

david reitter

Assistant Professor of Information Sciences and Technology

Applied Cognitive Science Lab and Center for Language Science

The Pennsylvania State University, University Park

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EDUCATION

Postdoc (Psychology), Carnegie Mellon University, Pittsburgh, PA	2008-2012
PhD (Cognitive Science), School of Informatics, University of Edinburgh, UK	2008
MSc (Computer Science), University College Dublin, Ireland	2005
Diplom (Computational Linguistics), University of Potsdam, Germany	2003

EMPLOYMENT

Assistant Professor, College of Information Sciences and Technology, Penn State Co-Director, Applied Cognitive Science Lab. Affiliated Faculty: Center for Language Science, Penn State	2012-
Special Faculty (Intro Cognitive Psychology), Carnegie Mellon University	2011-2012
Research Fellow, MIT Media Lab Europe, Dublin, Ireland	2002-2004
Computational Linguist, Agentscape AG, Berlin, Germany	2000-2001
Radio journalist (freelance, desk editor) for RadioEINS, Berlin, and ARD, Germany	1999-2002

October 27, 2017

Publications

MANUSCRIPTS

David Reitter and Jens Grossklags
Timing Decisions: How Individual Differences and Task Perception Affect Choices.
In review.

Moojan Ghafurian* and David Reitter
Impatience in Dynamic Decision Making.
In review.

*Asterisks indicate advisees.
Publications are available at
www.david-reitter.com/pub

Michael T. Putnam, David Reitter, Matthew Carlson
Integrated, not isolated: Defining typological proximity in an integrated multilingual architecture.
In review.

Moojan Ghafurian*, Frank E. Ritter, and David Reitter
Countdown Timer Speed: A Trade-off between Delay Duration Perception and Recall
In review.

Moojan Ghafurian* and David Reitter
Moral decision-making about time: How appropriate is it to save time by taking it from others?
In preparation.

David Reitter, Yafei Wang*, and John Yen
Linguistic Alignment as Temporal-Causal Factor for Sentiment Change
In preparation.

JOURNAL ARTICLES AND ARCHIVAL PREMIER-TIER COMPUTER SCIENCE CONFERENCE PAPERS

Alexander G. Ororbias II*, Tomas Mikolov, and David Reitter
Learning Simpler Language Models with the Delta Recurrent Neural Network Framework.
Neural Computation, in press.

Bill McDowell*, Nathaniel Chambers, Alexander Ororbias II*, David Reitter
Event Ordering with a Generalized Model for Sieve Prediction Ranking.
2017 International Joint Conference in Natural Language Processing. Taipei, Taiwan, to appear.

Yang Xu* and David Reitter
Information density converges in dialogue: Towards an information-theoretic model.
Cognition 170, 147-163, 2018.

Yang Xu*, David Reitter
Spectral Analysis of Information Density in Dialogue Predicts Collaborative Task Performance.
In: *Proc. 55th Annual Mtg. of the Association for Computational Linguistics*. Vancouver, Canada, 2017.

Margreet Vogelzang, Anne C. Mills, David Reitter, Jacolien Van Rij, Petra Hendriks & Hedderik Van Rijn
Toward cognitively constrained models of language processing: A review.
Frontiers in Communication, 2(11), 2017.

Vito D’Orazio, Michael Kenwick, Matthew Lane, G. Palmer, and David Reitter
Crowdsourcing the measurement of interstate conflict.
PLOS ONE, 11(6), 2016.

Yang Xu* and David Reitter
Entropy converges between dialogue participants: Explanations from an information-theoretic perspective.
In *Proc. 54th Annual Mtg. Association for Computational Linguistics (ACL), Vol. 1 (Long Papers)*, 537-546, Berlin, Germany, 2016.

Yang Xu* and David Reitter
Convergence of Syntactic Complexity in Conversation
In *Proc. 54th Annual Mtg. Association for Computational Linguistics (ACL), Vol. 2 (Short Papers)*, 443-448, Berlin, Germany, 2016.

Jeyon Paik, Jong Kim, Frank E. Ritter, David Reitter
Predicting User Performance and Learning in Human-Computer Interaction with the Herbal Compiler.
ACM Transactions on Computer-Human Interaction 22 (5), 2015.

Alexander G. Ororbia II*, C. Lee Giles, and David Reitter
Learning a Deep Hybrid Model for Semi-Supervised Text Classification.
In *Proc. Empirical Methods in Natural Language Processing (EMNLP)*, 471-481, Lisbon, Portugal, 2015.

Alexander G. Ororbia II*, David Reitter, Jian Wu, and C. Lee Giles
Online Learning of Deep Hybrid Architectures for Semi-Supervised Categorization.
In *Machine Learning and Knowledge Discovery in Databases. Proc. European Conference, ECML PKDD 2015*. Lecture Notes in Computer Science, vol 9284. pp 516-532. Porto, Portugal: Springer, 2015.

David Reitter and Johanna D. Moore
Alignment and Task Success in Spoken Dialogue.
Journal of Memory and Language, 76, 29-46, 2014.

Jens Grossklags and David Reitter
How Task Familiarity and Cognitive Predispositions Impact Behavior in a Security Game of Timing.
In *Proc. 27th IEEE Computer Security Foundations Symposium*. Vienna, Austria: IEEE, 2014.

David Reitter and Christian Lebiere.
Social cognition: Memory decay and adaptive information filtering for robust information maintenance.
In *Proc. Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI-12)*, Toronto, Ontario, 2012.

David Reitter, Frank Keller, and Johanna D. Moore.
A computational cognitive model of syntactic priming.
Cognitive Science, 35(4):587-637, 2011.

David Reitter and Christian Lebiere.

How groups develop a specialized domain vocabulary: A cognitive multi-agent model.
Cognitive Systems Research, 12(2):175-185, 2011.

David Reitter and Christian Lebiere.

A cognitive model of spatial path planning.
Computational and Mathematical Organization Theory, 16(3):220-245, 2010.

David Reitter.

Metacognition and multiple strategies in a cognitive model of online control.
Journal of Artificial General Intelligence, 2(2):20-37, 2010.

Kevin A. Gluck, Clayton T. Stanley, Jr., L. Richard Moore, David Reitter, and Marc Halbrügge.

Exploration for understanding in cognitive modeling.
Journal of Artificial General Intelligence, 2(2):88-107, 2010.

David Reitter and Johanna D. Moore.

Predicting success in dialogue.
In *Proc. 45th Annual Meeting of the Association of Computational Linguistics (ACL)*, pp. 808-815, Prague, Czech Republic, 2007.

David Reitter, Julia Hockenmaier, and Frank Keller.

Priming effects in Combinatory Categorical Grammar.
In: *Proc. 2006 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 308-316, Sydney, Australia, 2006.

David Reitter, Frank Keller, and Johanna D. Moore.

Computational modelling of structural priming in dialogue.
In *Proc. Human Language Technology conference - North American chapter of the Association for Computational Linguistics annual meeting (HLT-NAACL)*, pp. 121-124, New York, 2006.

David Reitter.

Simple signals for complex rhetorics: On rhetorical analysis with rich-feature support vector models.
LDV-Forum, Journal for Computational Linguistics and Language Technology, 18(1/2):38-52, 2003.

ARCHIVAL REFEREED CONFERENCE ARTICLES AND BOOK CHAPTERS

Yafei Wang*, David Reitter, John Yen

How emotional support and informational support relate to linguistic alignment.
In: *Social, Cultural, and Behavioral Modeling*, pp. 25-34, Washington, DC: Springer, 2017.

Jeremy Cole*, Moojan Ghafurian*, David Reitter

Is Word Adoption a Grassroots Process? An Analysis of Reddit Communities.
In: *Social, Cultural, and Behavioral Modeling*, pp. 236-241, Washington, DC: Springer, 2017.

David Reitter

Who Aligns With Whom in Web Forum Dialogue: Studies in Big-Data Computational Psycholinguistics
In M. N. Jones (Ed.), *Big Data in Cognitive Science*, pp. 246-269, Routledge Psychology Press. 2017.

Moojan Ghafurian*, David Reitter

Impatience induced by waiting: An Effect Moderated by the Speed of Countdowns

In *Proc. Designing Interactive Systems*, 556-564, Brisbane, Australia, 2016.

Jeremy Cole*, Ying Xu, and David Reitter

How People Talk About Armed Conflicts

In *Social, Cultural, and Behavioral Modeling. SBP-BRIMS 2016*. Lecture Notes in Computer Science, vol 9708. pages 366-376. Washington, DC: Springer, 2016.

Alexander G. Ororbia II*, Yang Xu, D. R., Vito D'Orazio

Error-correction and Aggregation in Crowd-Sourcing of Geopolitical Incident Information.

In *Social Computing, Behavioral-Cultural Modeling, and Prediction*. SBP 2015. Lecture Notes in Computer Science vol 9021. pp 381-387. Washington DC:Springer, 2015.

David Reitter

Hungry wolves, creepy sheepies: The gamification of the programmer's classroom.

In J. M. Carroll (Ed.), *Innovative practices in teaching information sciences and technology* (pp. 19-29). Springer, 2014.

NON-ARCHIVAL REFEREED PAPERS

Matthew A. Kelly*, and David Reitter.

Holographic declarative memory: Using distributional semantics within ACT-R.

In *Proceedings of the AAAI Fall Symposium on A Standard Model of the Mind*. Arlington, VA, 2017.

Jeremy Cole*, Moojan Ghafurian*, and David Reitter

Linking Memory Activation and Word Adoption in Social Language Use via Rational Analysis.

In: *Proceedings of the 15th International Conference on Cognitive Modeling*. London, UK, 2017.

Jeremy Cole* and David Reitter

Examining Working Memory during Sentence Construction with an ACT-R Model of Grammatical Encoding.

In *Proceedings of the 15th International Conference on Cognitive Modeling*. London, UK, 2017.

Matthew A. Kelly*, David Reitter, and Robert L. West

Degrees of Separation in Semantic and Syntactic Relationships.

In *Proceedings of the 15th International Conference on Cognitive Modeling*. London, UK, 2017.

Moojan Ghafurian*, David Reitter

Gender Differences in the Effect of Impatience on Men and Women's Timing Decisions

In *Proc. 38th Annual Conference of the Cognitive Science Society*, Philadelphia, PA, 2016.

Yang Xu* and David Reitter

An Evaluation and Comparison of Linguistic Alignment Measures.

In *Proc. Cognitive Modeling and Computational Linguistics (CMCL)*. Denver, CO: Association for Computational Linguistics. 2015.

Yafei Wang*, John Yen, and David Reitter
Pragmatic Alignment on Social Support Type in Health Forum Conversations.
In *Proc. Cognitive Modeling and Computational Linguistics (CMCL)*. Denver, CO: Association for Computational Linguistics, 2015.

Moojan Ghafurian* and David Reitter
Impatience, Risk Propensity and Rationality in Timing Games.
In *Proc. 36th Annual Conference of the Cognitive Science Society*. Quebec City, Quebec, 2014.

Yafei Wang*, David Reitter, and John Yen.
Linguistic Adaptation in Online Conversation Threads: Analyzing Alignment in Online Health Communities.
In *Proc. Cognitive Modeling and Computational Linguistics*. Workshop at the Mtg. of the Association for Computational Linguistics, 2014.

David Reitter, Jens Grossklags, and Alan Nochenson.
Risk-seeking in a continuous game of timing.
In R. West and T. Stewart, editors, *Proc. 12th International Conference on Cognitive Modelling*, pages 397-403, Ottawa, Canada, 2013.

David Reitter and Paul Scerri.
Smooth dynamics, good performance in cognitive-agent congestion problems.
In *Proc. 35th Annual Mtg. of the Cognitive Science Society*, pages 3269-3274, Berlin, Germany, 2013.

Paul Scerri and David Reitter
Cognitive Instance-Based Learning Agents in a Multi-Agent Congestion Game.
In *Workshop on Information Sharing in Large Scale Multi-Agent Systems*, at AAMAS, 2013.

David Reitter and Christian Lebiere.
Towards cognitive models of communication and group intelligence.
In *Proc. 33rd Annual Meeting of the Cognitive Science Society*, pp. 734-739, Boston, MA, 2011.

David Reitter, Katia Sycara, Christian Lebiere, Yury Vinokurov, Antonio Juarez, and Michael Lewis.
How teams benefit from communication policies: information flow in human peer-to-peer networks.
In *Proc. 20th Behavior Representation in Modeling & Simulation (BRiMS)*, 8 p., 2011.

David Reitter and Christian Lebiere.
Accountable modeling in ACT-UP, a scalable, rapid-prototyping ACT-R implementation.
In *Proc. 10th International Conference on Cognitive Modeling (ICCM)*, pp. 199-204, Philadelphia, PA, 2010.

David Reitter, Ion Juvina, Andrea Stocco, and Christian Lebiere.
Resistance is futile: Winning lemonade market share through metacognitive reasoning in a three-agent cooperative game.
In *Proc. 19th Behavior Representation in Modeling & Simulation (BRiMS)*, 9 p., Charleston, SC, 2010.

David Reitter and Christian Lebiere.
On the influence of network structure on language evolution.

In Ron Sun, editor, *Proc. CogSci Workshop on Cognitive Social Sciences: Grounding the Social Sciences in the Cognitive Sciences*, Portland, Oregon, 2010.

David Reitter and Christian Lebiere.

Did social networks shape language evolution? A multi-agent cognitive simulation.

In *Proc. Cognitive Modeling and Computational Linguistics Workshop (CMCL)*, pp. 9-17, ACL, Uppsala, Sweden, 2010.

Christian Lebiere, Andrea Stocco, David Reitter, and Ion Juvina.

High-fidelity cognitive modeling to real-world applications.

In *Proc. NATO Workshop on Human Modeling for Military Application*, 19 p., Amsterdam, NL, 2010.

David Reitter, Christian Lebiere, Michael Lewis, Huadong Wang, and Zheng Ma.

A cognitive model of visual path planning in a multi-robot control system.

In *Proc. Systems Man Cybernetics 2009 (IEEE-SMC)*, 7 p., San Antonio, TX, 2009.

David Reitter and Christian Lebiere.

Towards explaining the evolution of domain languages with cognitive simulation.

In *Proc. 9th International Conference on Cognitive Modeling (ICCM)*, 8 p., Manchester, UK, 2009.

David Reitter and Christian Lebiere.

A subsymbolic and visual model of spatial path planning.

In *Proc. Behavior Representation in Modeling and Simulation (BRIMS)*. 8 p., 2009.

Best paper award BRIMS 2009.

David Reitter and Frank Keller.

Against sequence priming: Evidence from constituents and distitueuts in corpus data.

In *Proc. 29th Annual Conference of the Cognitive Science Society (CogSci)*, pp. 1421-1426, 2007.

Ben Hachey, Gabriel Murray, and David Reitter.

Dimensionality reduction aids term co-occurrence based multi-document summarization.

In *Proc. COLING-ACL Workshop Task-Focused Summarization and Question Answering 2006*, pp. 1-7, Sydney, Australia, 2006.

Myroslava O. Dzikovska, David Reitter, Johanna D. Moore, and Claus Zinn.

Data-driven modelling of human tutoring in calculus.

In *Proc. ECAI 2006 Workshop on Language-enabled Educational Technology*, pp. 22-28, Riva del Garda, Italy, 2006.

David Reitter, Johanna D. Moore, and Frank Keller.

Priming of syntactic rules in task-oriented dialogue and spontaneous conversation.

In *Proc. 28th Annual Conference of the Cognitive Science Society (CogSci)*, pp. 685-690, Vancouver, Canada, 2006.

Ben Hachey, Gabriel Murray, and David Reitter.

The Embra system: Query-oriented multi-document summarization with a very large latent semantic space.

In *Document Understanding Conference (DUC)*, 6 p., Vancouver, Canada, 2005.

Hans Dolfing, David Reitter, Luis Almeida, Nuno Beires, Michael Cody, Rui Gomes, Kerry Robinson, and R. Zielinski. The FASiL speech and multimodal corpora.
In *Proc. INTER/EUROSPEECH 2005*. 4 p., Lisbon, Portugal.

Erin Panttaja, David Reitter, and Fred Cummins.
The evaluation of adaptable multimodal system outputs.
In *Proc. DUMAS Workshop on Robust and Adaptive Information Processing for Mobile Speech Interfaces*, pp. 69-76, 2004.

David Reitter.
A development environment for multimodal functional unification generation grammars.
In *Third International Conference on Natural Language Generation (INLG). 2nd Volume, posters*. 4 p., 2004.

David Reitter, Erin Panttaja, and Fred Cummins.
UI on the fly: Generating a multimodal user interface.
In *Proc. Human Language Technology Conference 2004 / North American Chapter of the Association for Computational Linguistics (HLT/NAACL)*, pp. 45-48, 2004.

David Reitter and Manfred Stede.
Step by step: underspecified markup in incremental rhetorical analysis.
In *Proc. 4th International Workshop on Linguistically Interpreted Corpora (LINC) at EACL*, pp. 77-84, Budapest, 2003.

David Reitter. Statistical part-of-speech guessing for German: Support vector classifiers versus voting.
In *Proc. 12th Student Conference on Computational Linguistics (TaCoS)*, 8 p., Potsdam, Germany, 2002.

Daniela Berger, David Reitter, and Manfred Stede.
XML / XSL in the dictionary: The case of discourse markers.
In *Proc. 2nd Workshop on NLP and XML (NLPXMP) at COLING*, pp. 1-8, Taipei, Taiwan, 2002.

David Reitter, Stefan Covaci, Florin Oltean, Catalin Bacanu, and Traian Serbanuta.
Hybrid natural language processing in a customer-care environment.
In *Proc. 11th Student Conference on Computational Linguistics (TaCoS)*, 8 p., Heidelberg, Germany, 2001.

EDITED VOLUMES

David Reitter and Frank E. Ritter
Introduction to the Issue on Computational Models of Memory: Selected Papers From the International Conference on Cognitive Modeling. *Topics in Cognitive Science, Issue on Computational Models of Memory* 9(1), 48-50, 2017.

William G. Kennedy, Robert St. Amant, and David Reitter
Behavior representation in modeling and simulation: introduction to CMOT special issue: BRiMS 2013. *Computational and Mathematical Organization Theory*, 22(1), 1-3, 2016.

Kevin S. Xu, David Reitter, Dongwon, Lee, and Nathaniel Osgood (Eds.)
Social, Cultural, and Behavioral Modeling. 9th International Conference, SBP-BRiMS 2016. LNCS, 9708. Springer, Switzerland.

David Reitter, E. Webb Stacy, Elizabeth Mezzacappa (Eds.)
Proceedings of the 24th Annual Conference on Behavior Representation in Modeling and Simulation. Washington, DC: BRiMS Society, 2015.

Robert St.Amant, David Reitter, E. Webb Stacy (Eds.)
Proceedings of the 23rd Annual Conference on Behavior Representation in Modeling and Simulation.
Washington, DC: BRiMS Society, 2014.

William G. Kennedy, David Reitter, Robert St. Amant (Eds.).
Proceedings of the 22rd Annual Conference on Behavior Representation in Modeling and Simulation.
Ottawa, Canada: BRiMS Society, 2013.

John Hale and David Reitter (Eds.)
Issue on Computational Models of Natural Language.
Topics in Cognitive Science, 5(3), (11 papers). 2013.

THESES

Context effects in language production: Models of syntactic priming in dialogue corpora.
PhD thesis, University of Edinburgh, 177 p., 2008.

Hybrid planning and realization of coherent utterances for multimodal natural language dialogue systems.
Master's thesis, University College Dublin, 115 p., 2004.

Rhetorical analysis with rich-feature support vector models.
Master's thesis, University of Potsdam, 94 p., 2003.

ABSTRACT-BASED CONFERENCE TALKS AND POSTERS

Sherice Clarke, and David Reitter
Leveraging Alignment to Support Engagement and Understanding in Learning Dialogues
Presented at the CLIEDE 2017 workshop: Connecting Language, Interaction and Education in Digital
Environments, University Park, PA, 2017.

David Reitter, Jeremy Cole, Matthew A. Kelly, and Yang Xu
Cracking Language with ACT-R: How does language mix with cognition? Challenges for the modeling
community.
Presented at the 24th ACT-R Workshop, London, UK, 2017.

David Reitter, Alexander G. Ororbia II, Tomas Mikolov, and Matthew A. Kelly
Distributed language models with the Delta-RNN and Deep BEAGLE
Invited Talk at the Symposium on Distributed Cognition, MathPsych/ICCM 2017, Warwick, UK, 2017.

Vito D'Orazio, David Reitter, Glenn Palmer, Matthew A. Kelly, Michael Kenwick, Zhanna Terechshenko,
and Dennis Okyere: An Efficient System for Conflict Data Production
Presented at the 2017 Conference of the Society for Political Methodology (PolMeth), Madison, WI, 2017.

Alexander G. Ororbia II*, David Reitter, and C. Lee Giles
The Temporal Neural Coding Network: Towards Lifelong Language Learning.
Presented at the 11th Annual Machine Learning Symposium, The New York Academy of Sciences, New
York, NY, 2017.

Yanxi Liu, J. Cole*, and David Reitter
Human Visual Perception of the 17 Wallpaper-Group Patterns using Timed Trials.
Oral presentation at the Vision Sciences Society Sixteenth Annual Meeting, Florida, 2016.

Moojan Ghafurian*, Jens Grossklags, and David Reitter
Systematic, Individual and Situational Biases in Timing Decisions.
Oral Presentation at the International Meeting of the Psychonomic Society, Granada, Spain, 2016

Jeremy Cole*, David Reitter, and Yanxi Liu
Symmetry Features and Group Hierarchy Model Human Symmetry Perception.
Poster at the International Meeting of the Psychonomic Society, Granada, Spain, 2016

D. Reitter, Y. Xu*, P. Craven, A. Sándor, R.C. Garrett, E.V. Cross, and J. L. Franke
Cognitive Models Predicting Surprisal in Robot Operators.
Poster and Abstract presented at the International Conference for Cognitive Modeling, Groningen, Netherlands, 2015

David Reitter, Coty Gonzalez, Christian Lebiere and Joachim Meyer
Cognitive Security.
Panel presented at the 13th Annual Workshop on the Economics of Information Security, University Park, PA, 2014.

David Reitter
Computational and Underspecified Approaches to Standardization.
In: "Methods for Communicating the Structure and Content of a Cognitive Model", a discussion panel at Human Factors and Ergonomics Society International Annual Meeting. San Diego, CA, 2013.

Stefan Schaffer (TU Berlin), and David Reitter
Modeling Efficiency-guided Modality Choice in Voice and Graphical User Interfaces.
Poster at the 2012 International Conference on Cognitive Modeling.
Berlin, Germany, 2012.

Alin Coman, Winter Mason, David Reitter, and Bill Hirst:
Cognition and social dynamics: a new approach to emergent phenomena.
Symposium at the 23rd Annual Convention of the Association for Psychological Science, Washington, DC, 2011.

David Reitter
The Geo Game: Information propagation and collaboration in large human networks.
Talk at *Scaling Individual Decision Making Models to Models of Social Networks*, a Symposium at the 20th Behavior Representation in Modeling & Simulation Conference, Provo, UT, 2011.

David Reitter and Christian Lebiere
ACT-UP: A cognitive modeling toolkit for composition, reuse and integration.
Talk at MODSIM World Conference and Expo, Hampton, VA, 2010.

David Reitter, Walter Warwick, Varun Dutt, Kevin A. Gluck
Results and lessons learned from the 2009 DSF model comparison challenge.
Symposium at the 19th Behavior Representation in Modeling & Simulation Conference, 2010.

David Reitter and Frank Keller
Structural priming in language production as the result of learning and spreading activation in ACT-R.
Presentation at 21st CUNY Conference on Human Sentence Processing. Chapel Hill, NC, 2008.

David Reitter
The repetition of general lexical material boosts structural priming in language production.
Poster at 21st CUNY Conference on Human Sentence Processing. Chapel Hill, NC, 2008.

David Reitter and Johanna D. Moore

Successful dialogue requires syntactic alignment.

Poster at 20th CUNY Conference on Human Sentence Processing. San Diego, CA, 2007

David Reitter, Frank Keller, and Julia Hockenmaier

Corpus-based evidence against sequence priming.

Poster at 20th CUNY Conference on Human Sentence Processing. San Diego, CA, 2007

David Reitter, Johanna D. Moore and Frank Keller

Corpus-based evidence for syntactic priming as rule repetition.

Presentation at 12th Annual Conference on Architectures and Mechanisms for Language Processing (AMLaP), Nijmegen, Netherlands, 2006

GRANTS, CONTRACTS AND FELLOWSHIPS

Pending:

PI. CAREER: An Integrated Broad-Coverage Model of Language Production.

National Science Foundation. \$500k. (Single PI).

Under review.

Major External Support:

Sum of external funding as PI/Co-PI/Co-I: \$1,454,000 to David Reitter; \$4,339,000 total.

Co-I (with: Ogan (PI, CMU), Clarke (PI, UCSD), Zimmerman (CMU), Millstone (UCSD), Alvarez (UCSD)). 2017
ClassInSight: Insight on Teacher Learning by Scaffolding Noticing and Reflection.

McDonnell Foundation. ~\$270k. total: \$2.5M (phase I+II pending mid-term review).

PI. CompCog: Computational, distributed accounts of human memory: improving cognitive models 2017

National Science Foundation (Perception, Action, & Cognition, co-funded: Robust Intelligence).

\$500k. (Single PI.)

Co-PI (with G. Palmer and V. D’Orazio, UT Dallas). 2015

Updating the militarized dispute data through crowdsourcing: MID5, 2011-2017.

National Science Foundation (Political Science). \$345k, total: \$1 Million.

PI. Modeling syntactic priming in language production according to corpus data. 2015

National Science Foundation (Linguistics). \$75k. (Single PI.)

PI. Alignment in web-forum discourse: computational models of adaptation and language change. 2015

CISE Research Initiation Initiative grant (CRII)

National Science Foundation (Computer Science/Robust Intelligence). \$174k. (Single PI.)

PI. Evaluating the impact of explanation-based transparency approaches on human trust in autonomous unmanned systems. 2014

Air Force Research Laboratory. Prime: SRA; Super: Lockheed Martin Corp. \$90k. (Single PI.)

GRANTS, CONTRACTS AND FELLOWSHIPS (CONT'D)

Other External Support / Support as Co-I / Internal Seed Grants and Contracts:

PI (with F. E. Ritter). ICCM 2016: International Conference on Cognitive Modeling. Conference Support. National Science Foundation (SBE PAC, CISE IIS). \$15k	2016
Co-PI (with M. Putnam and M. Carlson). Competition, conflict, and optimization: Toward a dynamic model of multilingualism. SSRI Faculty Fellows Program. \$22.5k.	2016
Co-PI (with J. Yen and S. Haynes). Teaching innovation for developing an undergraduate course on human-robot interaction using a humanoid robot. College of IST. \$10k.	2015
Consultant . Voice-enabled agent for realistic integrated combat operations training. Small Business Innovation Grant to ORION Int'l; Air Force Office of Scientific Research.	2014
Co-PI (with J. Grossklags). Once bitten, twice shy: Controlled experiments and cognitive modeling of online marketing scams. Seed grant funded by the College of IST. \$8.5k.	2013
PI (with Co-PIs J. Yen and P. Mitra). Interactive linguistic alignment in large social networks of health online forums. Seed grant funded by the College of IST. \$8k.	2013
Co-I (with G. Palmer et al.). Using crowdsourcing to measure complex social concepts. Seed grant funded by the Social Science Research Institute. \$20k.	2013
Co-I (with C. Lebiere). Learning and modeling for human performance and readiness. Air Force Research Lab, Human Effectiveness Dir. Prime: Ball Aerospace. ~\$500k. Reduced to ~\$50k due to sponsor budget cuts.	2011
Postdoc . Fellowship, German Academic Exchange Service. Awarded, but not used, ~\$100k.	2008

AWARDS (SELECTION)

Best Model . Predicting Cognitive Performance in Open-ended Dynamic Tasks - A Modeling Comparison Challenge. International Conference on Cognitive Modeling	2009
Best Paper . Behavior Representation in Modeling and Simulation Conference	2009
Best Thesis Award . German Society for Computational Linguistics & Language Technology	2003

ADVISING AND TEACHING

Former and Current Students

- PhD: Dr. Yafei Wang, Web-Forum Discourse, 2013-2017, now: IBM Research
Dr. Moojan Ghafurian, Timing Decision-Making, 2013-2017, next: U Waterloo
Yang Xu, Alignment in Web-Forum Discourse, 2013-
Alexander G. Ororbia II, Deep Learning with Restricted Boltzmann Machines, 2013-
Jeremy R. Cole, Unsupervised Cognitive Modeling of Language Processing, 2014-
- PhD committee: Dr. Michael Kenwick (Political Science), 2017, now: Harvard
Dr. Siddhartha Banerjee (IST: Natural Lang. Processing), 2016, now: Yahoo! Research
Dr. Kyle Williams (IST: Information Retrieval), 2016, now: Microsoft Research
Christopher Funk (CS: Computational Cognition), 2016-
- MSc: Sadegh Farhang, MSc, 2016-2017 (now: PhD, Penn State)
Saranya Venkatraman, 2017-
- Grad Assistant: Bill McDowell, 2016 (now: MSc, Stanford)

Teaching at Penn State

Computational Models of Language - Graduate Seminar	2016
Cognitive Science: Introduction (400-level)	2013, 2017
Emerging Issues in Cognitive Science (Graduate)	2015
Intro. and intermediate Object-Oriented Programming (Java and Python) (200-level)	2012-2015

Teaching at Sungkyunkwan University, International Summer Semester, Seoul, Korea

Data Science and Management	2016
How the Mind Works - A Big Data Approach	2015, 2016

Teaching at Carnegie Mellon University

Cognitive Psychology, a 200-level lecture (140-180 students, 9 units) Department of Psychology, Carnegie Mellon University	2011, 2012
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ACTIVITIES AND EXTERNAL SERVICE (SELECTION)

Founder and project lead, <u>Aquamacs Emacs</u> , a software project for science and engineering. More than 13,000 regular users world-wide, primarily in academia	2005-
Inventor/Developer, <u>Zot bib web</u> , a tool to create interactive, explorable web bibliographies	2016-
Senior program committee member, <i>CogSci: Annual Mtg. of the Cognitive Science Society</i>	2017
Co-editor, Issue on Computational Models of Memory, <i>Topics in Cognitive Science</i>	2017
Program co-chair, <i>International Conference on Cognitive Modeling</i>	2016
Area chair in Cognitive Modeling and Psycholinguistics, <i>ACL: Assoc. Computational Linguistics</i>	2016
General and program co-chair, <i>ICCM: International Conference on Cognitive Modeling</i>	2016
Program co-chair, <i>SBP-BRIMS: Social, Cultural, and Behavioral Modeling</i>	2016
Program co-chair, <i>Behavioral Representation in Modeling and Simulation Conference</i>	2013, 2014, 2015
Co-editor, Issue on Behavior Representation, <i>Computational and Mathematical Organization Theory</i>	2015
Co-editor, Issue on Computational Models in Linguistics, <i>Topics in Cognitive Science</i>	2012
Co-chair, 2nd and 3rd Workshops on <i>Cognitive Modeling and Computational Linguistics</i>	2011, 2012
Board member, ACL SIG Natural Language Generation	2005, 2006

Reviewing

Editorial review board member: <i>Frontiers in Psychology</i>	2015-
Proposal review panel member, <i>National Science Foundation</i>	2015
Ad-hoc reviewer for Cognition, Cognitive Science, Topics in Cog.Sci., Psychonomic Bulletin & Review, J Cog. Sci., Cognitive Science Research, Engineering and Physical Sc. Research Council (EPSRC). Intl. J. Human Computer Studies, J of Cognitive Engineering and Decision-Making.	
Program Committee Member: Mtg. Association Computational Linguistics (ACL); Mtg. North- American ACL (NAACL); Cognitive Modeling and Computational Linguistics (CMCL); Social Computing, Behavioral-Cultural Modeling and Prediction Conference (SBP); Mtg. Cognitive Science Soc. (CogSci, EuroCogSci); previous years: ACM CHI, ACM UIST, INLG, etc.	2015

Visiting

Visiting Research Scientist, Center for Research in Language, Cognitive Science, University of California, San Diego	2017-
Speech Interfaces Group, Media Laboratory, MIT	2004
Dept. of Computer Science, Macquarie University, Australia	2003

SERVICE TO PENN STATE

Graduate faculty representative (university level)	2017-
Member, Search Committee, Data Science	2017-
Faculty Area Representative, Data Science, College of IST	2017-
Graduate Advisory Committee, College of IST	2015-2017
Initiator/Director, Exchange Program with Sungkyunkwan University, Korea	2015-
Faculty Advisor, Penn State Soaring Club	2012-
Task-Force: Global Engagement Network, PSU / National Taiwan Normal University	2015
Data Science Major development (Course Committee), College of IST, Penn State	2015
Graduate Recruiting Committee, College of IST, Penn State	2013-2015
Assessment Committee, College of IST, Penn State	2012-2014

LANGUAGES AND SKILLS

Native/near native: English, German; conversational: French

Python, Java, C++, C, shell scripting, Prolog, Common Lisp, Emacs Lisp, LaTeX. basic: Perl, assembly, etc.

Commercial and private pilot (airplane, glider), instrument rated, US (FAA), also: glider, UK (CAA).

INVITED LECTURES

Computational approaches to modeling dialogue, Dept. of Linguistics, U. of California, San Diego	2016
Alignment and Information in Dialogue: How contributions of ideas are reflected in language Korea Advanced Institute of Science and Technology (KAIST), Korea	2016
Alignment in Dialogue: Beyond Syntax. Invited talk, Linguistics Dept., Georgetown University	2015
Window into the mind: Syntactic priming and what it reveals about the psychology of dialogue Department of Psychology, Seoul National University, Korea	2015
Large-scale language data as window into the mind, Distinguished Lecture Series, Department of Library & Information Sciences, Sungkyunkwan University, Korea	2015
How the Mind Works: How Big Data Cognitive Science Unlocks the Mystery of the Human Mind, Invited 3-day lecture, King Abdullah University of Science & Technology, Saudi Arabia	2015
Big-data insights into cognitive representations of language processing, International Workshop on Advanced Learning Sciences, Taipei, Taiwan	2014
Social cognition, on the benefits of forgetting. School of Information Sciences & Tech, Penn State, PA	2012
Measuring and Modeling Language Convergence in Networks. TU Berlin, Germany	2011
Adaptation to conversation partners: On alignment in dialogue. IST, Penn State, PA	2010
Two-level, multi-strategy memory based control. Dynamic Stocks and Flows Modeling Challenge Symposium, Int'l Conf. on Cognitive Modeling, Manchester, UK	2009
Cognitive Models of Alignment in Dialogue. Bielefeld University, Germany	2008
Structural Priming: Studies of Syntax and Alignment in Dialogue Corpora. U. Paris 7, France	2007
Statistics tutorial: Linear mixed models. Dept. of Psychology, U. of Dundee, UK	2007
FASiL: A multimodal dialogue system for E-Mail. Institute of Linguistics, U. Potsdam, Germany	2005
Aspects of a situationalized multimodal human-computer interface. School of Computer Science, Carnegie Mellon University, Pittsburgh, PA	2004
Media Laboratory, Massachusetts Institute of Technology, Cambridge, MA	2004
School of Informatics, University of Edinburgh, UK	2004
UI on the Fly: Generating a multimodal user interface with functional unification grammar. Computer Science Department, Macquarie University, Sydney, Australia	2003