

Russell Richie

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- EMPLOYMENT** University of Pennsylvania, Postdoctoral fellow, 2018-
Wharton School of the University of Pennsylvania, Postdoctoral fellow, 2017-2018
Temple University, Infant Lab, Co-Lab Manager, 2009-2011
Yale University, Infant Cognition Center, Intern, 2008
- EDUCATION** *Doctor of Philosophy*, Developmental Psychology, 2017
Cognitive Science Certificate
Neurobiology of Language Certificate
University of Connecticut, Storrs, CT
Advisors: Dr. Marie Coppola & Dr. Whitney Tabor
Doctoral Thesis: *Conventionalization and reduction in communication:
An experimental and computational modeling investigation*
Masters Thesis: *Modeling the emergence of natural language lexicons*
- Linguistics Society of America Summer Institutes
Ann Arbor, MI, 2013
Boulder, CO, 2011
- Bachelor of Arts*, Psychology
Bates College, Lewiston, ME, 2009
- HONORS & AWARDS** CT Institute for Brain and Cognitive Sciences Graduate Summer Fellowship, 2016
EvoLang Conference Runner-up for Best Poster, 2016
Paula Menyuk Travel Award, BUCLD 2013
Society for Language Development Travel Award, 2013
Cognitive Science Conference Computational Modeling Prize, 2013
Artificial Intelligence Journal Travel Award, 2013
Linguistics Society of America Summer Institute Fellowship, 2013
NSF IGERT Fellow, 2012-2014
University of Connecticut Outstanding Scholar Fellowship, 2011-2012, 2014-2016
- GRANTS** UConn IGERT Innovation Incentive Award, Summer 2013, \$2000
UConn IGERT Innovation Incentive Award, Fall 2013, \$2500
- PAPERS** Giovannone, N., Fitzroy, A.B., **Richie, R.**, Jasinska, K., Wood, S., Landi, N., Coppola, M., Breen, M. (in prep). ERP evidence for amodal indices of phrase boundary processing in ASL and English.
- Singh, M., **Richie, R.**, & Bhatia, S. (in prep). Representing and predicting everyday behavior.
- Richie, R.**, & Verheyen, S. (in prep). Using cross-validation to select dimensionality in multidimensional scaling.

Richie, R., & Bhatia, S. (under review). Similarity judgment within and across categories: A comprehensive model comparison. PsyArXiv preprint: <https://psyarxiv.com/5pa9r/>

Zhao, W.J., **Richie, R.**, & Bhatia, S. (revise/resubmit). Process and content in decisions from memory. PsyArXiv preprint: <https://psyarxiv.com/nwxs2>

Richie, R.*, Hall, M.*, Cho, P.W., & Coppola M. (in press). Converging evidence: Enhanced conventionalization of gestural referring expressions in richly-connected networks. *Language Dynamics and Change*. * Equal contribution

Richie, R., & Bhatia, S. (accepted) Knowledge in everyday judgment and decision making: An introduction to the distributed semantics approach. In R. Boyd & M. Dehghani (Eds.) *The Atlas of Language Analysis in Psychology*. Guilford Press. <https://psyarxiv.com/qm27p>

Richie, R., White, B., Hout, M.C., & Bhatia, S. (2020). The spatial arrangement method of measuring similarity can capture high-dimensional, semantic structures. *Behavior Research Methods*. PsyArXiv preprint: <https://psyarxiv.com/qm27p>

Richie, R., Zou, W., & Bhatia, S. (2019). Predicting High-Level Human Judgment Across Diverse Behavioral Domains. *Collabra: Psychology*, 5(1), 50 PsyArXiv preprint: <https://psyarxiv.com/g9j83>

Bhatia, S., **Richie, R.**, Zou, W. (2019) Distributed Semantic Representations for Modeling Human Judgment. *Current Opinion in Behavioral Sciences*, 29, 31-36.

Richie, R. (2016). Functionalism in the lexicon: Where is it, and how did it get there? In G. Jarema, G. Libben, & V. Kuperman (Eds.), *Thematic Issue of The Mental Lexicon: New Questions for the Next Decade*, 11(3), 429-466. Amsterdam: John Benjamins. doi 10.1075/ml.11.3.05ric. PsyArXiv preprint: <https://psyarxiv.com/xuzvd/>

Richie, R., Yang, C., & Coppola, M. (2014). Modeling the emergence of natural language lexicons in homesign systems. *Topics in Cognitive Science*, 6(1), 183-195.

Roseberry, S., **Richie, R.**, Hirsh-Pasek, K., Golinkoff, R.M., Shipley, T. (2011). Babies catch a break: 7- to 9-month-olds track transitional probabilities in continuous dynamic events. *Psychological Science*, 22(11), 1422-1424.

REFEREED PROCEEDINGS

Richie, R., & Verheyen, S. (in press). Using cross-validation to select dimensionality in multidimensional scaling. *Proceedings of the 18th Annual Meeting of the International Conference on Cognitive Modeling*.

Zhao, W.J., **Richie, R.**, & Bhatia, S. (in press). Process and content in decisions from memory. *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.

Richie, R., White, B., Hout, M.C., & Bhatia, S. (in press). The spatial arrangement method of measuring similarity can capture high-dimensional, semantic structures. *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*.

Richie, R., Zou, W., & Bhatia, S. (2019). Distributional semantic representations predict high-level human judgment in seven diverse behavioral domains. *Proceed-*

ings of the 41st Annual Conference of the Cognitive Science Society (pp 2654-2660)

Hall M., **Richie R.** & Coppola M. (2016). The impact of communicative network structure on the conventionalization of referring expressions in gesture. In S.G. Roberts, C. Cuskley, L. McCrohon, L. Barcelo-Coblijn, O. Feher & T. Verhoeve (eds.) *The Evolution of Language: Proceedings of the 11th International Conference (EVLANG11)*. Available online: <http://evolang.org/neworleans/papers/134.html>

Tabor, W., **Richie, R.**, Dankowicz, H. (2014). Language emergence in the laboratory: A method suitable to dynamical systems analysis. In E. A. Cartmill, S. Roberts, H. Lynn, & H. Cornish (Ed.) *Proceedings of the 10th Biennial Evolution of Language Conference (EVLANG10)*, Vienna, Austria.

Richie, R., Coppola, M., & Yang, C. (2014). Emergence of natural language lexicons: Empirical and modeling evidence from homesign and Nicaraguan Sign Language. *Proceedings of the 38th Boston University Conference in Language Development*, Boston, MA.

Richie, R., Yang, C., & Coppola, M. (2014). Modeling the emergence of lexicons in homesign systems. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.), *Proceedings of the 35th Annual Cognitive Science Society Conference* (pp 1223-1228), Berlin, Germany.

Richie, R., Fanghella, J., & Coppola, M. (2013). Emergence of lexicons in family-based homesign systems in Nicaragua. In L. Geer (Ed.) *Proceedings of the 13th annual Texas Linguistics Society Meeting*, pp. 55-67, Austin, TX.

TALKS

Richie, R., & Bhatia, S. (2020). Similarity judgment within and across categories: A comprehensive model comparison. Paper to be presented at Semantic Spaces at the Intersection of NLP, Physics, and Cognitive Science (SemSpace2020).

Richie, R., Hall, M., Coppola, M., Tabor, W. (2017). *Conventionalization and reduction in an emerging communication system: An experimental and computational modeling investigation*. Paper to be presented at the 30th annual CUNY Conference on Human Sentence Processing, Cambridge, MA, USA.

Tabor, W., **Richie, R.**, Dankowicz, H. (2014). *Language emergence in the laboratory: A method suitable to dynamical systems analysis*. Presentation to be presented at the 10th Biennial Evolution of Language Conference, Vienna, Austria.

Richie, R., Yang, C., & Coppola, M. (2013). *Modeling the emergence of lexicons*. Paper presented at the 38th Annual Boston University Conference on Language Development, Boston, MA.

Tabor, W., **Richie, R.**, Brozdowski, C., Dankowicz, H. (2013). *Human coordination in a group number game exhibits physics-like energy loss and symmetry breaking*. Paper presented at the Workshop on Collective Behaviors and Social Dynamics at the 12th European Conference on Artificial Life, Taormina, Italy.

Richie, R., Yang, C., & Coppola, M. (2013). *Modeling the emergence of lexicons in homesign systems*. Paper presented at the 35th Annual Cognitive Science Society Conference, Berlin, Germany.

***This paper received a 2013 Computational Modeling Prize from the Cognitive*

Science Society.

Richie, R., Fanghella, J., Coppola, M. (2012, June). *Emergence of lexicons in family-based homesign systems in Nicaragua*. Paper presented at the 13th Annual Texas Linguistics Society Meeting, Austin, TX.

Roseberry, S., **Richie, R.**, Hirsh-Pasek, K., & Golinkoff, R.M. (2011, March). Babies catch a break: 7- to 9-month-olds track statistical probabilities in continuous, dynamic events. Paper presented in A. Stahl and S. Roseberry (chairs) *Carving events for word learning: Discovering the mechanisms behind infant event segmentation*. The Society for Research in Child Development, Montreal, Canada

POSTERS

Richie, R., & Verheyen, S. (in press). Using cross-validation to select dimensionality in multidimensional scaling. *Poster to be presented at the 18th Annual Meeting of the International Conference on Cognitive Modeling*.

Zhao, W.J., **Richie, R.**, & Bhatia, S. (in press). Process and content in decisions from memory. *Poster to be presented at the 42nd Annual Conference of the Cognitive Science Society*.

Richie, R., White, B., Hout, M.C., & Bhatia, S. (in press). The spatial arrangement method of measuring similarity can capture high-dimensional, semantic structures. *Poster to be presented at the 42nd Annual Conference of the Cognitive Science Society*.

Giovannone, N., Fitzroy, A. B., **Richie, R.**, Jasinska, K., Wood, S., Landi, N., Coppola, M. & Breen, M. (2018, November). Prosodic phrase boundary processing in native signers of ASL. Poster presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA.

Giovannone, N., Fitzroy, A. B., **Richie, R.**, Jasinska, K., Wood, S., Landi, N., Coppola, M. & Breen, M. (2018, October). Prosodic phrase boundary processing in native signers of ASL. Talk presented at the 4th Conference on Experimental and Theoretical Advancements in Prosody, UMass Amherst, Amherst, MA.

Hall, M., **Richie, R.** & Coppola, M. (2016). The Impact Of Communicative Network Structure On The Conventionalization Of Referring Expressions In Gesture. Poster presented at the 11th International Conference on The Evolution of Language (EVLANG11), New Orleans, LA, USA.

***This poster was a runner-up in the conference poster competition (top 10% of posters).*

Richie, R., Kaufmann, S., Tabor, W. (2014, September). *An LSA-based method for estimating word meaning specificity and location in semantic space*. Poster presented at the 9th Annual Mental Lexicon Conference, Niagara-on-the-Lake, Ontario, Canada.

Richie, R., Coppola, M., Wood, S., Jasinska, K., Powers, B., Landi, N., Lillo-Martin, D., & Brentari, D. (2014, April). *Are prosodic representations amodal?: An ERP investigation*. Poster presented at the 5th Annual University of Connecticut Language Fest, Storrs, CT.

Richie, R., & Yang, C. (2013, July). *Elicitation and analytic methods for documenting the lexicons of emerging signed languages*. Poster presented at the 11th

Theoretical Issues in Signed Language Research, London, England.

Richie, R., & Yang, C. (2013, April). *Elicitation and analytic methods for documenting the lexicons of emerging signed languages*. Poster presented at the 4th Annual University of Connecticut Language Fest, Storrs, CT.

Richie, R., Yang, C., Coppola, M. (2013, April). *Modeling the emergence of natural language lexicons*. Poster presented at the 4th Annual University of Connecticut Language Fest, Storrs, CT.

Richie, R., Fanghella, J., Coppola, M. (2012, April). *Emergence of lexicons in family-based homesign systems in Nicaragua*. Poster presented at the 3rd Annual University of Connecticut Language Fest, Storrs, CT.

Richie, R., Roseberry, S., George, N., Hirsh-Pasek, K., Golinkoff, R.M. (2011, March). *Does dynamic event segmentation facilitate word learning in toddlers?* Poster presented at the 4th Annual Inter-Science of Learning Center Student and Post-Doc Conference, Washington, D.C.

Roseberry, S., Hirsh-Pasek, K., **Richie, R.**, & Golinkoff, R.M. (2011, March). *Blicking through video chats: Contingent interactions help toddlers learn language*. Poster presented at the Society for Research in Child Development, Montreal, Canada.

Goksun, T., Ferrara, K., **Richie, R.**, & Hirsh-Pasek, K. (2010, May). *Forces and motion: Exploring children's spatial computation and causal understanding*. Paper presented at the 3rd Annual Inter-Science of Learning Center Student and Post-Doc Conference, Boston, MA.

TEACHING

Guest lecture on NLP applications in marketing, Data and Analysis for Marketing Decisions, Spring 2018, 2019

Co-Instructor of Record, Foundations in Cognitive Science, Spring 2017

TA, Foundations of Research in the Psychological Sciences I (Graduate intro statistics and research methods course), Fall 2016

TA, Foundations in Cognitive Science, Spring 2015 & 2016

Guest lecture, AP Psychology, White Plains High School, Spring 2014

Discussion section leader, General Psychology II (Psych 1103), Spring 2012

Lab section instructor, General Psychology I (Psych 1100), Fall 2011

STUDENT MENTORSHIP

MindCORE, University of Pennsylvania

Jayne Banks, 2020

Berger Research Group, University of Pennsylvania

Aruna Prasad, 2017-2018

Jasmine Lee, 2018

John Hae, 2018

Language Creation Lab, University of Connecticut

Markie Theophile, 2012

Jenna Shaw, 2014

John Gerrity, 2014-2015

Shea Marsella, 2014-2015

Sarah Lodge, 2014-2016

Megan Brown, 2015-2016

Honors projects

Danielle Lamay, Foundations in Cognitive Science, Spring 2017

Elizabeth Gernert, Foundations in Cognitive Science, Spring 2017

Odia Kane, Foundations in Cognitive Science, Spring 2017

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| WORKSHOPS | Instructor, Python Data Analysis, UCONN, January 2019 Instructor, Python Data Analysis, UCONN, January 2017 Co-instructor, Introduction to Python, January 2014 Co-instructor, Zipf's Law and Related Power Laws in Language, January 2014 |
| REVIEWING | Cognition, Behavior Research Methods, PLOS ONE, EvoLang, Language Learning, CogSci, CUNY Conference on Human Sentence Processing |
| TECHNICAL SKILLS | Python (pandas, numpy, scipy, seaborn, matplotlib, statsmodels, scikit-learn, NLTK, spaCy), R, bash |
| LANGUAGES | English (native) American Sign Language (structural knowledge) Nicaraguan homesign systems (structural knowledge, fieldwork) Nicaraguan Sign Language (structural knowledge, fieldwork) |
| PROFESSIONAL MEMBERSHIPS | Cognitive Science Society, Psychonomics Society, MathPsych |