

THE ROLE OF VARIABILITY IN LEARNING GENERALIZATION: A COMPUTATIONAL  
MODELING APPROACH

Thomas E. Gorman

Submitted to the faculty of the University Graduate School  
in partial fulfillment of the requirements  
for the degree  
Doctor of Philosophy  
in the Cognitive Science Program and  
Department of Psychological and Brain Sciences,  
Indiana University  
September 2024

Accepted by the Graduate Faculty, Indiana University, in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy.

Doctoral Committee

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Robert L. Goldstone, Ph.D.

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Robert M. Nosofsky, Ph.D.

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Peter M. Todd, Ph.D.

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Michael N. Jones, Ph.D.

May 28th, 2024

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## Acknowledgements

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## Introduction

### Varied Training and Generalization

Varied training has been shown to influence learning in a wide array of different tasks and domains, including categorization (Hahn et al., 2005; Maddox & Filoteo, 2011; Morgenstern et al., 2019; Nosofsky et al., 2019; Plebanek & James, 2021; Posner & Keele, 1968), language learning (Brekelmans et al., 2022; Jones & Brandt, 2020; Perry et al., 2010; Twomey et al., 2018; Wonnacott et al., 2012), anagram completion (Goode et al., 2008), perceptual learning (Lovibond et al., 2020; Manenti et al., 2023; Robson et al., 2022; Zaman et al., 2021), trajectory extrapolation (Fulvio et al., 2014), cognitive control tasks (Moshon-Cohen et al., 2024; Sabah et al., 2019), associative learning (Fan et al., 2022; Lee et al., 2019; Livesey & McLaren, 2019; Prada & Garcia-Marques, 2020; Reichmann et al., 2023), visual search (George & Egner, 2021; Gonzalez & Madhavan, 2011; Kelley & Yantis, 2009), voice identity learning (Lavan et al., 2019), face recognition (Burton et al., 2016; Honig et al., 2022; Menon et al., 2015), the perception of social group heterogeneity (Gershman & Cikara, 2023; Konovalova & Le Mens, 2020; Linville & Fischer, 1993; Park & Hastie, 1987), simple motor learning (Braun et al., 2009; Kerr & Booth, 1978; Roller et al., 2001; Willey & Liu, 2018), sports training (Breslin et al., 2012; Green et al., 1995; North et al., 2019), and complex skill learning (Hacques et al., 2022; Huet et al., 2011; Seow et al., 2019). See Czyż (2021) or Raviv et al. (2022) for more detailed reviews.



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## Curriculum Vitae

### Education

2017 - May 2024

**Indiana University - Bloomington**

PhD in Psychology and Cognitive Science

Dissertation: *The Role of Variability in Learning Generalization: A Computational Modeling Approach*

2011 - 2015

**University of Wisconsin - Madison**

B.Sc. in Psychology

Thesis: *Short-term mindfulness intervention reduces the negative attentional effects associated with heavy media multitasking*

### Journal Articles and Conference Proceedings

- **Gorman**, T. E., & Goldstone, R. L. (2022). An instance-based model account of the benefits of varied practice in visuomotor skill. *Cognitive Psychology*, 137, 101491.
- Kattner, F., Cochrane, A., Cox, C. R., **Gorman**, T. E., & Green, C. S. (2017). Perceptual learning generalization from sequential perceptual training as a change in learning rate. *Current Biology*, 27(6), 840-846.
- **Gorman**, T.E., & Green, C.S. (2016). Short-term mindfulness intervention reduces the negative attentional effects associated with heavy media multitasking. *Scientific Reports*, 6.

### Reviews and Book Chapters

- **Gorman**, T.E., Gentile, D.A., & Green, C.S. Problem gaming: a short primer (2018). *American Journal of Play*, 10 (3), 309-327
- **Gorman**, T.E., & Green, C.S. (2017). Young minds on video games. In *Cognitive development in digital contexts*. 121-143. Academic Press.
- Green, C. S., **Gorman**, T., & Bavelier, D. (2016). Action Video-Game Training and Its Effects on Perception and Attentional Control. In *Cognitive Training* (pp. 107-116). Springer International Publishing.

## **Presentations**

- Half Day Tutorial on Measuring Mindfulness Behaviorally: Onsite/Online Data Collection with jsPsych - Cognitive Science Conference – 2018
- Does interleaving go the distance? Exploring the effect of dissimilarity on interleaved category learning - Math Psych/ICCM 2018
- Short term mindfulness intervention reduces cognitive deficits in heavy media multi-taskers - Undergraduate Research Symposium – UW-Madison – April 16th, 2015

## **Awards**

IU-Bloomington – Development Training Grant – Fall 2019

IU-Bloomington - Steinmetz Summer Research Award - 2018

UW-Madison - Undergraduate Research Scholar Award – 2015

UW-Madison - Hildale Undergraduate/Faculty Research Fellowship – 2014

## **Ad-hoc Reviewer**

Cognitive Science

Journal of Experimental Psychology: General

Journal of Experimental Psychology: Human Perception and Performance

## **Conferences**

Cognitive Science Conference - 2021

Cognitive Science Conference - 2018

Mathematical Psychology & ICCM 2018

Boston Meeting on Methods in Cognitive Training (NSF Sponsored) – May 2017