Kevin G. O'Neill

July 2022
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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. (Under review). 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.

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

Henne, P., & **O'Neill, K.** (2022). Double Prevention, Causal Judgments, and Coun-

terfactuals. *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., 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 mod-

eling 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, M., **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

Khoudary, M., **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, 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

Yuleika Martinez Castillo — 2022
R for Data Science
Duke University

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, — 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

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

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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 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, **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

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Center for Cognitive Neuroscience
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Paul Bello, Ph.D.
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