

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
	Federal Work Study Rensselaer Department of Cognitive Science	2014–2017
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 Dissertation: 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. (In preparation). A distributional perspective on counterfactual and causal sensitivity.	
	Luczak, W., O'Neill, K. , & Fleming, S. (Under review). Confidence is detection-like in high-dimensional spaces. <i>arXiv</i> .  	
	Quillien, T., O'Neill, K. , & Henne, P. (Under review). A counterfactual explanation for recency effects in double prevention scenarios: commentary on Thanawala and Erb (2024). 	
	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. 	
	Geddert, R. [*] , Madlon-Kay, S. [*] , O'Neill, K. , Pearson, J., & Egner, T. (Under review). Modeling of control over task-switching and cross-task interference supports	

a two-dimensional model of cognitive stability and flexibility.

O’Neill, K., Henne, P., Quillien, T., Icard, T., & De Brigard, F. (In preparation). Disentangling double prevention. 🌸 🔍

Murray, S., Henne, P., **O’Neill, K.**, Wang, J., & De Brigard, F. (Under review). What you foresee isn’t what you forget: No evidence for the influence of epistemic states on causal judgments for abnormal negligent behavior.

**Journal
Papers**

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., 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 ARCADIA. *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., 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*.

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 ARCADIA”. *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*.

Poster Presentations

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>Computational Modeling</i> ,	Spring 2023
Mentorship	<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
	Morgan Biele	2022
	<i>Mental Images Guide Counterfactual and Causal Thinking across Development</i> Duke University	
	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
	<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
	<i>Predicting fMRI Responses: a Machine Learning Approach</i> Neuromatch Academy	
	Georgia Hadjis, Anna Dorokhova,	2020
	Alex Vargas, Wen Jian, Sarah Hanson	
	<i>Predicting Social Task Performance and Brain Activities Based on Emotional Task and Relational Task: an Analysis of the HCP Dataset</i> 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
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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	
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Skills	Programming R, Stan, Python, HTML/CSS, Javascript, Julia, MATLAB, Unix, Git, L ^A T _E X Data Collection/Analysis Behavioral, fMRI, eye tracking data Mixed-effect modeling, Bayesian statistics, multivariate statistics Artificial Intelligence Cognitive modeling, ML, Symbolic AI, NLP, Parallel/High-Performance Computing Software Engineering Software development, verification, and visualization Languages German (intermediate)	
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Service	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, International Conference on Machine Learning, Journal of Experimental Psychology: General, 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	Dr. Felipe De Brigard <i>Associate Professor</i> Philosophy Psychology & Neuroscience Center for Cognitive Neuroscience Duke University felipe.debrigard@duke.edu (919) 660-3028
	Dr. John Pearson <i>Assistant Professor</i> Neurobiology Biostatistics & Bioinformatics Electrical and Computer Engineering Psychology & Neuroscience Center for Cognitive Neuroscience Duke University john.pearson@duke.edu (919) 613-8338	