 2008	<b>MSc Cognitive and Decision Sciences</b> Supervisor: Dr. David Lagnado	University College London, England
Sep 2005 - July 2007	<b>Vordiplom (eqvl. BSc)</b>	Humboldt University, Berlin, Germany
Sep 1995 - July 2004	<b>Abitur (eqvl. A-levels)</b>	Scheffel Gymnasium, Bad Säckingen, Germany

## Awards & Scholarships

Sep 2020	Stanford Human-Centered Artificial Intelligence (HAI) seed grant: “The Science and Engineering of Explanations (SEE)” (\$75,000)
Jun 2019	Stanford Hellman Faculty Scholar Award: “Multi-modal inference through mental simulation” (\$39,960)
May 2019	Stanford Human-Centered Artificial Intelligence (HAI) seed grant: “Multi-modal inference in brains, minds, and machines” (\$75,000)
2015 - 2016	Templeton Foundation: “The Experience Project: Computational models of the intuitive theory of transformative experiences” (\$90,000; co-PI)
Apr 2013 - 2014	MIT Intelligence Initiative PostDoc Scholarship
May 2004 - Dec 2012	e-fellows.net Scholarship
Sep 2009 - Sep 2012	AXA PhD Scholarship (€120,000)

Apr 2012	PPG Conference Best Presentation Award, London, England <i>Award for best oral presentation at the annual conference of UCL's postgraduate peer group</i>
Mar 2011	UCL Sully Scholarship (£1,466), London, England <i>Award for best PhD upgrade talk in the Department of Cognitive, Perceptual, and Brain Sciences, 2010</i>
Jan 2011	UCL Bogue Scholarship (£3,450), London, England <i>Grant to cover 3-month lab visits to Stanford and MIT</i>
Oct 2010	KogWis, Berlin, Germany <i>Conference travel grant</i>
Feb 2006 - Sep 2009	Scholar of the German National Academic Foundation
July 2009	Max Planck Institute Berlin, Germany <i>2<sup>nd</sup> prize in poster competition of the Summer Institute on Bounded Rationality</i>
Nov 2008	University College London, England <i>Best performing student of the academic year for the MSc in Cognitive and Decision Sciences</i>
July 2006	Humboldt University, Berlin, Germany <i>Winner of the competition for the first psychological experiment</i>

## Publications

Note: \* indicates joint first authorship.

## Submitted papers

1. Langenhoff, A. F., A. Wiegmann, J. Y. Halpern, J. B. Tenenbaum, and **T. Gerstenberg** (submitted). Predicting responsibility judgments from dispositional inferences and causal attributions.
2. Smith, K. A., J. B. Hamrick, A. N. Sanborn, P. W. Battaglia, **T. Gerstenberg**, T. D. Ullman, and J. B. Tenenbaum (submitted). Probabilistic models of physical reasoning.
3. Sosa, F. A., T. D. Ullman, J. B. Tenenbaum, S. J. Gershman, and **T. Gerstenberg** (submitted). Moral dynamics: Grounding moral judgment in intuitive physics and intuitive psychology.
4. **Gerstenberg, T.** and S. Stephan (2020). A counterfactual simulation model of causation by omission. *PsyArXiv*.
5. Kirfel, L., T. F. Icard, and **T. Gerstenberg** (2020a). Inference from explanation. *PsyArXiv*.

## In press

6. **Gerstenberg, T.**, N. D. Goodman, D. A. Lagnado, and J. B. Tenenbaum (in press). A counterfactual simulation model of causal judgment. *Psychological Review*. preprint on OSF at <https://psyarxiv.com/7zj94/>.

## Journal articles

7. Kominsky, J. F., **T. Gerstenberg**, M. Pelz, M. Sheskin, H. Singmann, L. Schulz, and F. C. Keil (2021). The trajectory of counterfactual simulation in development. *Developmental Psychology* 57(2), 253–268.
8. Grinfeld, G., D. Lagnado, **T. Gerstenberg**, J. F. Woodward, and M. Usher (2020). Causal Responsibility and Robust Causation. *Frontiers in Psychology* 11, 1069.
9. Niemi, L., J. Hartshorne, **T. Gerstenberg**, M. Stanley, and L. Young (2020). Moral Values Reveal the Causality Implicit in Verb Meaning. en. *Cognitive Science* 44(6).
10. **Gerstenberg, T.** and T. F. Icard (2019). Expectations affect physical causation judgments. *Journal of Experimental Psychology: General* 149(3), 599–607.

11. Morris, A., J. Phillips, **T. Gerstenberg**, and F. Cushman (2019). Quantitative causal selection patterns in token causation. *PLoS ONE* 14(8), e0219704.
12. Bramley, N. R., **T. Gerstenberg**, R. Mayrhofer, and D. A. Lagnado (2018). Time in causal structure learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 44(12), 1880–1910.
13. Bramley, N. R., **T. Gerstenberg**, J. B. Tenenbaum, and T. M. Gureckis (2018). Intuitive experimentation in the physical world. *Cognitive Psychology* 105, 9–38.
14. **Gerstenberg, T.**, T. D. Ullman, J. Nagel, M. Kleiman-Weiner, D. A. Lagnado, and J. B. Tenenbaum (2018). Lucky or clever? From expectations to responsibility judgments. *Cognition* 177, 122–141.
15. Koskuba, K., **T. Gerstenberg**, H. Gordon, D. A. Lagnado, and A. Schlottmann (2018). What's fair? How children assign reward to members of teams with differing causal structures. *Cognition* 177, 234–248.
16. **Gerstenberg, T.**, M. F. Peterson, N. D. Goodman, D. A. Lagnado, and J. B. Tenenbaum (2017). Eye-Tracking causality. *Psychological Science* 28(12), 1731–1744.
17. Gershman\*, S. J., T. Gerstenberg\*, C. L. Baker, and F. Cushman (2016). Plans, habits, and theory of mind. *PLoS ONE* 11(9), e0162246.
18. Alicke, M. D., D. R. Mandel, D. Hilton, **T. Gerstenberg**, and D. A. Lagnado (2015). Causal conceptions in social explanation and moral evaluation: A historical tour. *Perspectives on Psychological Science* 10(6), 790–812.
19. Kominsky, J. F., J. Phillips, **T. Gerstenberg**, D. A. Lagnado, and J. Knobe (2015). Causal superseding. *Cognition* 137, 196–209.
20. Lagnado, D. A., **T. Gerstenberg**, and R. Zultan (2013). Causal responsibility and counterfactuals. *Cognitive Science* 47, 1036–1073.
21. **Gerstenberg, T.** and D. A. Lagnado (2012). When contributions make a difference: Explaining order effects in responsibility attributions. *Psychonomic Bulletin & Review* 19(4), 729–736.
22. Zultan, R., **T. Gerstenberg**, and D. A. Lagnado (2012). Finding fault: Counterfactuals and causality in group attributions. *Cognition* 125(3), 429–440.
23. **Gerstenberg, T.** and D. A. Lagnado (2010). Spreading the blame: The allocation of responsibility amongst multiple agents. *Cognition* 115(1), 166–171.
24. Meder, B., **T. Gerstenberg**, Y. Hagmayer, and M. R. Waldmann (2010). Observing and Intervening: Rational and Heuristic Models of Causal Decision Making. *Open Psychology Journal* 3, 119–135.

### Peer-reviewed conference proceedings articles

25. Beller\*, A., E. Bennett\*, and **T. Gerstenberg** (2020). The language of causation. In: *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.
26. Bridgers, S., C. Yang, **T. Gerstenberg**, and H. Gweon (2020). Whom will Granny thank? Thinking about what could have been informs children's inferences about relative helpfulness. In: *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.
27. Kirfel, L., T. F. Icard, and **T. Gerstenberg** (2020b). Learning from explanations. In: *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.
28. Kominsky, J. F., **T. Gerstenberg**, M. Pelz, H. Singmann, M. Sheskin, and F. Keil (2019). The trajectory of counterfactual simulation in development. In: *Proceedings of the 41st Annual Conference of the Cognitive Science Society*. Ed. by A. Goel, C. Seifert, and C. Freksa. Montreal, QB: Cognitive Science Society, pp.2044–2050.
29. Yildirim, I., B. Saeed, G. Bennett-Pierre, **T. Gerstenberg**, J. B. Tenenbaum, and H. Gweon (2019). Explaining intuitive difficulty judgments by modeling physical effort and risk. *Proceedings of the 41st Annual Conference of the Cognitive Science Society*.

30. Gates, M. A., T. L. Veuthey, M. H. Tessler, K. A. Smith, **T. Gerstenberg**, L. Bayet, and J. B. Tenenbaum (2018). Tiptoeing around it: Inference from absence in potentially offensive speech. In: *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
31. **Gerstenberg, T.**, M. H. Siegel, and J. B. Tenenbaum (2018). What happened? Reconstructing the past from vision and sound. In: *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.
32. Bramley, N. R., R. Mayrhofer, **T. Gerstenberg**, and D. A. Lagnado (2017). Causal learning from interventions and dynamics in continuous time. In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
33. **Gerstenberg, T.**, L. Zhou, K. A. Smith, and J. B. Tenenbaum (2017). Faulty towers: A hypothetical simulation model of physical support. In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
34. Stephan, S., P. Willemsen, and **T. Gerstenberg** (2017). Marbles in Inaction: Counterfactual Simulation and Causation by Omission. In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
35. Yildirim, I., **T. Gerstenberg**, B. Saeed, M. Toussant, and J. B. Tenenbaum (2017). Physical problem solving: Joint planning with symbolic, geometric, and dynamic constraints. In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*.
36. Bramley, N., **T. Gerstenberg**, and J. B. Tenenbaum (2016). Natural science: Active learning in dynamic physical microworlds. In: *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Ed. by A. Papafragou, D. Grodner, D. Mirman, and J. C. Trueswell. Austin, TX: Cognitive Science Society, pp.2567–2572.
37. **Gerstenberg, T.** and J. B. Tenenbaum (2016). Understanding “almost”: Empirical and computational studies of near misses. In: *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Ed. by A. Papafragou, D. Grodner, D. Mirman, and J. C. Trueswell. Austin, TX: Cognitive Science Society, pp.2777–2782.
38. Niemi, L., J. Hartshorne, **T. Gerstenberg**, and L. Young (2016). Implicit measurement of motivated causal attribution. In: *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Ed. by A. Papafragou, D. Grodner, D. Mirman, and J. C. Trueswell. Austin, TX: Cognitive Science Society, pp.1745–1750.
39. Allen, K., J. Jara-Ettinger, **T. Gerstenberg**, M. Kleiman-Weiner, and J. B. Tenenbaum (2015). Go fishing! Responsibility judgments when cooperation breaks down. In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Ed. by D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, J. Matlock T., C. D., and P. P. Maglio. Austin, TX: Cognitive Science Society, pp.84–89.
40. **Gerstenberg, T.**, N. D. Goodman, D. A. Lagnado, and J. B. Tenenbaum (2015). How, whether, why: Causal judgments as counterfactual contrasts. In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Ed. by D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, J. Matlock T., C. D., and P. P. Maglio. Austin, TX: Cognitive Science Society, pp.782–787.
41. **Gerstenberg, T.**, J. Y. Halpern, and J. B. Tenenbaum (2015). Responsibility judgments in voting scenarios. In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Ed. by D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, J. Matlock T., C. D., and P. P. Maglio. Austin, TX: Cognitive Science Society, pp.788–793.
42. Kleiman-Weiner, M., **T. Gerstenberg**, S. Levine, and J. B. Tenenbaum (2015). Inference of intention and permissibility in moral decision making. In: *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Ed. by D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, J. Matlock T., C. D., and P. P. Maglio. Austin, TX: Cognitive Science Society, pp.1123–1128.
43. Bramley, N., **T. Gerstenberg**, and D. A. Lagnado (2014). The order of things: Inferring causal structure from temporal patterns. In: *Proceedings of the 36th Annual Conference of the Cognitive*

- Science Society*. Ed. by P. Bello, M. Guarini, M. McShane, and B. Scassellati. Austin, TX: Cognitive Science Society, pp.236–241.
44. **Gerstenberg, T.**, N. D. Goodman, D. A. Lagnado, and J. B. Tenenbaum (2014). From counterfactual simulation to causal judgment. In: *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Ed. by P. Bello, M. Guarini, M. McShane, and B. Scassellati. Austin, TX: Cognitive Science Society, pp.523–528.
  45. **Gerstenberg, T.**, T. D. Ullman, M. Kleiman-Weiner, D. A. Lagnado, and J. B. Tenenbaum (2014). Wins above replacement: Responsibility attributions as counterfactual replacements. In: *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Ed. by P. Bello, M. Guarini, M. McShane, and B. Scassellati. Austin, TX: Cognitive Science Society, pp.2263–2268.
  46. Kominsky, J. F., J. Phillips, J. Knobe, **T. Gerstenberg**, and D. A. Lagnado (2014). Causal supersession. In: *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Ed. by P. Bello, M. Guarini, M. McShane, and B. Scassellati. Austin, TX: Cognitive Science Society, pp.761–766.
  47. **Gerstenberg, T.**, C. Bechlivanidis, and D. A. Lagnado (2013). Back on track: Backtracking in counterfactual reasoning. In: *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Ed. by M. Knauff, M. Pauen, N. Sebanz, and I. Wachsmuth. Austin, TX: Cognitive Science Society, pp.2386–2391.
  48. **Gerstenberg, T.** and N. D. Goodman (2012). Ping Pong in Church: Productive use of concepts in human probabilistic inference. In: *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Ed. by N. Miyake, D. Peebles, and R. P. Cooper. Austin, TX: Cognitive Science Society, pp.1590–1595.
  49. **Gerstenberg, T.**, N. D. Goodman, D. A. Lagnado, and J. B. Tenenbaum (2012). Noisy Newtons: Unifying process and dependency accounts of causal attribution. In: *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Ed. by N. Miyake, D. Peebles, and R. P. Cooper. Austin, TX: Cognitive Science Society, pp.378–383.
  50. McCoy, J., T. Ullman, A. Stuhlmüller, **T. Gerstenberg**, and J. B. Tenenbaum (2012). Why blame Bob? Probabilistic generative models, counterfactual reasoning, and blame attribution. In: *Proceedings of the 34th Annual Conference of the Cognitive Science Society*. Ed. by N. Miyake, D. Peebles, and R. P. Cooper. Austin, TX: Cognitive Science Society, pp.1996–2001.
  51. **Gerstenberg, T.**, A. Ejova, and D. A. Lagnado (2011). Blame the skilled. In: *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Ed. by C. Carlson, C. Hölscher, and T. Shipley. Austin, TX: Cognitive Science Society, pp.720–725.
  52. **Gerstenberg, T.**, D. A. Lagnado, M. Speekenbrink, and C. Cheung (2011). Rational order effects in responsibility attributions. In: *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Ed. by C. Carlson, C. Hölscher, and T. Shipley. Austin, TX: Cognitive Science Society, pp.1715–1720.
  53. Schächtele, S., **T. Gerstenberg**, and D. A. Lagnado (2011). Beyond outcomes: The influence of intentions and deception. In: *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Ed. by L. Carlson, C. Hölscher, and T. Shipley. Austin, TX: Cognitive Science Society, pp.1860–1865.
  54. **Gerstenberg, T.**, D. A. Lagnado, and Y. Kareev (2010). The dice are cast: The role of intended versus actual contributions in responsibility attribution. In: *Proceedings of the 32nd Annual Conference of the Cognitive Science Society*. Ed. by S. Ohlsson and R. Catrambone. Austin, TX: Cognitive Science Society, pp.1697–1702.



## Book chapters

55. Bramley, N. R., **T. Gerstenberg**, R. Mayrhofer, and D. A. Lagnado (2019). “Intervening in time”. In: *Time and Causality Across the Sciences*. Ed. by S. Kleinberg. Cambridge University Press, pp.86–115.
56. **Gerstenberg, T.** and J. B. Tenenbaum (2017). “Intuitive Theories”. In: *Oxford Handbook of Causal Reasoning*. Ed. by M. Waldmann. Oxford University Press, pp.515–548.
57. Lagnado, D. A. and **T. Gerstenberg** (2017). “Causation in legal and moral reasoning”. In: *Oxford Handbook of Causal Reasoning*. Ed. by M. Waldmann. Oxford University Press, pp.565–602.
58. Goodman, N. D., J. B. Tenenbaum, and **T. Gerstenberg** (2015). “Concepts in a probabilistic language of thought”. In: *The Conceptual Mind: New Directions in the Study of Concepts*. Ed. by E. Margolis and S. Lawrence. MIT Press, pp.623–653.
59. Lagnado, D. A. and **T. Gerstenberg** (2015). “A difference-making framework for intuitive judgments of responsibility”. In: *Oxford Studies in Agency and Responsibility*. Ed. by D. Shoemaker. Vol. 3. Oxford University Press, pp.213–241.
60. **Gerstenberg, T.** and D. A. Lagnado (2014). “Attributing responsibility: Actual and counterfactual worlds”. In: *Oxford Studies in Experimental Philosophy*. Ed. by J. Knobe, T. Lombrozo, and S. Nichols. Vol. 1. Oxford University Press, pp.91–130.

## ArXiv

61. Morris, A., J. Phillips, T. Icard, J. Knobe, **T. Gerstenberg**, and F. Cushman (2018). Judgments of actual causation approximate the effectiveness of interventions. *PsyArXiv*.

## PhD thesis & MSc thesis

62. **Gerstenberg, T.** (2013). Making a difference: Responsibility, causality, and counterfactuals. *Unpublished PhD thesis*.
63. **Gerstenberg, T.** (2009). The allocation of responsibility amongst multiple causes. *Unpublished MSc thesis*.

## Press & Multimedia

- 2020 [Talk recording](#) – Remote presentation in Symbolic Systems seminar series at Stanford.
- 2018 [Quantifying How We Intuit the Physical World](#) – Medium blog post about the *Intuitive experimentation in the physical world* paper.  
[What happened? Reconstructing the past from vision and sound](#) – Flash presentation at the Center for Brains, Minds & Machines.
- 2017 [How we determine blame](#) – Article on MIT News covering our *Eye-tracking causality* paper.  
[Wo das essen nicht kalt wird](#) – Article in Deutsche Universitätszeitung (DUZ) on what working at MIT is like.
- 2016 [Eye-tracking causality](#) – Flash presentation at the Center for Brains, Minds & Machines.
- 2015 [A counterfactual simulation model of causal judgment](#) – Recording of invited talk at the Society for Psychology and Philosophy Conference.
- 2012 [Are you responsible for the outcome of the election?](#) – Blog entry written by Tania Lombrozo which covers the “When contributions make a difference: Explaining order effects in responsibility attributions” paper.

- 2010 [AXA Talent Day](#) – Video created in the context of a talent day organized by AXA in Paris.  
[Who is to blame when groups succeed or fail?](#) – Blog entry written by Art Markman in *Psychology Today* summarizing the “Spreading the blame: The allocation of responsibility amongst multiple agents” paper.

## Conferences & Workshops

- July 2020 Cognitive Science Conference (42<sup>nd</sup>), Toronto, Canada (virtual)  
**Poster:** *Whom will Granny thank? Thinking about what could have been informs children’s inferences about relative helpfulness. (presented by Sophie Bridgers).*  
**Poster:** *The language of causation (presented by Aaron Beller).*  
**Poster:** *Learning from explanations (presented by Lara Kirfel).*
- Apr 2020 ICLR Eighth International Conference on Learning Representations, Virtual Conference, Formerly Addis Ababa, Ethiopia  
**Invited talk in Workshop on Causal Learning for Decision Making:** “Understanding ‘why’: The role of causality in Cognition”.
- Sep 2019 Psychology and Economics of Causal Reasoning Conference, London, UK  
**Invited Talk:** “Understanding ‘why’: From Counterfactual Simulations to Explanations”.
- July 2019 Cognitive Science Conference (41<sup>st</sup>), Montreal, Canada  
**Talk:** *Explaining intuitive difficulty judgments by modeling physical effort and risk (presented by Ilker Yildirim).*  
**Poster:** *The trajectory of counterfactual simulation in development (presented by Jonathan Kominsky).*
- July 2019 Society for Philosophy and Psychology (SPP), San Diego, California, USA  
**Poster:** *What happened? Reconstructing the past through vision and sound.*
- Mar 2019 AAAI symposium: Beyond curve fitting – Causation, counterfactuals, and imagination-based AI, Stanford, USA  
**Invited Talk:** *Understanding “why” – Causation, Counterfactuals, and Imagination.*
- Oct 2018 Mental Simulation Workshop, UC Merced, USA  
**Invited Talk:** *What happened? Reconstructing the past from vision and sound.*
- July 2018 Cognitive Science Conference (40<sup>th</sup>), Madison, Wisconsin, USA  
**Talk:** *What happened? Reconstructing the past from vision and sound.*  
**Poster:** *Tiptoeing around it: Inference from absence in potentially offensive speech (presented by Monica Gates).*  
**Poster:** *Moral dynamics (presented by Felix Sosa).*
- July 2018 Society for Philosophy and Psychology (SPP), Ann Arbor, Michigan, USA  
**Talk:** *Judgments of actual causation approximate the effectiveness of interventions (William James Prize for best contributed paper by a graduate student, presented by Adam Morris)*
- Jan 2018 Causal pluralism: a multi-disciplinary investigation of causality in philosophy and the sciences, Cambridge, USA  
**Invited Talk:** *A counterfactual simulation model of causal judgment.*

- July 2017 Cognitive Science Conference (39<sup>th</sup>), London, UK  
**Talk:** *Faulty Towers: A hypothetical simulation model of physical support.*  
**Talk:** *Causal learning from interventions and dynamics in continuous time (presented by Neil Bramley).*  
**Talk:** *Marbles in inaction: Counterfactual simulation and causation by omission (presented by Simon Stephan).*  
**Poster:** *Physical problem solving: Joint planning with symbolic, geometric, and dynamic constraints.*  
**Poster:** *Eye movement-based probabilistic models for physical scene understanding (presented by Eghbal Hosseini).*
- July 2017 Morality, Language, and Thought Workshop, Paris, France  
**Talk:** *A counterfactual simulation model of causal judgment.*
- June 2017 Society for Philosophy and Psychology (SPP), Baltimore, USA  
**Talk:** *A counterfactual simulation model of causation by omission.*
- June 2017 Time and causality in the sciences, Hoboken, USA  
**Talk:** *A counterfactual simulation model of causal judgment.*
- May 2017 Brains, Minds, and Machines Workshop, San Juan, Puerto Rico  
**Talk:** *Understanding why: From counterfactual simulations to responsibility judgments.*
- Nov 2016 Society for Judgment and Decision Making, Boston, USA  
**Talk:** *Lucky or clever? From changed expectations to responsibility judgments.*
- Aug 2016 Cognitive Science Conference (38<sup>th</sup>), Philadelphia, USA  
**Talk in workshop:** *The role of space, time, and causality in evaluating counterfactual closeness.*  
**Talk:** *Understanding “almost”: Empirical and computational studies of near misses.*  
**Talk:** *Natural science: Active learning in dynamic physical microworlds (presented by Neil Bramley).*  
**Talk:** *Implicit measurement of motivated causal attribution (presented by Laura Niemi).*
- Aug 2016 International Conference on Thinking, Providence, USA  
**Organized symposium:** *Holding others responsible.*  
**Talk in contributed symposium:** *From changed expectations to attributions of responsibility.*
- June 2016 Society for Philosophy and Psychology (SPP), Austin, USA  
**Talk in invited symposium:** *A counterfactual simulation model of causal judgments.*
- Nov 2015 Society for Judgment and Decision Making (SJDM), Chicago, USA  
**Poster:** *A counterfactual simulation model of causal judgments.*
- Nov 2015 Psychonomics, Chicago, USA  
**Poster:** *Inference of Intention and Permissibility in Moral Judgment (presented by Max Kleiman-Weiner). Nominated for best student poster award.*
- July 2015 Multidisciplinary University Research Initiative (MURI) meeting, Lake Arrowhead, USA  
**Talk:** *A counterfactual simulation model of causal judgments.*



- July 2015 Cognitive Science Conference (37<sup>th</sup>), Pasadena, USA  
**Talk in workshop:** *A counterfactual simulation model of causal judgments.*  
**Talk:** *How, whether, why: Causal judgments as counterfactual contrasts.*  
**Talk:** *Responsibility judgments in voting scenarios.*  
**Talk:** *Inference of intention and permissibility in moral decision making (presented by Max Kleiman-Weiner).*  
**Poster:** *Go fishing! Responsibility judgments when cooperation breaks down (presented by Kelsey Allen).*
- Jan 2015 Ranch Metaphysics Workshop, Arizona, USA  
**Invited Talk:** *Intuitive theories.*
- Aug 2014 Modality Workshop Yale, New Haven, USA  
**Invited Talk:** *From counterfactual simulation to causal judgment.*
- July 2014 Cognitive Science Conference (36<sup>th</sup>), Quebec City, Canada  
**Talk:** *From counterfactual simulation to causal judgment.*  
**Poster:** *Responsibility attributions as counterfactual replacements.*  
**Talk:** *The order of things (co-author).*  
**Talk:** *Causal supersession (co-author).*
- June 2014 Society for Philosophy and Psychology, Vancouver, Canada  
**Talk:** *From counterfactual simulation to causal judgment.*
- Nov 2013 Roundtable on Causal Overdetermination, Urbana-Champaign, USA  
**Invited Talk:** *Causal responsibility and counterfactuals.*
- Nov 2013 New Orleans Workshop on Agency and Responsibility, USA  
**Talk (joint with David Lagnado):** *A difference-making framework for intuitive judgments of responsibility.*
- Aug 2013 SPUDM conference (24<sup>th</sup>), Barcelona, Spain  
**Talk in symposium:** *How intentions and deception influence responsibility attributions in groups.*  
**Talk in symposium:** *A counterfactual model of responsibility attributions in groups.*
- Aug 2013 Cognitive Science Conference (35<sup>th</sup>), Berlin, Germany  
**Poster:** *Back on track – Backtracking in counterfactual reasoning.*
- July 2013 London Reasoning Workshop, London, UK  
**Talk:** *Back on track – Backtracking in counterfactual reasoning.*
- June 2013 PostDocs Share Their Science Event, Boston, USA  
**Poster:** *General principles of causal attribution.*
- June 2013 Society of Philosophy and Psychology Conference, Providence, USA
- Aug 2012 Cognitive Science Conference (34<sup>th</sup>), Sapporo, Japan  
**Talk:** *Noisy Netwons: Unifying process and dependency accounts of causal attribution.*  
**Poster:** *Ping Pong in Church: Productive use of concepts in human probabilistic inference.*  
**Poster:** *Why blame Bob? Probabilistic generative models for counterfactual reasoning and blame attribution (presented by John McCoy and Tomer Ullman).*
- July 2012 International Conference on Thinking, University College London, UK  
**Invited talk in symposium:** *Finding fault: Causality and Counterfactuals in Group Attributions.*  
**Talk:** *Noisy Netwons: Unifying process and dependency accounts of causal attribution.*

- May 2012 'Towards Consilience' Workshop, London Business School, UK
- May 2012 'Personal and Shared Intentions' Workshop, MPI Berlin, Germany  
*Invited talk: How intentions and deception influence attributions of responsibility in groups.*
- Apr 2012 Postgraduate Peer Group Conference, Cumberland Lodge, UK  
*Talk: Noisy Newtons - People's intuitive understanding of physics explains their causal attributions; 1<sup>st</sup> prize in the oral presentation competition.*
- Apr 2012 Tagung experimentell arbeitender Psychologen (TEAP), Mannheim, Germany  
*Talk: Noisy Newtons: Unifying process and dependency accounts of causal attribution.*
- Jan 2012 CEU Conference on Cognitive Development, Budapest, Hungary  
*Invited talk in symposium: Noisy Newtons: People's intuitive understanding of physics explains their cause and prevention judgments.*
- Sep 2011 Experimental Philosophy Workshop, Sheffield, England
- Aug 2011 SPUDM conference (23<sup>rd</sup>), Kingston, England  
*Talk: On perceived criticality and expected effort.*  
*Talk: Rational order effects in responsibility attributions.*
- July 2011 Cognitive Science Conference (33<sup>rd</sup>), Boston, USA  
*Talk: Rational order effects in responsibility attributions.*  
*Poster: Beyond outcomes: The influence of intentions and deception.*  
*Poster: Blame the skilled.*
- July 2011 European Association of Social Psychology Conference, Stockholm, Sweden  
*Talk in symposium: Rational order effects in responsibility attributions.*
- Mar 2011 International Conference on Behavioral Decision Making, Israel  
*Poster: Responsibility Attributions in Teams; 2<sup>nd</sup> prize in the conference poster competition (presented by Ro'i Zultan).*
- Oct 2010 KogWis, Potsdam, Germany  
*Poster: The Allocation of Responsibility amongst Multiple Agents.*
- Sep 2010 Actual Causation Workshop, Konstanz, Germany
- Aug 2010 Cognitive Science Conference (32<sup>nd</sup>), Portland, Oregon  
*Poster: The Dice are Cast: The Influence of Intended versus Actual Contributions on Responsibility Attribution.*
- Aug 2010 Mathematical Psychology Conference, Portland, Oregon
- June 2010 AXA Talent Day, Paris, France  
*Poster: The Dice are Cast: The Influence of Intended versus Actual Contributions on Responsibility Attribution.*
- May 2010 Cognitive Science and Machine Learning Summer School, Sardinia, Italy
- Apr 2010 EPS/SEPEX Joint Conference, Granada, Spain  
*Talk: The Dice are Cast.*
- Aug 2009 SPUDM Conference (22<sup>nd</sup>), Rovereto, Italy  
*Poster: Allocation of Responsibility amongst Multiple Agents.*
- July 2009 Summer Institute, Max Planck Institute Berlin, Germany  
*Poster: Allocation of Responsibility amongst Multiple Agents; 2<sup>nd</sup> prize in the poster competition.*

- June 2009 MICRAC Workshop, Toulouse, France  
*Talk: Allocation of Responsibility amongst Multiple Agents.*
- July 2008 PsyPag Conference, Manchester, England  
*Talk: Presentation of MSc thesis (honorable mention).*

### Invited Presentations

- |      |   |   |
|------|---|---|
| 2021 | Schuck Lab (Dr. Nicolas Schuck)                                   | Max Planck Institute Berlin, Germany                    |
|      | Computation, Cognition, and Development Lab (Prof. Tomer Ullman)  | Harvard University, USA                                 |
| 2020 | Computational Cognitive Science Colloquium                        | TU Darmstadt, Germany                                   |
|      | Decision Making and Economic Psychology Seminar                   | Ben-Gurion University, Israel                           |
|      | Developmental Brownbag  | UC San Diego, USA                                       |
|      | Computational Approaches to Social Cognition Talk Series          | Harvard University, USA                                 |
|      | Symbolic Systems Forum ( <a href="#">talk recording</a> )         | Stanford University, USA                                |
|      | Computational Cognitive Science Group (Prof. Neil Bramley)        | Edinburgh University, UK                                |
| 2019 | Robotics Lunch  | Stanford University, USA                                |
|      | Seminar on History and Philosophy of Science                      | California Institute of Technology, USA                 |
|      | Cognition & Language seminar                                      | Stanford University, USA                                |
|      | Mind, Brain, Computation, and Technology seminar                  | Stanford University, USA                                |
| 2018 | FriSem (Cognitive & Neuroscience seminar)                         | Stanford, USA   |
|      | MIT Brain and Cognitive Sciences Retreat                          | Newport, USA  |
|      | Visual Attention Lab  | Brigham & Women's Hospital, USA                         |
|      | Northeastern Cognition Area Speaker Series                        | Northeastern University, USA                            |
|      | The Imagination and Modal Cognition Lab (Prof. Felipe De Brigard) | Duke University, USA                                    |
| 2017 | Cognitive Lunch   | Yale, USA   |
|      | Computational Social Cognition boot camp                          | Harvard, USA  |
|      | ConCats seminar series  | NYU, USA  |
|      | Language Learning Lab (Prof. Joshua Hartshorne)                   | Boston College, USA                                     |
|      | Psychology Department Colloquium                                  | Berkeley, USA   |
|      | Psychology Department Colloquium                                  | Stanford University, USA                                |
|      | Cushman & Greene lab meeting                                      | Harvard University, USA                                 |
|      | Behavioral Science Seminar  | The University of Chicago Booth School of Business, USA |

2016	Computational Cognitive Neuroscience Lab (Prof. Sam Gershman)	Harvard University, USA
	Applied Statistics Workshop	Harvard University, USA
	Program for Evolutionary Dynamics	Harvard University, USA
	Center for Adaptive Rationality	Max Planck Institute Berlin, Germany
	Language and Cognition seminar series	Harvard University, USA
	Cognition seminar series	Brown University, USA
2015	Crockett lab (Prof. Molly Crockett)	Oxford University, UK
	London Judgment and Decision Making Seminar	University College London, UK
	Office of Naval Research	Washington, DC, USA
2014	Boston Moral Reasoning Group	Boston University, USA
	Social Lunch	Harvard University, Cambridge, USA
	Adaptive Behavior and Cognition Research Group (Prof. Gerd Gigerenzer)	Max Planck Institute, Berlin, Germany
	Computation and Cognition Lab (Prof. Noah Goodman)	Stanford University, USA
	Lab meeting (Prof. Joshua Knobe)	Yale University, USA
2013	Moral Cognition Lab (Prof. Joshua Greene)	Harvard University, USA
	Morality Lab (Prof. Liane Young)	Boston College, USA
	Sloman Lab (Prof. Steven Sloman)	Brown University, USA
	Early Childhood Cognition Lab (Prof. Laura Schulz)	Massachusetts Institute of Technology, USA
	Computational Cognitive Science Lab (Prof. Josh Tenenbaum)	Massachusetts Institute of Technology, USA
2012	Invited Speakers Series	University of Leicester, England
	Special Seminar (Dr. Christopher Summerfield)	Oxford University, England
	Lab meeting (Dr. Ralf Mayrhofer)	University Göttingen, Germany
2011	Computational Cognitive Science Group (Prof. Josh Tenenbaum)	Massachusetts Institute of Technology, Boston, USA
	CogLunch of the Cognitive Science Department	Massachusetts Institute of Technology, Boston, USA
	Lab meeting (Prof. Noah Goodman)	Stanford University, Palo Alto, USA
2010	Research seminar series	Decision Technology, London, England
	London Judgement and Decision Making Group	University College London, England
	Strategic Interaction group seminar (Prof. Werner Güth)	Max Planck Institute for Economics, Jena, Germany

2009	Cognitive and Decision Sciences seminar (Prof. Michael Waldmann)	University Göttingen, Germany
	Philosophy of Mind seminar (Prof. Michael Pauen)	Humboldt University, Berlin, Germany

## Teaching

2021	PSYCH 252: Statistical Methods for Behavioral and Social Sciences (Graduate statistics course)	
2020	PSYCH 293: What makes a good explanation? Psychological and philosophical perspectives (co-taught with Prof. Thomas Icard) (Graduate seminar)	
	PSYCH 251: Experimental methods (co-taught with Prof. Michael Frank)	
	PSYCH 187: Research Methods in Cognition and Development (co-taught with Prof. Hyo Gweon) (Advanced undergraduate seminar)	
	PSYCH 252: Statistical Methods for Behavioral and Social Sciences (Graduate statistics course)	
2019	Guest lecture in Symbolic Systems 1 on “Intuitive Theories”.	
	PSYCH 291: Causal Cognition (Graduate seminar)	
	PSYCH 252: Statistical Methods for Behavioral and Social Sciences (Graduate statistics course)	
2017	Tutorial on “Mental models as probabilistic programs” in class 9.66 (Computational Cognitive Science taught by Prof. Josh Tenenbaum).	
	Tutorial on “Mental models as probabilistic programs” at the Brains, Minds, and Machines summer school in Woods Hole. Teaching assistant for three student projects.	
	Tutorial on “Mental models as probabilistic programs” at the Brains, Minds, and Machines workshop in San Juan, Puerto Rico.	
2016	Lecture on “Counterfactual simulation” in class 9.66 (Computational Cognitive Science taught by Prof. Josh Tenenbaum).	
2015	Kaufman Teaching Certificate Program.	
2012	UCL MSc lecture: Theoretical frameworks of responsibility attribution.	
	UCL 1 <sup>st</sup> year undergraduate psychology lab class: Causal attribution.	
2011	UCL 1 <sup>st</sup> year undergraduate psychology lab class: Responsibility attribution.	
2010	UCL teaching demonstratorship.	

## Mentorship

2020	Bryce Lynford: “Productive use of concepts in human probabilistic inference”
	Liang Zhou: “A hypothetical simulation model of causal support”
	Disha Dasgupta: “Resolving ambiguities in counterfactual reasoning”
	Xi Jia (Laura) Zhou: “The development of multi-modal integration”
	Tina Hua: “Eye-tracking motivated reasoning”



- 2019 Antonia Langenhoff (3 month visit): “Predicting responsibility judgments from dispositional inferences and causal attributions”
- Lara Kirfel (3 month visit): “Learning from language: Inferences about norms and causal structure from explanations”
- Ross Kempner (CSLI summer intern): “Does motivation influence causal judgments via biased counterfactual simulations?”
- Alan Brown (Research assistant): “Eye-tracking causality: Reconstructing the past”
- Jingren Wang (Summer intern): “Hypotheticals, counterfactuals, and causal judgments”

## Outreach

- 2020 “Path to PhD” workshop at Stanford: Orientation program for underrepresented students
- 2018 “Path to PhD” workshop at Stanford: Orientation program for underrepresented students

## University service

- 2020 Chairperson at thesis defense (Evan Strasnick, Computer Science)
- Chairperson at thesis defense (Francesca Zaffora Blando, Philosophy)
- Chairperson at thesis defense (Sebastian Schuster, Linguistics)
- Chairperson at thesis defense (Reuben Cohn, Linguistics)
- Reader of PhD thesis (Erin Bennett, Psychology)
- Committee member in PhD thesis defense (Sophie Bridges, Psychology)
- Committee member in PhD thesis defense (Andrew Kyle Lampinen, Psychology)
- Committee member in qualifying project (Elisa Kreiss, Linguistics)
- Reader on first year project (Effie Li, Psychology)
- 2019 Chairperson at thesis defense (Prerna Nadathur, Linguistics)
- Reader on first year project (Andrew Nam, Psychology)

## Reviews

Since	Journal / Conference / Grant	Reviews
Oct 2020	Social Psychological and Personality Science	
Aug 2020	Nature Computational Science	
May 2019	Journal of Experimental Psychology: General	
Apr 2019	Israel Science Foundation	
Aug 2018	Trends in Cognitive Science	
May 2018	Proceedings of the National Academy of Sciences	
May 2018	KogWis	
Mar 2018	Grant referee for National Science Foundation (NSF) proposal	
Feb 2018	Psychological Science	
Mar 2017	Cognitive Psychology	

Mar 2017	Nature Human Behavior	
Dec 2016	Grant referee for the European Research Council (ERC)	
Sep 2016	Topics in Cognitive Science	
Aug 2016	Perspectives on Psychological Science	
Sep 2015	Social Psychology	
July 2015	Learning and Motivation	
May 2015	The Oxford Handbook of Causal Reasoning	
Feb 2015	Society for Philosophy and Psychology Conference	
Dec 2014	PLoS ONE	
June 2014	Journal of Experimental Psychology: Learning, Memory & Cognition	
Oct 2013	Scandinavian Journal of Psychology	
Aug 2013	Thinking and Reasoning	
Jan 2013	Journal of Cognitive Psychology	
Jan 2013	Cognitive Science	
Nov 2012	Topoi – An International Review of Philosophy	
Nov 2012	Journal of Experimental Social Psychology	
Oct 2012	Oxford Studies of Experimental Philosophy	
Feb 2012	Quarterly Journal of Experimental Psychology	
Oct 2011	Psychonomic Bulletin and Review	
June 2011	Cognition	
Jan 2011	Cognitive Science Conference Proceedings	

## Editorial positions

**Since** Journal / Conference / Grant

2019 Cognitive Science Conference Proceedings

**Reviews**

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## Skills & Interests

**Languages** German (native), English (fluent), Spanish (basic), French (basic)

**Software** R, Python, Javascript,  $\text{\LaTeX}$

**Interests** Surfing, Beachvolleyball, Chess, Cycling, Yoga, Music, Piano, Guitar, Meditation