BRENDAN T. JOHNS

Department of Communicative Disorders and Sciences, University at Buffalo
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btjohns@buffalo.edu

EMPLOYMENT

UNIVERSITY AT BUFFALO, Buffalo, New York, August 2015-Present
Assistant Professor, Department of Communicative Disorders and Sciences and Computational Linguistics

QUEEN'S UNIVERSITY, Kingston, Ontario, August 2013-August 2015
NSERC Post-Doctoral Fellow, Department of Psychology
~Advisor: Dr. Douglas J. K. Mewhort

INDIANA UNIVERSITY, Bloomington, Indiana, September 2012-August 2013
Post-Doctoral Fellow, Department of Psychological and Brain Sciences, Cognitive Science
~Advisor: Dr. Richard M. Shiffrin

EDUCATION

INDIANA UNIVERSITY, Bloomington, Indiana
Ph.D., Majors: Cognitive Science, Psychological and Brain Sciences, Received August 2012
~Advisor: Dr. Michael N. Jones

QUEEN'S UNIVERSITY, Kingston, Ontario
Bachelor of Computing, Major: Cognitive Science, Received 2007
~Advisor: Dr. Douglas J. K. Mewhort

AWARDS & HONORS

~CPA/CSBBCS 2015 Best Article of the Year Award
~NSERC Post-Doctoral Fellowship, 2-years/$80,000
~Marr Prize for Best Student Paper, CogSci 2011
~Robert J. Glushko and Pamela Samuelson Foundation Travel Award, CogSci 2011
~Robert J. Glushko and Pamela Samuelson Foundation Travel Award, CogSci 2010
~Castellan Award for Best Student Paper, SCiP 2009
~NSF Travel Award, CogSci 2009
~NSERC Postgraduate Scholarship – Doctoral, 3-years/$63,000
~NSERC Undergraduate Research Award, 1-year/$6000

PROFESSIONAL AFFILIATIONS

~Ad hoc reviewer for Cognitive Science, Cognitive Psychology, Journal of Memory and Language, Cognition, Cognitive Processes, Quarterly Journal of Experimental Psychology, Behavior Research Methods, Canadian Journal of Experimental Psychology, Psychonomic Bulletin and Review, Psychological Science, Philosophical Transactions B, Frontiers in Psychology, and Neural Networks
~Editorial Board of Frontiers in Psychology
~The Psychonomic Society
~The Cognitive Science Society
~Society for Computers in Psychology
~Canadian Society for Brain, Behavior and Cognitive Science

PEER-REVIEWED PUBLICATIONS

Johns, B. T., Taler, V., Pisoni, D. B., Farlow, M. R., Hake, A. M., Kareken, D. A., Unverzagt, F. W., & Jones, M. N. (in press). Cognitive modeling as an interface between brain and behavior: Measuring the semantic decline in mild cognitive impairment. *Canadian Journal of Experimental Psychology.*

Jones, M. N., & Dye, M., & **Johns, B. T.** (in press). Context as an organizing principle of the lexicon. In Ross, B. H. (Ed.) *The Psychology of Learning and Motivation*, vol. 67, Elsevier.

Johns, B. T., Mewhort, D. J. K., & Jones, M. N. (2016). Small worlds and big data: Examining the simplification assumption in cognitive modeling. In Jones, M. N. (Ed.) *Big Data in Cognitive Science: From Methods to Insight*, Taylor & Francis.

Johns, B. T., Dye, M. W., & Jones, M. N. (2016). The influence of contextual diversity on word learning. *Psychonomic Bulletin & Review*, 23, 1214-1220.

Johns, B. T., Sheppard, C. L., Jones, M. N., & Taler, V. (2016). The role of semantic diversity in word recognition across aging and bilingualism. *Frontiers in Psychology*, 7, 703 (11 pages).

Chubala, C. M., **Johns, B. T.**, Jamieson, R. K., & Mewhort, D. J. K. (2016). Applying an exemplar model to the implicit rule-learning task: Implicit learning of semantic structure. *Quarterly Journal of Experimental Psychology*, 69, 1049-1055.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2016). Experience as a free parameter in the cognitive modeling of language. *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.

Dye, M., **Johns, B. T.**, & Ramscar, M. (2016). The structure of names in memory: Deviations from uniform entropy impair memory for linguistic sequences. *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.

Johns, B. T., Jamieson, R. K., Crump, M. J. C., Jones, M. N., & Mewhort, D. J. K. (2016). The combinatorial power of experience. *Proceedings of the 38th Annual Conference of the Cognitive Science Society*.

Johns, B. T., & Jones, M. N. (2015). Generating structure from experience: A retrieval-based model of sentence processing. *Canadian Journal of Experimental Psychology*, 69, 233-251. **[Winner of 2015 CPA/CSBBCS Best Article Award]**

Johns, B. T., Dye, M., Jones, M. N. (2014). The influence of contextual variability on word learning. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2014). A continuous source reinstatement model of true and illusory recollection. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Johns, B. T., & Jones, M. N. (2014). Generating structure from experience: The role of memory in language. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Taler, V., **Johns, B. T.**, Young, K., Sheppard, C., & Jones, M. N. (2013). A computational analysis of semantic structure in bilingual fluency. *Journal of Memory and Language*, *69*, 607-618..

Johns, B. T., Taler, V., Pisoni, D. B., Farlow, M. R., Hake, A. M., Kareken, D. A., Unverzagt, F. W., & Jones, M. N. (2013). Using cognitive models to investigate the temporal dynamics

of semantic memory impairments in the development of Alzheimer's disease. In the *Proceedings of the 12th International Conference on Cognitive Modeling (ICCM).*

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2012). A synchronization account of false recognition. *Cognitive Psychology*, 65, 486-518.

Johns, B. T., Gruenenfelder, T. M., Pisoni, D. B., & Jones, M. N. (2012). Effects of word frequency, contextual diversity, and semantic distinctiveness on spoken word recognition. *Journal of the Acoustical Society of America*, 132, 74-80.

Johns, B. T., & Jones, M. N. (2012). Perceptual inference through global lexical similarity. *Topics in Cognitive Science*, 4, 103-120.

Jones, M. N., **Johns, B. T.**, & Recchia, G. (2012). The role of semantic diversity in lexical organization. *Canadian Journal of Experimental Psychology*, 66, 115-124.

Johns, B. T., & Jones, M. N. (2011). Construction in semantic memory: Generating perceptual representations with global lexical similarity. In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society.* Austin, TX: Cognitive Science Society. **[Marr Prize Winner]**

Johns, B. T., & Jones, M. N. (2010). Evaluating the random representation assumption of lexical semantics in cognitive models. *Psychonomic Bulletin & Review*, 17, 662-672.

Mewhort, D. J. K., **Johns, B. T.,** & Kelly, M. (2010). Applying the permutation test to factorial designs. *Behavior Research Methods*, 42, 366-372.

Johns, B. T., & Jones, M. N. (2010). Are random representations accurate approximations of lexical semantics? In S. Ohisson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Cognitive Science Society*. Austin TX: CSS.

Mewhort, D. J. K., Kelly, M., & **Johns, B. T.** (2009). Randomization tests and the unequal-N/unequal-variance problem. *Behavior Research Methods*, 41, 664-667.

Johns, B. T., & Jones, M. N. (2009). False recognition through semantic amplification. In N. A. Taatgen & H. van Rijn (Eds*.), Proceedings of the 31st Annual Cognitive Science Society*, (pp. 2795-2800). Austin TX: CSS.

Johns, B. T., & Jones, M. N. (2009). Simulating false recall as an integration of semantic search and recognition. In N. A. Taatgen & H. van Rijn (Eds.), *Proceedings of the 31st Annual Cognitive Science Society*, (pp. 2511-2516). Austin TX: CSS.

Johns, B. T., & Jones, M. N. (2008). Predicting word-naming and lexical decision times from a semantic space model. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (p. 279-285). Austin, TX: Cognitive Science Society.

Recchia, G., **Johns, B. T.**, & Jones, M. N. (2008). Context repetition benefits are dependent on context redundancy. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (p. 267-273). Austin, TX: Cognitive Science Society.

CONFERENCE PRESENTATIONS AND POSTERS

Johns, B. T. (invited). Cognitive technologies and text mining. Invited talk in the President's symposium at the *48th Conference of the Society for Computers in Psychology*.

Johns, B. T., Jamieson, R. K., Crump, M. J. C., Jones, M. N., & Mewhort, D. J. K. (2016). The combinatorial power of experience. Paper presented at the *Conference of the Canadian Society for Brain, Behavior, and Cognitive Science.* Ottawa, Canada.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2016). Experience as a free parameter in the cognitive modeling of language. Paper to be presented at the *38th Annual Conference of the Cognitive Science Society*.

Dye, M., **Johns, B. T.**, & Ramscar, M. (2016). The structure of names in memory: Deviations from uniform entropy impair memory for linguistic sequences. Poster to be presented at the *38th Annual Conference of the Cognitive Science Society*.

Johns, B. T., Jamieson, R. K., Crump, M. J. C., Jones, M. N., & Mewhort, D. J. K. (2016). The combinatorial power of experience. Paper to be presented at the *38th Annual Conference of the Cognitive Science Society*.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2015). Experience as a Free Parameter in the Cognitive Modeling of Language. Paper presented at the *Conference of the Canadian Society for Brain, Behavior, and Cognitive Science.* Ottawa, Canada.

Chubala, C., **Johns, B. T.**, Jamieson, R. K., & Mewhort, D. J. K. (2015). Applying an Exemplar Model to Implicit Learning of Conjunctive Rule Sets: Structure Emerges from Encoding Representations. Paper presented at the *Conference of the Canadian Society for Brain, Behavior, and Cognitive Science.* Ottawa, Canada.

Taler, V., **Johns, B. T.**, Sheppard, C., & Jones, M. N. (2015). Determining the Linguistic Information Sources Underlying Verbal Fluency Performance across Aging and Cognitive Impairment. Paper presented at the *Conference of the Canadian Society for Brain, Behavior, and Cognitive Science.* Ottawa, Canada.

Johns, B. T., Sheppard, C., Jones, M. N., & Taler, V. (2014). Semantic diversity and lexical organization in aging and bilingualism. Paper presented at the *Mental Lexicon Conference*. Niagra, Canada.

Johns, B. T., Dye, M., Jones, M. N. (2014). The influence of contextual variability on word learning. Paper to be presented at *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2014). A continuous source reinstatement model of true and illusory recollection. Paper to be presented at *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Johns, B. T., & Jones, M. N. (2014). Generating structure from experience: The role of memory in language. Paper to be presented at *Proceedings of the 36th Annual Conference of the Cognitive Science Society*.

Johns, B. T. (2013). Linking brain and behaviour using large scale computational models of knowledge. Invited talk at *Complex Data and Analytics in Medical Research Symposium*, Toronto, Ontario.

Johns, B. T., & Shiffrin, R. M. (2013).Orthographic and semantic visual priming. *Society for Mathematical Psychology*, Potsdam, Germany.

Johns, B. T., Taler, V., Pisoni, D. B., Farlow, M. R., Hake, A. M., Kareken, D. A., Unverzagt, F. W., & Jones, M. N. (2013). Using cognitive models to investigate the temporal dynamics of semantic memory impairments in the development of Alzheimer's disease. Paper

presented at the *Proceedings of the 12th International Conference on Cognitive Modeling (ICCM).*

Dye, M., Cao, R., **Johns, B. T.** & Dennis, S. (2013). The dynamics of intrusion in cued recall. *Society for Mathematical Psychology*, Potsdam, Germany.

Dye, M., **Johns, B. T.** & Ramscar, M. (2013). What's in a name? Engineering memorable names with the tools of information theory. *Society for Mathematical Psychology*, Potsdam, Germany.

Johns, B. T., & Jones, M. N. (2012). Generating structure from experience: The role of memory in language. *Paper presented at the 22nd Meeting of CSBBCS*

Johns, B. T., & Jones, M. N. (2012). A synchronization model of recognition and source memory. *Poster presented at Context and Episodic Memory Symposium 2012*.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2012). A synchronization account of false recognition. *Paper presented at the 2nd Annual Midwestern Cognitive Science Conference*.

Johns, B. T., & Jones, M. N. (2011). Grounding the lexicon: Inferring perceptual representations from global lexical similarity. *Paper presented at the 41st Meeting of the Society for Computers in Psychology*.

Johns, B. T., Taler, V., Young, K., Sheppard, C., & Jones, M. N. (2011). A computational analysis of semantic structure in bilingual fluency. *Poster presented at the 41st Meeting of the Society for Computers in Psychology*.

Johns, B. T., & Jones, M. N. (2011). Construction in semantic memory: Generating perceptual representations with global lexical similarity. *Paper presented at 33rd Meeting of the Cognitive Science Society*.

Johns, B. T., & Jones, M. N. (2010). Exploring the use of feedback in models of semantic acquisition. *Poster presented at the 40th Meeting of the Society for Computers in Psychology*.

Johns, B. T., Jones, M. N., & Mewhort, D. J. K. (2010). A synchronization account of false recognition. *Poster presented at the 40th Meeting of the Society for Computers in Psychology*.

Johns, B. T., & Jones, M. N. (2010). Are random representations accurate approximations of lexical semantics? *Poster presented at the 32nd Meeting of the Cognitive Science Society*.

Cox, G. E., Shiffrin, R. M., Jones, M. N., & **Johns, B. T.** (2010). Developing knowledge from incidental associations. *Paper presented at the Society for Mathematical Psychology*.

Johns, B. T., & Jones, M. N. (2009). Using automated semantic measures to test the assumptions of memory models: Do random representations reflect the organization of semantic memory? *Paper presented at the 39th Meeting of the Society for Computers in Psychology*. **Winner of Castellan Award for best student paper**

Johns, B. T., & Jones, M. N. (2009). Simulating false recall as an integration of semantic search and recognition. *Paper presented at the 31st Cognitive Science Society Meeting*.

Johns, B. T., & Jones, M. N. (2009). False recognition through semantic amplification. *Poster presented at the 31st Cognitive Science Society Meeting*.

Johns, B. T., & Jones, M. N. (2008). Predicting word-naming and lexical decision times from a semantic space model. *Paper presented at 30th Annual Conference of the Cognitive Science Society*.

Recchia, G., **Johns, B. T.**, & Jones, M. N. (2008). Context repetition benefits are dependent on context redundancy. *Paper presented at 30th Annual Conference of the Cognitive Science Society*.

Johns, B. T., & Jones, M. N. (2008). Using a semantic distinctiveness count to calibrate retrieval times: A large-scale corpus analysis. *Paper presented at the 38th Meeting of the Society for Computers in Psychology*.

Johns, B. T., & Jones, M. N. (2008). Using a Contextual Co-occurrence Learning Model to Predict Item-Specific Retrieval and Recognition Effects. Paper presented at the *18th Meeting of CSBBCS*.

Johns, B. T., & Jones, M. N. (2008). The Organization of Meaning in Memory: Evaluating Computational Mechanisms. Paper presented at the *North American Computing and Philosophy Conference* (NA-CAP).

TEACHING EXPERIENCE
~Assistant Professor, University at Buffalo
> ~Language Disorders in Adults, Fall 2015, 2016
> ~Disorders of Memory, Spring 2016
> ~Introduction to Language, Fall 2016

~Adjunct, Queen's University:
> ~Memory, Spring 2014

~Instructor, Indiana University:
> ~Research Methods in Psychology, Fall 2009

~Assistant Instructor, Indiana University:
> ~Introduction to Psychology, Fall 2007, Spring 2008
> ~Cognitive Psychology, Fall 2008, Spring 2009, Spring 2011