Kevin G. O'Neill

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Education

Duke University Fall 2018 - Present
Ph.D., Psychology & Neuroscience (anticipated 2023) 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–Present
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. (In preparation). Modeling confidence in human causal judgment.

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

Khoudary, M., **O'Neill, K.**, Faul, L., Murray, S., Smallman, R., & De Brigard, F. (In preparation). Neural differences in dispositional versus situational-based counterfactual thoughts.

Khoudary, M., 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.

Henne, P., & **O'Neill, K.** (Under review). Double prevention and counterfactual thinking.

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 simulations during retrospective causal reasoning.

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

Journal Papers

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., 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., Pearson, J., De Brigard, F. (2022). "Measuring and modeling confidence in human causal judgment". *Southern Society for Philosophy and*

Psychology.

Krasich, K., **O'Neill, K.**, De Brigard, F. (2022). "Eye tracking mental simulations during retrospective causal reasoning". *Southern Society for Philosophy and Psychology.*

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

O'Neill, K., Henne, P., Bello, P., Pearson, J., De Brigard, F. (2021). "Degrading causation". *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

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, M., 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.*

Khoudary, M., Hanna, E., **O'Neill, K.**, Iyengar, V., Clifford, S., Cabeza, R., De Brigard, F., Sinnott-Armstrong, W. (2020). "A functional neuroimaging investigation of moral foundations theory". *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

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

Are Humans Rational? — Dr. Selmer Bringsjord, RPI — Fall 2016 - Spring 2017
Intro To Logic — Dr. Selmer Bringsjord, RPI — Fall 2016 - Spring 2017

Mentorship

Maria Khoudary — 2020-2021
A Functional Neuroimaging Investigation of Moral Foundations Theory
Duke University

Jason Chen, Corey Elowski, Maria Khoudary, Cambria Revsine — 2020
Predicting fMRI Responses: a Machine Learning Approach
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

Awards/ Honors

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	**Duke Center for Cognitive Neuroscience** Graduate Representative	2022
	Duke Institute for Brain Sciences Methods Meetings Founder	2020–Present
	Duke Philosophy of Neuroscience Journal Club Co-Founder	2020–Present
	Duke University Neuroscience Experience (DUNE) Volunteer	2020
	Cognitive Science, **Cognitive Systems Research** Ad-Hoc Reviewing	
	Duke Psychology & Neuroscience Panelist, Graduate School Information Session	
	Duke Cognitive Neuroscience Admitting Program Recruitment	

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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John Pearson, Ph.D.
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