Kevin G. O'Neill

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Education

Duke University Fall 2018 - Present
Ph.D., Psychology & Neuroscience (anticipated 2024) GPA: 3.96
M.A., Psychology & Neuroscience GPA: 3.96
Imagination and Modal Cognition Laboratory — Dr. Felipe De Brigard
Pearson Laboratory — Dr. John Pearson

Rensselaer Polytechnic Institute Class of 2017
Bachelor of Science, Cognitive Science and Computer Science GPA: 3.97

Work Experience

Computer Scientist 2017–2018
ARCADIA Project — Paul Bello
U.S. Naval Research Laboratory

Undergraduate Researcher 2015–2017
Rensselaer Artificial Intelligence and Reasoning
(RAIR) Laboratory — Dr. Selmer Bringsjord

Federal Work Study 2014–2017
Rensselaer Department of Cognitive Science

Manuscripts Under Review/ In Preparation

O'Neill, K., Henne, P., Pearson, J., & De Brigard, F. (Under review). Modeling confidence in causal judgments.

Krasich, K., **O'Neill, K.**, Murray, S., Nuthmann, A., & De Brigard, F. (Under review). A mind lively and at ease: What fixation durations say about the extent of visual processing.

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

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.

Krasich, K., **O'Neill, K.**, & De Brigard, F. (Under review). Eye-tracking mental simulation during retrospective causal reasoning.

Bringsjord, S., & **O'Neill, K.** (In Press). Third-millenium computational logic. *Minds and Machines.*

Journal Papers

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. and Bringsjord, S. and Sen, A. and Paquin, J. C. and **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

Henne, P. & **O'Neill, K.** (2022). "Double Prevention, Causal Judgments, and Counterfactuals." *Invited talk for the Causality in Cognition Lab, Stanford.*

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

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

Entering Mentoring Series	2022
Certificate in College Teaching	2018-2021

Teaching Assistant

PSY482S: Psychology of Imagination — Dr. Tamar Kushnir, Duke	Fall 2021
PSY204L: Research Methods & Statistics — Dr. Angela Vieth, Duke	Spring 2021
PSY102: Cognitive Psychology — Dr. Ruth Day, Duke	Fall 2020
Neuromatch Academy — pod-089-solid-firefly	Summer 2020

Guest Lecturer

Moral Judgment — Cognitive Neuroscience Research Internship, Duke — Fall 2022
Are Humans Rational? — Dr. Selmer Bringsjord, RPI — Fall 2016 - Spring 2017
Intro To Logic — Dr. Selmer Bringsjord, RPI — Fall 2016 - Spring 2017

Mentorship

Morgan Biele — 2022
Mental Images Guide Counterfactual and Causal Thinking across Development
Duke University

Sara Rose Shannon — 2022
Assessing the Plausibility of Unconscious Arithmetic
Duke University

Mya Harris, Anthony Salgado — 2022
The Memory Basis of Norm Effects on Causal Judgment
Duke University

Yuleika Martinez Castillo — 2022
R for Data Science
Duke University

Gabriela Fernández Miranda — 2021-2022
Memory, Forgiveness, and Future Thinking
Duke University

Ari Khoudary — 2020-2021
A Functional Neuroimaging Investigation of Moral Foundations Theory
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

Duke IBRC Research Mini-Grant	2022
Cognitive Science Society Student Travel Grant	2022
Southern Society for Philosophy & Psychology Travel Award	2022
NSF GRFP 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
Python, R, C/C++, Java/Javascript, Clojure/Scheme/Lisp, Julia, MATLAB, HTML/CSS, Prolog, Unix, Git, LaTeX
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)

Service

Cognitive Neuroscience Research Internship 2022
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
Cognitive Science, **Duke Psychology & Neuroscience** 2021-2022
Panelist, Graduate School Information Session
Duke Cognitive Neuroscience Admitting Program 2019-2022
Recruitment
Cognitive Science, **Journal of Experimental Psychology: General**, **Cognitive Systems Research**
Ad-Hoc Reviewing

Affiliations Past & Present

Association for the Advancement of Artificial Intelligence (AAAI)
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

Felipe De Brigard, Ph.D.
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Psychology & Neuroscience
Center for Cognitive Neuroscience
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Paul Bello, Ph.D.
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Intelligent Systems
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Information Technology Division
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John Pearson, Ph.D.
Assistant Professor
Biostatistics & Bioinformatics
Psychology & Neuroscience
Electrical and Computer Engineering
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