




# Kevin G. O'Neill, Ph.D.


April 2025  
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Experience	<b>Postdoctoral Research Associate</b> <a href="#">MetaLab</a> — Prof. Stephen Fleming University College London	2024–present
	<b>Computer Scientist</b> ARCADIA Project — Dr. Paul Bello U.S. Naval Research Laboratory	2017–2018
	<b>Undergraduate Researcher</b> <a href="#">Rensselaer Artificial Intelligence and Reasoning (RAIR) Laboratory</a> — Dr. Selmer Bringsjord Rensselaer Polytechnic Institute	2015–2017
Education	<b>Duke University</b> <a href="#">Imagination and Modal Cognition Laboratory</a> — Dr. Felipe De Brigard <a href="#">Pearson Laboratory</a> — Dr. John Pearson	2018–2024
	<i>Ph.D.</i> , Psychology & Neuroscience Dissertation: The modal and metacognitive nature of causal judgment Committee: Dr. Tamar Kushnir, Dr. Walter Sinnott-Armstrong	GPA: 3.96
	<i>M.A.</i> , Psychology & Neuroscience Thesis: Certainty and singular causal judgment Committee: Dr. Erika Bergelson, Dr. Benjamin Eva	GPA: 3.96
	<b>Rensselaer Polytechnic Institute</b> <i>Bachelor of Science</i> , Cognitive Science and Computer Science	2014–2017 GPA: 3.97
Manuscripts Under Review/ In Preparation	<b>O'Neill, K.</b> , & Fleming, S. M. (In preparation). Metacognition as modal cognition.	
	<b>O'Neill, K.</b> (In preparation). A distributional perspective on counterfactual and causal sensitivity.	
	Łuczak, W., <b>O'Neill, K.</b> , & Fleming, S. M. (Under review). Confidence is detection-like in high-dimensional spaces. <i>arXiv</i> .  	
	<b>O'Neill, K.</b> , Miceli, K., Van Rooy, N., & De Brigard, F. (In preparation). Causation on a continuum: No normality effects on causal judgments about continuous causes. 	
Journal Papers	Quillien, T., <b>O'Neill, K.</b> , & Henne, P. (2025). A counterfactual explanation for recency effects in double prevention scenarios: commentary on Thanawala and Erb (2024). <i>Cognition</i> . 	
	Gedder, R. *, Madlon-Kay, S. *, <b>O'Neill, K.</b> , Pearson, J., & Egner, T. (2025). Modeling of control over task-switching and cross-task interference supports a two-dimensional	


model of cognitive stability and flexibility. *Psychonomic Bulletin & Review*.



**O'Neill, K.**, Henne, P., Pearson, J., & De Brigard, F. (2024). Modeling confidence in causal judgments. *Journal of Experimental Psychology: General*. 



Krasich, K. \*, **O'Neill, K. \***, & De Brigard, F. (2024). Eye-tracking mental simulation during retrospective causal reasoning. *Cognitive Science*.   


Murray, S., **O'Neill, K.**, Bridges, J., Sytsma, J., & Irving, Z. (2024). Blame for hum(e)an beings: The role of character information in judgments of blame. *Social Psychological and Personality Science*. 





Krasich, K. \*, **O'Neill, K. \***, Murray, S., De Brigard, F., & Nuthmann, A. (2023). A computational modeling approach to investigating mind wandering-related adjustments to gaze behavior during scene viewing. *Cognition*.  

Krasich, K., Simmons, C., **O'Neill, K.**, Giattino, C. M., De Brigard, F., Sinnott-Armstrong, W., Mudrik, L., & Woldorff, M. G. (2022). Prestimulus oscillatory brain activity interacts with evoked recurrent processing to facilitate conscious visual perception. *Scientific Reports*, 12(1), 22126. 



Khoudary, A., Hanna, E., **O'Neill, K.**, Iyengar, V., Clifford, S., Cabeza, R., De Brigard, F., & Sinnott-Armstrong, W. (2022). A functional neuroimaging investigation of moral foundations theory. *Social Neuroscience*, 1–17.  



Khoudary, A., **O'Neill, K.**, Faul, L., Murray, S., Smallman, R., & De Brigard, F. (2022). Neural differences between internal and external episodic counterfactual thoughts. *Philosophical Transactions of the Royal Society B*, 377(1866), 20210337.  



Henne, P., & **O'Neill, K.** (2022). Double Prevention, Causal Judgments, and Counterfactuals. *Cognitive Science*.  

**O'Neill, K.**, Henne, P., Bello, P., Pearson, J., & De Brigard, F. (2022). Confidence and gradation in causal judgment. *Cognition*, 223, 105036.    


**O'Neill, K.**, Liu, A., Yin, S., Brady, T., & De Brigard, F. (2021). Effects of category learning strategies on recognition memory. *Memory & cognition*, 1–15.   


Henne, P., **O'Neill, K.**, Bello, P., Khemlani, S., & De Brigard, F. (2020). Norms affect prospective causal judgments. *Cognitive Science*.  

**O'Neill, K.**, Smith, A. P., Smilek, D., & Seli, P. (2020). Dissociating the freely-moving thought dimension of mind-wandering from the intentionality and task-unrelated thought dimensions. *Psychological Research*.  

Seli, P., **O'Neill, K.**, Carriere, J. S., Smilek, D., Beaty, R. E., & Schacter, D. L. (2020). Mind-wandering across the age gap: Age-related differences in mind-wandering are partially attributable to age-related differences in motivation. *The Journals of Gerontology: Series B*.  




**O'Neill, K.**, & De Brigard, F. (2019). Two challenges for a dual system approach to temporal cognition [Commentary on “Thinking in and about time: A dual systems per-


spective on temporal cognition" by Hoerl, C. and McCormack, T.]. *Brain and Behavioral Sciences*, 1–77. 


Govindarajulu, N. S., Bringsjord, S., Sen, A., Paquin, J. C., & **O'Neill, K.** (2018). Ethical operating systems. In De Mol, Liesbeth and Primiero, Giuseppe (Ed.), *Reflections on Programming Systems: Historical and Philosophical Aspects* (pp. 235–260). Springer. 




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## Conference Papers

**O'Neill, K.**, Henne, P., Quillien, T., Icard, T., & De Brigard, F. (2025). Norms moderate causal judgments in cases of double prevention. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 47.   

**O'Neill, K.**, Quillien, T., & Henne, P. (2022). A counterfactual model of causal judgments in double prevention. *Conference on Cognitive Computational Neuroscience*. 


**O'Neill, K.**, Krasich, K., Murray, S., Brockmole, J., Nuthmann, A., & De Brigard, F. (2022). Fixation duration variability increases with mind wandering during scene viewing. *Conference on Cognitive Computational Neuroscience*. 


Krasich, K., **O'Neill, K.**, & De Brigard, F. (2022). Eye-tracking mental simulation during retrospective causal reasoning. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44.   


**O'Neill, K.**, Henne, P., Pearson, J., & De Brigard, F. (2022). Measuring and modeling confidence in human causal judgment. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 44.   

**O'Neill, K.**, Henne, P., Pearson, J., & De Brigard, F. (2021). Measuring and modeling confidence in human causal judgment. *Workshop on Metacognition in the Age of AI: Challenges and Opportunities, 35th Conference on Neural Information Processing Systems (NeurIPS 2021), Sydney, Australia*.   

Yin, S., **O'Neill, K.**, Brady, T., & De Brigard, F. (2019). The effect of category learning on recognition memory: a signal detection theory analysis. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*.  

Bello, P., **O'Neill, K.**, & Bridewell, W. (2019). Artificial agency requires attention: the case of intentional action. *AAAI Spring Symposium: Towards Conscious AI Systems*. 

**O'Neill, K.**, Bridewell, W., & Bello, P. (2018). Time-based resource sharing in AR-CADIA. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. 

Bello, P., Lovett, A., Briggs, G., & **O'Neill, K.** (2018). An attention-driven model of human causal reasoning. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. 

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## Talks

**O'Neill, K.** (2025) "Rethinking counterfactual and causal sensitivity". Part of the symposium *Understanding and Modeling Causal Judgments: perspectives from philosophy, cognitive science, and economics*. *Philosophy, Politics, and Economics Society*.

**O'Neill, K.** & Fleming, S. (2025) "Metacognition as modal cognition". *Association for the Scientific Study of Consciousness*.

**O'Neill, K.**, Henne, P., Icard, T., Quillien, T., & De Brigard, F. (2023) "Disentangling double prevention". *Society for Philosophy and Psychology*.

**O'Neill, K.**, Krasich, K., Murray, S., Brockmole, J., Nuthmann, A., & De Brigard, F. (2023). "Fixation duration variability increases with mind wandering during scene viewing". *Current Issues in Mind-Wandering Research*.

**O'Neill, K.**, Stern, R., & Eva, B. (2023). "Colliding intuitions about causeless correlations: an investigation of human reasoning errors in collider causal structures." *Southern Society for Philosophy and Psychology*.

Henne, P. & **O'Neill, K.** (2022-2023). "Double prevention, causal judgments, and counterfactuals." *Invited talk for the Causality in Cognition Lab, Stanford; Southern Society for Philosophy and Psychology*.

**O'Neill, K.**, Henne, P., Pearson, J., De Brigard, F. (2022). "Measuring and modeling confidence in human causal judgment". *Cognitive Science Society; Society for Philosophy and Psychology; Southern Society for Philosophy and Psychology*.

Krasich, K., **O'Neill, K.**, De Brigard, F. (2022). "Eye tracking mental simulations during retrospective causal reasoning". *Cognitive Science Society; Society for Philosophy and Psychology; Southern Society for Philosophy and Psychology; London Judgment and Decision-Making Seminar*.

**O'Neill, K.** (2022). "Disentangling confidence and causal judgment". *Invited talk for the Consciousness Club, Meta Lab, University College London*.

**O'Neill, K.** (2022). "Confidence & singular causal judgment". *Invited talk for the Cognitive and Neural Computation Lab, University of California Irvine*.

Khoudary, A., **O'Neill, K.**, Faul, L., Murray, S., Smallman, R., De Brigard, F. (2021-2022). Neural differences between internal and external episodic counterfactual thoughts. *Neuromatch Conference 4.0*.

**O'Neill, K.**, Henne, P., Bello, P., Pearson, J., De Brigard, F. (2021). "Degrading causation". *Invited talk at Causal Cognition Lab, UCL; XPhi Europe*.

Bello, P., **O'Neill, K.**, Bridewell, W. (2019). "Artificial agency requires attention: the case of intentional action". In *AAAI Spring Symposium: Towards Conscious AI Systems*.

**O'Neill, K.**, Bridewell, W., Bello, P. (2018) "Time-based resource sharing in ARCA-DIA". *40th Annual Meeting of the Cognitive Science Society*.

**O'Neill, K.**, Bringsjord, S. "Solving the lottery paradox in a cognitive calculus". (2016) *International Association for Computing and Philosophy*.

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**Poster  
Presentations**

**O'Neill, K.**, Henne, P., Quillien, T., Icard, T., & De Brigard, F. (2025). Norms moderate causal judgments in cases of double prevention. *Cognitive Science Society*.

Miceli, K., Van Rooy, N., **O'Neill, K.**, & De Brigard, F. (2024). "Causation on a continuum: no normality effects on causal judgments." *Cognitive Science Society; European Society for Philosophy & Psychology*.

Murray, S., **O'Neill, K.**, Bridges, J., Sytsma, J., & Irving, Z. (2023). "The role of character information in judgments of blame." *Society for Philosophy and Psychology*.

Fernández-Miranda, G., **O'Neill, K.**, Stanley, M., Kushnir, T., & De Brigard, F. (2023). "The influence of perceived control on forgiveness". *Preconference on Justice and Morality, Society for Personality and Social Psychology*.

Krasich, K., Simmons, C., **O'Neill, K.**, Giattino, C.M., Sinnott-Armstrong, W., De Brigard, F., Mudrik, L., & Woldorff, M.G. (2022). "Prestimulus alpha oscillatory activity interacts with evoked recurrent processing to facilitate conscious visual perception." *Society for Neuroscience*.

**O'Neill, K.**, Quillien, T., Henne, P. (2022). "A counterfactual model of causal judgments in double prevention". *Conference on Cognitive Computational Neuroscience*.

**O'Neill, K.**, Krasich, K., Murray, S., Brockmole, J., Nuthmann, A., De Brigard, F. (2022). "Fixation duration variability increases with mind wandering during scene viewing". *Conference on Cognitive Computational Neuroscience*.

Khoudary, A., **O'Neill, K.**, Faul, L., Murray, S., Smallman, R., De Brigard, F. (2022). "Neural differences between internal and external episodic counterfactual thoughts". *Cognitive Neuroscience Society Annual Meeting*.

**O'Neill, K.**, Henne, P., Bello, P., Pearson, J., De Brigard, F. (2021). "Measuring and modeling confidence in human causal judgment". *Workshop on Metacognition in the Age of AI: Challenges and Opportunities, 35th Conference on Neural Information Processing Systems (NeurIPS 2021), Sydney, Australia*.

**O'Neill, K.**, Henne, P., Bello, P., Pearson, J., De Brigard, F. (2021). "Confidence effects on causal judgment". *Psychonomics*.

**O'Neill, K.**, Henne, P., Bello, P., Pearson, J., De Brigard, F. (2021). "Degrading causation". *Society for Philosophy and Psychology Annual Meeting*.

Khoudary, A., Hanna, E., **O'Neill, K.**, Iyengar, V., Clifford, S., Cabeza, R., De Brigard, F., Sinnott-Armstrong, W. (2021). "A functional neuroimaging investigation of moral foundations theory". *Society for Philosophy and Psychology Annual Meeting; 2020 meeting of the Cognitive Neuroscience Society*.

Smith, A., **O'Neill, K.**, Smilek, D., Seli, P. (2019) "On the utility of the dynamic framework of mind wandering". *Psychonomics*.

Yin, S., **O'Neill, K.**, Brady, T., De Brigard, F. (2019) "The effect of category learning on recognition memory: a signal detection theory analysis". *41st Annual Meeting of the Cognitive Science Society*.

Lovett, A., Briggs, G., **O'Neill, K.**, Bello, P. (2018). "Strategic deployment of attention in online causal judgment: a computational model". *Journal of Vision*, 18(10),

741-741.

Bello, P., Lovett, A., Briggs, G., **O'Neill, K.** (2018) "An attention-driven model of human causal reasoning". *40th Annual Meeting of the Cognitive Science Society*.

<b>Teaching</b>	<b>Coursework</b>	
	<i>Entering Mentoring Series</i>	2022
	<i>Certificate in College Teaching</i>	2018–2021
	<b>Teaching Assistant</b>	
	<i>PSY482S: Psychology of Imagination</i> — Dr. Tamar Kushnir, Duke	Fall 2021
	<i>PSY204L: Research Methods &amp; Statistics</i> — Dr. Angela Vieth, Duke	Spring 2021
	<i>PSY102: Cognitive Psychology</i> — Dr. Ruth Day, Duke	Fall 2020
	<i>Neuromatch Academy</i> — pod-089-solid-firefly	Summer 2020
	<b>Guest Lecturer</b>	
	<i>Computational Modeling,</i>	Spring 2023
<b>Mentorship</b>	<i>Moral Judgment</i> — Cognitive Neuroscience Research Internship, Duke	Fall 2022
	<i>Are Humans Rational?</i> — Dr. Selmer Bringsjord, RPI	Fall 2016 – Spring 2017
	<i>Intro To Logic</i> — Dr. Selmer Bringsjord, RPI	Fall 2016 – Spring 2017
	<b>Kaylee Miceli, Nina Van Rooy</b>	2024
	<i>Causation on a continuum: no normality effects on causal judgments</i> Duke University	
	<b>Morgan Biele</b>	2022
	<i>Mental images guide counterfactual and causal thinking across development</i> Duke University	
	<b>Sara Rose Shannon</b>	2022
	<i>Assessing the plausibility of unconscious arithmetic</i> Duke University	
	<b>Mya Harris, Anthony Salgado</b>	2022
	<i>The memory basis of norm effects on causal judgment</i> Duke University	
	<b>Yuleika Martinez Castillo</b>	2022
	<i>R for data science</i> Duke University	
	<b>Gabriela Fernández Miranda</b>	2021-2022
	<i>Memory, forgiveness, and future thinking</i> Duke University	
	<b>Ari Khoudary</b>	2020-2021
	<i>A functional neuroimaging investigation of moral foundations theory</i> Duke University	
	<b>Jason Chen, Corey Elowski, Ari Khoudary, Cambria Revsine</b>	2020
	<i>Predicting fMRI responses: a machine learning approach</i>	

Neuromatch Academy

**Georgia Hadjis, Anna Dorokhova,  
Alex Vargas, Wen Jian, Sarah Hanson**

2020

*Predicting social task performance and brain activities based on emotional task and relational task: an analysis of the HCP dataset*

Neuromatch Academy

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<b>Awards/ Honors</b>	Charles Lafitte Foundation Graduate Travel Award	2024
	Duke IBRC Research Mini-Grant	2022
	Cognitive Science Society Student Travel Grant	2022
	Southern Society for Philosophy & Psychology Travel Award	2022
	NSF Graduate Research Fellowship Honorable Mention	2019
	Duke Chancellors Scholars Fellowship	2018
	Undergraduate Research Fellowship	2015–2017
	Rensselaer Leadership Award	2014–2017
	Mona & Edward Zander '68 Scholarship	2014–2017
	Dean's List/Dean's Honor List	2014–2017

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<b>Projects</b>	<b>SpikingNeuralNets.jl</b> : A system for simulating systems of spiking neural networks
	<b>ARCADIA</b> : A computational framework for attention-centered cognitive modeling
	<b>MetaProver</b> : Automated logical and meta-logical reasoning via analytic tableaux
	<b>OSCAR</b> : A restoration of John Pollock's natural deduction theorem prover

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<b>Skills</b>	<b>Programming</b>
	R, Stan, Python, HTML/CSS/Javascript, Julia, MATLAB, Unix, Git, L <sup>A</sup> T <sub>E</sub> X
	<b>Data Collection/Analysis</b>
	Behavioral, fMRI, eye tracking data
	Mixed-effect modeling, Bayesian statistics, multivariate statistics
	<b>Computation</b>
	Cognitive modeling, ML, symbolic AI, NLP, Parallel/High-Performance Computing
	<b>Software Engineering</b>
	Software development, verification, and visualization
	<b>Languages</b>
	German (intermediate)

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<b>Service</b>	<b>UCL Centre for Behavioural Data Science</b>	2024–present
	Lecturer, Member	
	<b>Cognitive Neuroscience Research Internship</b>	2022–2024
	Lecturer, Research Mentor	
	<b>Duke Center for Cognitive Neuroscience</b>	2022
	Graduate Representative	
	<b>Duke Institute for Brain Sciences Methods Meetings</b>	2020–Present
	Founder	
	<b>Duke Philosophy of Neuroscience Journal Club</b>	2020–Present
	Co-Founder	
	<b>Duke University Neuroscience Experience (DUNE)</b>	2020
	Volunteer	
	<b>Duke Psychology &amp; Neuroscience</b>	2021–2022

Panelist, Graduate School Information Session

**Duke Cognitive Neuroscience Admitting Program**

2019-2022

Recruitment

**Cognitive Science, Cognitive Systems Research, Erkenntnis, International Conference on Machine Learning, Journal of Experimental Psychology: General, Open Mind, Memory & Cognition, Philosophical Psychology**

Ad-Hoc Reviewing

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<b>Affiliations</b>	Association for the Advancement of Artificial Intelligence (AAAI)
<b>Past &amp; Present</b>	Cognitive Science Society (CSS)
	International Association of Computing and Philosophy (IACAP)
	Psychonomic Society (PS)
	Society for Philosophy and Psychology (SPP)
	Southern Society for Philosophy and Psychology (SSPP)

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<b>References</b>	<b>Prof. Stephen Fleming</b> <i>Professor</i> Cognitive Neuroscience Department of Experimental Psychology University College London <a href="mailto:stephen.fleming@ucl.ac.uk">stephen.fleming@ucl.ac.uk</a> <a href="https://metacoglab.org">https://metacoglab.org</a>	<b>Dr. Felipe De Brigard</b> <i>Associate Professor</i> Philosophy Psychology & Neuroscience Center for Cognitive Neuroscience Duke University <a href="mailto:felipe.debrigard@duke.edu">felipe.debrigard@duke.edu</a> <a href="https://imclab.org">https://imclab.org</a> (919) 660-3028
	<b>Dr. John Pearson</b> <i>Associate Professor</i> Neurobiology Biostatistics & Bioinformatics Electrical and Computer Engineering Psychology & Neuroscience Center for Cognitive Neuroscience Duke University <a href="mailto:john.pearson@duke.edu">john.pearson@duke.edu</a> <a href="https://pearsonlab.github.io">https://pearsonlab.github.io</a> (919) 613-8338	