


Kevin G. O'Neill, Ph.D.

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Experience	Postdoctoral Research Associate MetaLab — Prof. Stephen Fleming University College London	2024–present
	Computer Scientist ARCADIA Project — Dr. Paul Bello U.S. Naval Research Laboratory	2017–2018
	Undergraduate Researcher Rensselaer Artificial Intelligence and Reasoning (RAIR) Laboratory — Dr. Selmer Bringsjord Rensselaer Polytechnic Institute	2015–2017
Education	Duke University Imagination and Modal Cognition Laboratory — Dr. Felipe De Brigard Pearson Laboratory — 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
	Rensselaer Polytechnic Institute <i>Bachelor of Science</i> , Cognitive Science and Computer Science	2014–2017 GPA: 3.97
Manuscripts Under Review/ In Preparation	O'Neill, K. , Lagnado, D., & Fleming, S. M. (In preparation). Metacognition as modal cognition.	
	O'Neill, K. (In preparation). A distributional perspective on counterfactual and causal sensitivity.	
	Łuczak, W., O'Neill, K. , & Fleming, S. M. (Under review). Confidence is detection-like in high-dimensional spaces. <i>arXiv</i> . 	
	O'Neill, K. , 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., O'Neill, K. , & 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. *, O'Neill, K. , 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 perspective 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. 




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*. 

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.*

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*.

Teaching	Coursework	
	<i>Entering Mentoring Series</i>	2022
	<i>Certificate in College Teaching</i>	2018–2021
	Teaching Assistant	
	<i>PSY482S: Psychology of Imagination</i> — Dr. Tamar Kushnir, Duke	Fall 2021
	<i>PSY204L: Research Methods & 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
	Guest Lecturer	
	<i>Cognition</i> — Prof. Ulrike Hahn, Birkbeck, University of London	Summer 2025
Mentorship	<i>Computational Modeling,</i>	Spring 2023,
	<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
	Kaylee Miceli, Nina Van Rooy	2024
	<i>Causation on a continuum: no normality effects on causal judgments</i>	
	Duke University	
	Morgan Biele	2022
	<i>Mental images guide counterfactual and causal thinking across development</i>	
	Duke University	
Mentorship	Sara Rose Shannon	2022
	<i>Assessing the plausibility of unconscious arithmetic</i>	
	Duke University	
	Mya Harris, Anthony Salgado	2022
	<i>The memory basis of norm effects on causal judgment</i>	
	Duke University	
	Yuleika Martinez Castillo	2022
	<i>R for data science</i>	
	Duke University	
	Gabriela Fernández Miranda	2021-2022
Mentorship	<i>Memory, forgiveness, and future thinking</i>	
	Duke University	
	Ari Khoudary	2020-2021
	<i>A functional neuroimaging investigation of moral foundations theory</i>	
	Duke University	

Jason Chen, Corey Elowski, Ari Khoudary, Cambria Revsine 2020
Predicting fMRI responses: a machine learning approach
 Neuromatch Academy

Georgia Hadjis, Anna Dorokhova, 2020
Alex Vargas, Wen Jian, Sarah Hanson
Predicting social task performance and brain activities based on emotional task and relational task: an analysis of the HCP dataset
 Neuromatch Academy

Awards/ Honors	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

Projects

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

Skills

Programming
 R, Stan, Python, HTML/CSS/Javascript, Julia, MATLAB, Unix, Git, L^AT_EX

Data Collection/Analysis
 Behavioral, fMRI, eye tracking data
 Mixed-effect modeling, Bayesian statistics, multivariate statistics

Computation
 Cognitive modeling, ML, symbolic AI, NLP, Parallel/High-Performance Computing

Software Engineering
 Software development, verification, and visualization

Languages
 German (intermediate)

Service

UCL Centre for Behavioural Data Science 2024–present
 Lecturer, Member

Cognitive Neuroscience Research Internship 2022–2024
 Lecturer, Research Mentor

Duke Center for Cognitive Neuroscience 2022
 Graduate Representative

Duke Institute for Brain Sciences Methods Meetings 2020–Present
 Founder

Duke Philosophy of Neuroscience Journal Club 2020–Present
 Co-Founder

Duke University Neuroscience Experience (DUNE) 2020

Volunteer	
Duke Psychology & Neuroscience	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	

Affiliations	Association for the Advancement of Artificial Intelligence (AAAI)
Past & Present	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)

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