

# Table of Contents

<b>Introduction</b> .....	1
<b>Organizing Committee</b> .....	3
<b>Program Committee</b> .....	4
<b>Awards</b> .....	5
<b>Sponsors</b> .....	7
<b>Invited Plenary Presentations</b> .....	8
<b>Symposia</b> .....	9
<b>Tutorials and Workshops</b> .....	15
<b>Publication Based Talks</b> .....	18
<b>List of Accepted Papers</b> .....	20
<b>Workshops and Tutorials</b>	
<i>Tutorial on Model Comparison Methods</i> .....	44
Jay Myung, Mark Pitt	
<i>PRE-CogSci 2011 – Bridging the gap between computational, empirical and theoretical approaches to reference</i> .....	46
Kees van Deemter, Albert Gatt, Roger van Gompel, Emiel Krahmer	
<i>ACT-R Tutorial</i> .....	48
Niels Taatgen, Jelmer Borst	
<i>New Developments in the Cognitive Science of Religion. Hosted by the International Association for the Cognitive Science of Religion (IACSR)</i> .....	50
Robert N. McCauley, Armin W. Geertz, Joseph Bulbulia	
<i>Nengo and the Neural Engineering Framework: Connecting Cognitive Theory to Neuroscience</i> ....	52
Chris Eliasmith, Terrence Stewart	
<i>Tutorial on using the Psychology Experiment Building Language (PEBL) in the laboratory, the field, and the classroom</i> .....	54
Shane Mueller	
<i>Tutorial: Doing Bayesian Data Analysis with R and BUGS</i> .....	56
John Kruschke	
<i>Workshop: The Psychology of Negotiation: When, Why and How</i> .....	58
Hannah Riley Bowles, Laurie Beth Feldman, Janet van Hell, Judith Kroll, Suparna Rajaram	

<i>Workshop on Computational Models of Spatial Language Interpretation – CoSLI-2 in conjunction with CogSci 2011</i> .....	60
Joana Hois, Robert J. Ross, John Kelleher, John A. Bateman	
<i>Optimality Theory as a General Cognitive Architecture</i> .....	62
Tamas Biro, Judit Gervain	
<i>Perspective and Embodiment</i> .....	64
Holly Taylor, Elena Andonova	
<i>How to use Mechanical Turk for Cognitive Science Research</i> .....	66
Winter Mason, Siddharth Suri	
<i>Half-Day Workshop on Social Computing and Collective Intelligence</i> .....	68
Yasuaki Sakamoto, Wai-Tat Fu	
<i>Doing Cognitive Science by Hand: A Tutorial on Computer Mouse-Tracking</i> .....	70
Jonathan Freeman, Rick Dale, Michael Spivey	
<i>Preparing and Presenting Complex Images for Perceptual Cognitive Studies</i> .....	72
Javid Sadr	
<i>Tutorial on the Icarus Cognitive Architecture</i> .....	74
Pat Langley, Dongkyu Choi	

**Keynote: Anjan Chatterjee**

<i>Space, Time and Causality: Some Neural Observations</i> .....	686
Anjan Chatterjee	

**Symposium: Finding your way: The cognitive science of navigation**

<i>Finding your way: The cognitive science of navigation</i> .....	76
Benjamin Kuipers, Neil Burgess, Russell Epstein, Verner P. Bingman, Francesca Pazzaglia	

**Education and Tutoring Systems**

<i>Does Teaching Experience Help? Differences in the Assessment of Tutees' Understanding Between Teacher Tutors and Student Tutors</i> .....	78
Stephanie Herppich, Jörg Wittwer, Matthias Nückles, Alexander Renkl	
<i>Measuring Learning Progress via Self-Explanations versus Problem Solving - A Suggestion for Optimizing Adaptation in Intelligent Tutoring Systems</i> .....	84
Christine Otieno, Rolf Schwonke, Alexander Renkl, Vincent Alevén, Ron Salden	
<i>Exploring the Assistance Dilemma: The Case of Context Personalization</i> .....	90
Candace Walkington, Keith Maull	
<i>An Investigation of Accuracy of Metacognitive Judgments during Learning with an Intelligent Multi-Agent Hypermedia Environment</i> .....	96
Reza Feyzi Behnagh, Zohreh Khezri, Roger Azevedo	
<i>Modeling Abstract Numeric Relations Using Concrete Notations</i> .....	102
David Landy, David Brookes, Ryan Smout	

## Human Memory

- Modeling Multitrial Free Recall with Unknown Rehearsal Times* ..... 108  
James Pooley, Michael Lee, William Shankle
- Criterion Setting and the Dynamics of Recognition Memory* ..... 114  
Gregory Cox, Richard Shiffrin
- N-back Training Task Performance: Analysis and Model* ..... 120  
J. Isaiah Harbison, Sharona M. Atkins, Michael R. Dougherty
- Construction in Semantic Memory: Generating Perceptual Representations With Global Lexical Similarity* ..... 126  
Brendan Johns, Michael Jones
- Does retrieval require effort? Effects of memory strength on pupil dilation.* ..... 132  
Jelle R. Dalenberg, Hedderik van Rijn

## Philosophy

- Apparent Paradoxes in Moral Reasoning; Or how you forced him to do it, even though he wasn't forced to do it.* ..... 138  
Jonathan Phillips, Liane Young
- A Comparison of Nepalese and American Children's Concepts of Free Will* ..... 144  
Nadia Chernyak, Tamar Kushnir, Katherine Sullivan, Qi Wang
- Is Instinct Rational? Are Animals Intelligent? An Abductive Account* ..... 150  
Lorenzo Magnani
- Conscious Intentions* ..... 156  
Anthony Dardis
- Reward Prediction Error Signals are Metarepresentational* ..... 161  
Nicholas Shea

## Symposium: More than just logic tasks: New approaches to understanding reasoning

- More than just logic tasks: New Approaches to understanding Reasoning* ..... 167  
Magda Osman, Wim De Neys

## Symposium: Being where? Putting cognition, science and realism together again

- What Should we Be Realist about in Cognitive Science?* ..... 170  
Fred Hasselman, Rick Dale, John Holden, Tony Chemero, Michael Seevinck, Ralf Cox, Eric Dietrich

## Visual perception and memory

- Agency and Rhythmic Coordination: Are We Naught but Moving Dots?* ..... 172  
Charles Coey, Manuel Varlet, Richard Schmidt, Michael Richardson
- Distributional and Temporal Properties of Eye Movement Trajectories in Scene Perception* ..... 178  
Theo Rhodes, Christopher Kello, Bryan Kerster
- Optimal Models of Human Multiple-Target Visual Search* ..... 184  
Matthew S. Cain, Ed Vul, Kait Clark, Stephen R. Mitroff

<i>An Ideal Observer Model of Visual Short-Term Memory Predicts Human Capacity–Precision Tradeoffs</i> .....	190
Chris R. Sims, Robert A. Jacobs, David C. Knill	
<b>Learning and cognitive development</b>	
<i>Infants Use Social Signals to Learn from Unfamiliar Referential Cues</i> .....	196
Rachel Wu, Natasha Kirkham, Kristen Swan, Teodora Gliga	
<i>Toddlers’ understanding of prediction, intervention, and means of transmission: When psychological outcomes are easier than physical ones</i> .....	201
Paul Muentener, Daniel Friel, Laura Schulz	
<i>Modeling the Logarithmic-To-Linear Shift In Representations Of Numerical Magnitudes</i> .....	207
Leif Kåre Lende, Niels Taatgen	
<i>Ghosts of Theories Past: The Ever-Present Influence of Long-Discarded Theories</i> .....	213
Andrew Shtulman, Joshua Valcarcel	
<b>Modeling cognitive development</b>	
<i>Templatic features for modeling phoneme acquisition</i> .....	219
Emmanuel Dupoux, Guillaume Beraud-Sudreau, Shigeki Sagayama	
<i>Multisensory Associative-Pair Learning: Evidence for ‘Unitization’ as a specialized mechanism</i> ..	225
Elan Barenholtz, Meredith Davidson, David Lewkowicz	
<i>The inception of simulation: a hypothesis for the role of dreams in young children</i> .....	231
Serge Thill, Henrik Svensson	
<i>An Embodied Developmental Robotic Model of Interactions between Numbers and Space</i> .....	237
Marek Rucinski, Angelo Cangelosi, Tony Belpaeme	
<b>Concepts and categories</b>	
<i>A Comparison of Three Measures of the Association Between a Feature and a Concept</i> .....	243
Matthew Zeigenfuse, Michael Lee	
<i>Graded structure in adjective categories</i> .....	249
Simon De Deyne, Wouter Voorspoels, Steven Verheyen, Dan Navarro, Gert Storms	
<i>Incremental Models of Natural Language Category Acquisition</i> .....	255
Trevor Fountain, Mirella Lapata	
<i>Salient in the mind, salient in prosody</i> .....	261
Constantijn Kaland, Emiel Krahmer, Marc Swerts	
<b>Situated cognition</b>	
<i>Building Cognition: The Construction of External Representations for Discovery</i> .....	267
Sanjay Chandrasekharan, Nancy J. Nersessian	
<i>Distributed Cognition and Insight Problem Solving</i> .....	273
Frederic Vallee-Tourangeau, Anna Weller, Gaelle Villejoubert	
<i>Interactive Coin Addition: How Hands Can Help Us Think</i> .....	279
Hansjörg Neth, Stephen J. Payne	

<i>Multisensory Sensemaking: Children's Exploratory Behavior has Organizing Structure at Micro- and Macro-scales</i> .....	285
Nancy Owens Renner	
<b>Symposium: Interactivity and thought</b>	
<i>Interactivity and Thought</i> .....	290
David Kirsh, Susan Goldin-Meadow, Herb Clark, Yvonne Rogers	
<b>Symposium: The development of spatial cognition during childhood</b>	
<i>The Development of Spatial Cognition During Childhood: Extending Understanding of Perception, Memory, Language, Maps, and Gestures</i> .....	292
Anne Schutte, Heidi Fleharty, Alycia Hund, David Uttal, Megan Sauter, Nina Simms, Dedre Gentner	
<b>Instruction and teaching</b>	
<i>Pretesting with Multiple-choice Questions Facilitates Learning</i> .....	294
Jeri Little, Elizabeth Bjork	
<i>Designing learning materials to foster transfer of principles</i> .....	300
Lennart Schalk, Henrik Saalbach, Elsbeth Stern	
<i>The Role of Comparison in Mathematics Learning</i> .....	306
Shanta Hattikudur, Martha Alibali	
<i>The Effects of Peer Communication with Diagrams on Students' Math Word Problem Solving Processes and Outcomes</i> .....	312
Yuri Uesaka, Emmanuel Manalo	
<b>Acquiring syntactic structure</b>	
<i>Functional Biases in Language Learning: Evidence from Word Order and Case-Marking Interaction</i> .....	318
Maryia Fedzechkina, T. Florian Jaeger, Elissa L. Newport	
<i>Semantic Regularities in Grammatical Categories: Learning Grammatical Gender in an Artificial Language</i> .....	324
Jelena Mirkovic, Sarah Forrest, Gareth Gaskell	
<i>Multimodal Transfer of Repetition Patterns in Artificial Grammar Learning</i> .....	330
Sara Finley, Morten Christiansen	
<i>Storage and computation in syntax: Evidence from relative clause priming</i> .....	336
Melissa Troyer, Timothy J. O'Donnell, Evelina Fedorenko, Edward Gibson	
<b>Cognitive architectures and formal modeling</b>	
<i>A Memory-Based Account of the Spatial Prisoner's Dilemma</i> .....	342
Chenna Reddy Cotla	
<i>Categorial compositionality continued: A category theory explanation for quasi-systematicity</i> ....	348
Steven Phillips, William Wilson	

<i>Learning to perceive time: A connectionist, memory-decay model of the development of interval timing in infants</i> .....	354
Caspar Addyman, Robert French, Denis Mareschal, Elizabeth Thomas	
<i>Racing for the City: The Recognition Heuristic and Compensatory Alternatives</i> .....	360
Katja Mehlhorn, Julian N. Marewski	
<b>Processing complex information and inference</b>	
<i>Naive Inference viewed as Computation</i> .....	366
Chris Thornton	
<i>The Influence of Learner Characteristics on Conducting Scientific Inquiry Within Microworlds</i> .	372
Janice Gobert, Juelaila Raziuddin, Michael Sao Pedro	
<i>Which Parts of Scientific Explanations are Most Important?</i> .....	378
Benjamin Rottman, Frank Keil	
<i>Effects of Aging and Individual Differences on Credibility Judgment of Online Health Information</i>	384
Q. Vera Liao, Wai-Tat Fu	
<b>Emotions from physical states to social interactions</b>	
<i>Affective and Non-affective Meaning in Words and Pictures</i> .....	390
Vicky Tzuyin Lai, Peter Hagoort, Daniel Casasanto	
<i>Reverse Appraisal: Inferring from Emotion Displays who is the Cooperator and the Competitor in a Social Dilemma</i> .....	396
Celso de Melo, Peter Carnevale, Jonathan Gratch	
<i>Dynamical Emotions: Bodily Dynamics of Affect during Problem Solving</i> .....	402
Sidney D'Mello	
<i>Simplicity Effects in the Experience of Near-Miss</i> .....	408
Jean-Louis Dessalles	
<b>Symposium: Place holder structure and numerical computation</b>	
<i>Placeholder structure and numerical computation</i> .....	414
David Barner, Neon Brooks, Michael Frank, Elizabet Spaepen	
<b>Spatial representation</b>	
<i>The Schematic Representation of Spatial Relations: Evidence from Group and Single-Case Lesion Studies</i> .....	417
Alexander Kranjec, Prin Amorapanth, Anjan Chatterjee	
<i>Priming Spatial Perspective</i> .....	423
Elena Andonova, Kenny R. Coventry	
<i>A computational theory of human perceptual mapping</i> .....	429
Wai Yeap	
<i>Beyond the retina: Evidence for a face inversion effect in the environmental frame of reference</i> .	435
Nicolas Davidenko, Stephen Flusberg	

## Modeling child cognition

- The emergence of probabilistic reasoning in very young infants* ..... 441  
Stephanie Denison, Christie Reed, Fei Xu
- Learning to Balance a Beam: The Effect of Instability* ..... 447  
David Pfeiffer, Heidi Kloos, Daniel Bullard
- In the Eyes of the Beholder: What Eye-Tracking Reveals About Analogy-Making Strategies in Children and Adults* ..... 453  
Jean-Pierre Thibaut, Robert M. French, Angélique Missault, Yannick Gerard, Yannick Glady
- Using Manual Rotation and Gesture to Improve Mental Rotation in Preschoolers* ..... 459  
Raedy Ping, Kristin Ratliff, Elizabeth Hickey, Susan Levine

## Communication and evolution of language

- The computational costs of recipient design and intention recognition in communication* ..... 465  
Mark Blokpoel, Johan Kwisthout, Todd Wareham, Pim Haselager, Ivan Toni, Iris van Rooij
- The emergence of procedural conventions in dialogue* ..... 471  
Gregory Mills
- Language evolution is shaped by the structure of the world: An iterated learning analysis* ..... 477  
Amy Perfors, Daniel Navarro
- Cultural emergence of combinatorial structure in an artificial whistled language* ..... 483  
Tessa Verhoef, Simon Kirby, Carol Padden

## Computational models of language comprehension

- Modeling Acute and Compensated Language Disturbance in Schizophrenia* ..... 489  
Uli Grasemann, Ralph Hoffman, Risto Miikkulainen
- A Pseudo-Deterministic Model of Human Language Processing* ..... 495  
Jerry Ball
- Effects of Filler-gap Dependencies Working Memory Requirements for Parsing* ..... 501  
William Schuler
- Episodic grammar: a computational model of the interaction between episodic and semantic memory in language processing* ..... 507  
Gideon Borensztajn, Willem Zuidema

## Measuring concepts and categories

- Concept Learning and Modal Reasoning* ..... 513  
Charles Kemp, Faye Han, Alan Jern
- Do words reveal concepts?* ..... 519  
Barbara Malt, Eef Ameel, Silvia Gennari, Mutsumi Imai, Noburo Saji, Asifa Majid
- Associative and Categorical Priming in Recognition of Individuals* ..... 525  
Barbara Bazzanella, Paolo Bouquet

<i>Contrast in natural language concepts: An exemplar-based approach</i> .....	531
Wouter Voorspoels, Gert Storms, Wolf Vanpaemel	

**Perceptual processes**

<i>The Thickness of Musical Pitch: Psychophysical evidence for the Whorfian hypothesis</i> .....	537
Sarah Dolscheid, Shakila Shayan, Asifa Majid, Daniel Casasanto	
<i>Humans use different statistics for sequence analysis depending on the task</i> .....	543
Dinis Gokaydin, Anna Ma-Wyatt, Daniel Navarro, Amy Perfors	
<i>Examining the Role of Object Size in Judgments of Lateral Separation</i> .....	549
Robert Thomson, Guy Lacroix	
<i>Basic Information Processing Effects from Perceptual Learning in Complex, Real-World Domains</i>	555
Khanh-Phuong Thai, Mettler Everett, Kellman Philip	

**Rumelhart Lecture: Judea Pearl**

<i>The algorithmization of counterfactuals</i> .....	3051
Judea Pearl	

**Posters**

<i>Coordinating Touch and Vision to Learn What Objects Look Like</i> .....	562
Walter Talbott, Ian Fasel, Javier Molina, Virginia de Sa, Javier Movellan	
<i>When Lighting a Candle Becomes a Superstition: Analogical Recategorization through the Application of Relational Categories</i> .....	568
Nicolás Oberholzer, Máximo Trench, Ricardo Minervino	
<i>Unifying Deduction, Induction, and Analogy by the AMBR Model</i> .....	574
Georgi Petkov, Ivan Vankov, Boicho Kokinov	
<i>Exploring Visual Attention in Musicians: Temporal, Spatial and Capacity Considerations</i> .....	580
Ahnate Lim, Scott Sinnett	
<i>Forward Physics: How people learn and generalize novel dynamical models</i> .....	586
Tomer Ullman, Noah Goodman, Josh Tenenbaum	
<i>The Onset of Syntactic Bootstrapping in Word Learning: Evidence from a Computational Study</i>	587
Afra Alishahi, Pirita Pirita Pyykkönen	
<i>Modeling Verb Lexicalization Biases using Hierarchical Bayesian Models</i> .....	593
Catherine Havasi, Robert Speer	
<i>English and Mandarin Speakers May Think about Time Differently, but for a Different Reason</i> ..	599
Jenn-Yeu Chen, Bishan Liang, Pádraig G. O’Seaghdha, Xishan Huang	
<i>Dreaming Cogniton and Acculturation Processes</i> .....	600
Sang Bok Lee	
<i>Syntactic Biases in Intentionality Judgments</i> .....	601
Brent Strickland, Matt Fischer, Elodie Peyroux, Frank Keil	

<i>Color Language Does Not Affect Chromatic Thresholds</i> .....	607
Alexandra Clifford, Paul T. Sowden, Ian R.L. Davies	
<i>The Significance of Memory Retrieval in Perceptual Interference</i> .....	608
Ava Santos, Lawrence Barsalou	
<i>A Study of the Pragmatic Prototypical Categories of Rhetorical Questions</i> .....	609
Hongbo Chen	
<i>Towards a Categorization-Based Model of Similarity</i> .....	614
Steven Verheyen, Gert Storms	
<i>Credibility of Stories about Design History</i> .....	620
Sergio Chaigneau, Cristián Coó, Vicente Soto	
<i>What Varying the Learning Task and Category Structure Reveals About Inference Learning</i> .....	625
Seth Chin-Parker	
<i>Observational Category Learning as a Path to More Robust Generative Knowledge</i> .....	631
Kimery R. Levering, Kenneth J. Kurtz	
<i>Perceptual and Conceptual Cues in Classification and Inference Tasks</i> .....	637
Clare Sims, Eliana Colunga	
<i>Types of Cognitive Content and the Role of Relational Processing in the Illusion of Explanatory Depth</i> .....	643
Graham Silk-Eglit, Kenneth Kurtz	
<i>Does Category Labeling Lead to Forgetting?</i> .....	649
Nathaniel Blanco, Todd Gureckis	
<i>Priming Effects of Religious Concepts on Moral Judgment: Between Mean Values and Variation</i>	655
Ulrik Lyngs	
<i>Neural Cognitive Modelling: A Biologically Constrained Spiking Neuron Model of the Tower of Hanoi Task</i> .....	656
Terrence Stewart, Chris Eliasmith	
<i>Implementation of a Prediction-Based Cognitive Framework</i> .....	662
Brian Colder	
<i>Representations of knowledge states when writing: Keeping the reader's mind in mind</i> .....	663
Joan Peskin, Carly Prusky, Julie Comay	
<i>Extracting statistical relations from noisy visual scenes</i> .....	664
Kristen Swan, Natasha Kirkham	
<i>Incomplete sampling leads to broader category generalizations in preschoolers</i> .....	665
Andrew G. Young, Sunae Kim, Charles W. Kalish	
<i>What Can You Learn From A Deceptive Teacher? Sample But Not Population Statistics</i> .....	666
Jordan Thevenow-Harrison, Charles Kalish	
<i>Experience Modifies Neural Basis of Language: Evidence from Early-Blind Children</i> .....	667
Marina Bedny, Hilary Richardson, Rebecca Saxe	

<i>The role of adult input on numeracy development</i> .....	668
Joanne Lee, Donna Kotsopoulos, Samantha Makosz, Anupreet Tumber	
<i>Do children and adults learn forward and inverse conditional probabilities together?</i> .....	669
Charles Kalish	
<i>The Influence of Co-occurrence Probability on Knowledge Generalization in Preschool-Age Children</i> .....	674
Bryan Matlen, Anna Fisher, Karrie Godwin	
<i>Subitizing and Mathematics Performance in Early Childhood</i> .....	680
Cathy Yun, Amanda Havard, Dale Farran, Mark Lipsey, Carol Bilbrey, Kerry Hofer	
<i>Neural Basis of Event Words</i> .....	685
Swetha Dravida, Marina Bedny, Rebecca Saxe	
<i>Space, Time and Causality: Some Neural Observations</i> .....	686
Anjan Chatterjee	
<i>A Corpus Analysis of Strategy Video Game Play in Starcraft: Brood War</i> .....	687
Joshua Lewis, Patrick Trinh, David Kirsh	
<i>Using a Cognitive Model for an In-Depth Analysis of the Tower of London</i> .....	693
Rebecca Albrecht, Sven Brüssow, Christoph Kaller, Marco Ragni	
<i>Competitive Mate Choice: How Need for Speed Beats Quests for Quality and Harmony</i> .....	699
Hansjörg Neth, Simeon Schächtele, Sulav Duwal, Peter M. Todd	
<i>A Computational Study of Late Talking in Word-Meaning Acquisition</i> .....	705
Aida Nematzadeh, Afsaneh Fazly, Suzanne Stevenson	
<i>Asymmetry and Similarity Phenomena in Backwards Masking Experiments Suggest Internal Reconstruction.</i> .....	711
Tsvi Achler, Luis Bettencourt, Garrett Kenyon	
<i>Audience Design in the Generation of References to Famous People</i> .....	712
Roman Kutlak, Kees van Deemter, Chris Mellish	
<i>(Un)conscious Updating? Conscious and Unconscious Reward Cues Can Affect Executive Control</i> .....	718
Gaëlle Bustin, Rémi Capa, Axel Cleermans, Michel Hansenne	
<i>The role of reliability in causal belief updating</i> .....	719
William Jimenez-Leal, Christian Gaviria, Miguel Uribe	
<i>Blame the Skilled</i> .....	720
Tobias Gerstenberg, Anastasia Ejova, David Lagnado	
<i>A Causal Spectrum: A Causal Model based on Multi-faceted Notion of Causality</i> .....	726
Marzieh Asgari-Targhi	
<i>Creativity, expertise and the questions people ask in engineering design</i> .....	727
Ellen Campana	
<i>Interaction between Body and Environment in Insight Problem Solving</i> .....	728
Keiga Abe	

<i>Grounding lexical choice in Bayesian inference</i> .....	733
Kyle Albarado, Michael Kalish	
<i>Towards Cognitive Models of Communication and Group Intelligence</i> .....	734
David Reitter, Christian Lebiere	
<i>The effect of risk attitude on product choices</i> .....	740
Ikuya Nomura, Yasushi Onuki, Kazuyuki Samejima, Yuichi Washida, Kazuhiro Ueda, Hiroyuki Okada, Takashi Omori	
<i>Unreliable and Anomalous: How the Credibility of Data Affects Belief Revision</i> .....	741
Jesse R. Sparks, David N. Rapp	
<i>Tracing the Process of Rating Decisions through Cursor Movements</i> .....	747
Kenpei Shiina	
<i>Associative memory models provide a possible mechanism for both heuristics and biases and Bayesian inference</i> .....	753
Andrés Pomi	
<i>Meaning, Action, and History: Spatial Language as a Dynamic System</i> .....	754
Holger Schultheis, Kenny Coventry	
<i>Achievement Goals and Learning in a Lecture Course: Moving Towards Mastery Goals Predicts Deeper Learning</i> .....	755
Daniel Belenky, Timothy Nokes, Matthew Bernacki	
<i>Framing influences aggregate judgments of learning</i> .....	756
Corinne Townsend, Evan Heit	
<i>Categorizing Emotion in Spoken Language: An Analysis of Semantic and Prosodic Contributions to Emotional Communication</i> .....	762
Janine Fitzpatrick, John Logan	
<i>Controlling the Writing Process: How an Adolescent with Specific Learning Disabilities uses Metacognition to Compose Expository Discourse</i> .....	768
Delayne Connor	
<i>Visualizing the persistence of conversations within a student co-blogging community</i> .....	769
Seth Rogers, Joshua Silverman, Rick Alterman	
<i>The moderating effect of problem difficulty on the sleep role on insight problem problem</i> .....	770
Ut Na Sio, Padraic Monaghan, Tom Ormerod	
<i>The use of lexical and duration information in segmenting speech with unclear word boundaries</i> .	771
Colin Widmer, Dahee Kim, Christine Szostak, Mark Pitt	
<i>The Category-Order Effect in Supraspan Recall</i> .....	772
Lisa Boucher, Jordan Schoenherr, Robert Thosmon, Guy Lacroix	
<i>Dissociation of Thematic, Taxonomic, and Integrative Relations</i> .....	773
Lara L. Jones, Zachary Estes, Sabrina Golonka	
<i>The Social-Pragmatics of Category Learning</i> .....	774
John Voiklis, James Corter	

<i>Active Cross-situational Learning</i> .....	775
George Kachergis, Chen Yu, Richard Shiffrin	
<i>Tort Reform: Negligence Explains Attributions of Intentionality for Negative Side Effects</i> .....	776
John Voiklis, Jeffrey Nickerson	
<i>Looking at the Social Dynamics of Viewpoint</i> .....	777
Michelle D. Greenwood, Justin L. Matthews, Teenie Matlock, Michael J. Spivey	
<i>Controlling Stable and Unstable Dynamic Decision Making Environments</i> .....	778
Magda Osman, Maarten Speekenbrink	
<i>Spatial biases in understanding descriptions of static scenes: The role of reading and writing direction</i> .....	784
Antonio Román, Abderrahman El Fathi, Julio Santiago	
<i>Retrieval Dynamics of In-the-Moment and Long-Term Statistical Word Learning</i> .....	789
Haley A. Vlach, Catherine M. Sandhofer	
<i>The effect of time pressure and the spatial integration of the stimulus dimensions on overall similarity categorization.</i> .....	795
Fraser Milton, Lotta Viika, Holly Henderson, Andy Wills	
<i>Cross-Language Priming in Chinese-English Bilinguals with Different Second Language Proficiency Levels</i> .....	801
Xiaowei Zhao, Ping Li, Youyi Liu, Xiaoping Fang, Hua Shu	
<i>The Effect of Prototyping and Critical Feedback on Fixation in Engineering Design</i> .....	807
Trina Kershaw, Katja Hölttä-Otto, Yoon Soo Lee	
<i>Are Category Labels Features or Naïve Assumption?</i> .....	813
Na-Yung Yu, Takashi Yamauchi	
<i>Adaptive Magnitude and Valence Biases in a Dynamic Memory Task</i> .....	819
George Kachergis, Gabriel Recchia, Richard Shiffrin	
<i>Strategy Changes as a Function of Task Complexity in Causal Structure Learning</i> .....	825
Motoyuki Saito, Tsuneo Shimazaki	
<i>Ad Hoc Cognition</i> .....	826
Daniel Casasanto, Gary Lupyan	
<i>Toward a Formal Model of the Shifting Relationship between Concepts and Contexts in Associative Thought</i> .....	827
Tomas Veloz, Liane Gabora	
<i>Motion influences children's attention to object properties during noun learning</i> .....	828
Simone Chin, Alan Kersten, Jodi-Ann Thomas	
<i>Memory Constraints in Infants' Statistical Word Learning</i> .....	829
Haley A. Vlach, Scott P. Johnson	
<i>Now You See It, Now You Dont: how social cues and questions misdirect our attention</i> .....	830
Robert Teszka, Alan Kingstone, Gustav Kuhn	

<i>Fractal Structure in Voluntary Eye Movements</i> .....	831
Charles Coey, Sebastian Wallot, Michael Richardson, Guy van Orden	
<i>Don't Look Now: The relationship between mutual gaze, task performance and staring in Second Life</i> .....	832
Sara Dalzel-Job, Jon Oberlander, Tim Smith	
<i>Turn-boundary projection: Looking ahead</i> .....	838
Marisa Tice, Tania Henetz	
<i>The Impact of User Reviews on Older and Younger Adults' Attitude towards Online Medication Information</i> .....	844
Q. Vera Liao, Wai-Tat Fu	
<i>The Effect of Repeated Cue Exposure on Post-Completion Errors</i> .....	850
Maartje Ament, Anita Lai, Anna Cox	
<i>Cognitive Representations and Enacting Actions in Computer Simulated Environments</i> .....	856
Devin Pierce, Shulan Lu, Derek Harter, Pratyush Kotturu, Paweena Kosito	
<i>A Natural Behavior Approach to the Recognition of Disoriented Objects</i> .....	861
Evan F. Risko, Joseph Chisholm, Alan Kingstone	
<i>How Long Have I Got? Making Optimal Visit Durations in a Dual-Task Setting</i> .....	862
George Farmer, Christian Janssen, Duncan Brumby	
<i>From Data Streams to Information Flow: Information Exchange in Child-Parent Interaction</i> ....	868
Heeyoul Choi, Chen Yu, Linda B. Smith, Olaf Sporns	
<i>Tailoring the Level of Detail in Task Instructions to Cognitive Style</i> .....	874
Caleb Strait, Patricia deWinstanley, Joy Hanna	
<i>A hybrid cognitive architecture based on the relationship between consciousness, memory and attention</i> .....	875
Eunsook Kim, Hyunjung Shin	
<i>Semantic innovations in lexicon: cognitive pragmatic interface</i> .....	876
Vera Zobotkina	
<i>The proper treatment of structured representations</i> .....	877
Katherine Livins, Leonidas Doumas	
<i>Adults and children fast-map novel connections between words.</i> .....	878
Arielle Borovsky, Kim Sweeney, Anne Fernald, Jeff Elman	
<i>How Far Can Indirect Evidence Take Us? Anaphoric One Revisited</i> .....	879
Lisa Pearl, Benjamin Mis	
<i>Statistical Learning of a Morse Code Language is Improved by Bilingualism and Inhibitory Ability</i>	885
James Bartolotti, Viorica Marian, Scott Schroeder, Anthony Shook	
<i>The modulation of word type frequency on hemispheric lateralization of visual word recognition: Evidence from modeling Chinese character recognition</i> .....	891
Janet Hui-wen Hsiao, Kit Cheung	

<i>A Liquid-State Model of Variability Effects in Learning Nonadjacent Dependencies</i> .....	897
Hartmut Fitz	
<i>Learning Object Names in Real Time with Little Data</i> .....	903
Jon Stevens	
<i>Learning a graph-structured generative probabilistic grammar of linguistic experience</i> .....	909
Oren Kolodny, Arnon Lotem, Shimon Edelman	
<i>Children's Developing Understanding of Spatial Metaphors for Time</i> .....	910
Lauren Stites, Seyda Özçalışkan	
<i>The memory load of assembling syntactic phrases in mono clausal sentences</i> .....	911
David James Lobina, José Eugenio García-Albea	
<i>Text-Based Similarity Measures and Attitude Scale Development</i> .....	912
John Ford	
<i>Generics Are a Cognitive Default: Evidence From Sentence Processing</i> .....	913
Meredith Meyer, Susan A. Gelman, Sarah M. Stilwell	
<i>Visual attention during spatial language comprehension: Reference alone isn't enough</i> .....	919
Michele Burigo, Pia Knoeferle	
<i>Language comprehension is sensitive to changes in the reliability of lexical cues</i> .....	925
Alex Fine, T. Florian Jaeger	
<i>Why readers regress to previous words: A statistical analysis</i> .....	931
Klinton Bicknell, Roger Levy	
<i>Mental Simulation of Spatial Perspective during Sentence Comprehension</i> .....	937
Sarah Schwarzkopf, Helmut Weldle, Daniel Müller, Lars Konieczny	
<i>Spoken Nursery Rhymes Have a Fractal Rhythmic Structure - Evidence from Patterns of Slow Amplitude Modulation (AM)</i> .....	943
Victoria Leong, Richard Turner, Michael Stone, Usha Goswami	
<i>Generalized Event Knowledge in Logical Metonymy Resolution</i> .....	944
Alessandra Zarcone, Sebastian Pado	
<i>Exploring Contextual Influences on Word Meaning via Multiple-Level Similarity Judgments</i> .....	950
Nicholas Gaylord	
<i>Integrating the Horizontal and Vertical Cultural Transmission of Novel Communication Systems</i>	956
Carrie Theisen-White, Simon Kirby, Jon Oberlander	
<i>An examination of the effects of interruptions and learner characteristics on self-regulated learning during web-based instruction</i> .....	962
Jessica Federman, Bradford Bell	
<i>Spatial and Temporal Cues in Statistical Cross Situdational Learning</i> .....	963
Roy Seo, Damian Fricker, Chen Yu	
<i>Simultaneous Online Tracking of Adjacent and Non-adjacent Dependencies in Statistical Learning</i>	964
Loan Vuong, Antje Meyer, Morten Christiansen	

<i>Investigating how infants learn to search in the A-not-B task</i> .....	970
Hanna Popick, Melody Dye, Natasha Kirkham, Michael Ramscar	
<i>Coincidence Detection: Towards an alternative to Synaptic Plasticity</i> .....	976
Francis Jeanson	
<i>Attentional Selection in the Unsupervised Generalized Context Model</i> .....	977
Emmanuel Pothos, Todd Bailey	
<i>Adaptive uses of random criterion: The largest number problem, the two-envelope problem, and the anchoring and adjustment heuristic</i> .....	978
Bruce Burns	
<i>MultiDimensional (MD) Frame: The Basic Elements of Memory Structure</i> .....	984
Makoto Toyota, Muneo Kitajima	
<i>The Role of Mental Elaborations in Making Counterintuitive Ideas Memorable</i> .....	985
Mary Harmon-Vukic, Afzal Upal, Kelly Sheehan	
<i>Exploration and Exploitation in Memory Search Across the Lifespan</i> .....	991
Thomas Hills, Rui Mata, Andreas Wilke, Gregory Samanez-Larkin	
<i>Context and Causal Structure Enhance Memory for Clinical Details</i> .....	997
Sarah L. Devantier, John Paul Minda, Mark Goldszmidt, Aimee L. Skye, Nicole N. Woods	
<i>Modeling Maqam Relations with Self-Organizing Maps</i> .....	1003
Nart B. Atalay, Seyit Yore	
<i>Memory for musical sequences beyond pitch: Grammatical and associative processes</i> .....	1004
Richard Ashley	
<i>Annotation as a (Meta)Cognitive Aid in Western Art Music Performance</i> .....	1005
Linda T. Kaastra	
<i>Can Neural Adaptation Explain Word Choice?</i> .....	1006
Jörn Klinger, Julien Mayor	
<i>Relationship between Theory of Mind and Figurative Language Comprehension in Schizophrenia when controlling for IQ and Executive Functions</i> .....	1012
Jose M. Gavilan, Jose E. García-Albea	
<i>Metacognitive Judgments, Study-Time Allocation and Inferences: The Effect of Multimedia Discrepancies</i> .....	1013
Candice Burkett, Roger Azevedo	
<i>Detecting deviations from randomness</i> .....	1019
Jiaying Zhao, Daniel Osherson	
<i>Effects of scene variation on referential overspecification</i> .....	1025
Ruud Koolen, Martijn Goudbeek, Emiel Krahmer	
<i>A Computational Model of Auditory Perceptual Learning: Predicting Learning Interference Across Multiple Tasks</i> .....	1031
David Little, Bryan Pardo, Beverly Wright	
<i>The Role of Hierarchy in Learning to Categorize Images</i> .....	1037
Reza Shahbazi, David Field, Shimon Edelman	

<i>Psychopaths' Morality. Ethicocentrism, Free Will, and the Fear of Decriminalization</i> .....	1043
Lorenzo Magnani, Emanuele Bardone, Tommaso Bertolotti	
<i>The Virtues and Vices of Biased Rationality: An Eco-Cognitive Account</i> .....	1049
Emanuele Bardone, Lorenzo Magnani	
<i>Layers of Joint Commitments in Interpersonal Communication</i> .....	1055
Antonella Carassa, Marco Colombetti	
<i>Effects of unrecognized hints and metacognitive control in insight problem solving</i> .....	1061
Masasi Hattori, Steven Sloman, Ryo Orita	
<i>Differences in Infants' Perception of Objects' Internal Energy as a Function of Their Roles in a Causal Event</i> .....	1062
Yevdokiya Yermolayeva, David H. Rakison	
<i>Does word confusability explain reversal of word-frequency effects in lexical decisions?</i> .....	1063
Anne Gilman	
<i>Semantic, Aesthetic, and Cognitive Effects of Flashbacks in Film</i> .....	1064
Aline Sevenants, Géry d'Ydewalle	
<i>Looking at Nothing Diminishes with Practice</i> .....	1070
Agnes Scholz, Katja Mehlhorn, Franziska Bocklisch, Josef Krems	
<i>Intentionality, Foreseeability, and Cognitive Load Differently Affect the Cause and Blame Judgments</i> .....	1076
Doehee Kim, Kyung Soo Do, Hanna Kim	
<i>Explanatory Schemata as Determinants of Performance in a Syllogistic Reasoning Task</i> .....	1077
Boucher Lisa, Schoenherr Jordan, Thomson Robert, Lacroix Guy	
<i>Truth Table Tasks: Directionality and Negation-Type</i> .....	1078
Aline Sevenants, Kristien Dieussaert, Walter Schaeken	
<i>A closer look at moral dilemmas: latent structure of morality and the difference between the trolley and footbridge dilemmas</i> .....	1084
Kuninori Nakamura	
<i>Computing with rational numbers: Not easy even for college students</i> .....	1090
Jennifer Jacobs, Rochel Gelman	
<i>Remembering connectives: Visual-auditory consonance influences representations in time</i> .....	1091
Bradley Morris, Rebecca Neiman	
<i>Reconciling Competing Accounts of Picture Perception from Art Theory and Perceptual Psychology via the Dual Route Hypothesis</i> .....	1097
Coppin Peter	
<i>A View of Language from Somewhere in Particular</i> .....	1098
Jarek Sierschynski	
<i>Plan and Situated Action Relationship as a Function of Activity Category: An Experimental Approach</i> .....	1099
Walid Bahamdan, Rob Duimering	

<i>Therapeutic Animatron: Interaction Framework for Making People Happy</i> .....	1100
Insu Song, Denise Dillon	
<i>Beliefs are represented as neither maps nor sentences in the head: "Format blind" processing and specialization for theory of mind</i> .....	1101
Adam Cohen, Tamsin German	
<i>THE COGNITIVE EFFECT OF PERSPECTIVE-TAKING ON SOCIAL COORDINATION</i> .	1102
Bruno Galantucci, Ariel Malka, Carrie Theisen, Ben Rosenzweig, Kelly Gerin, Mordechai Ambrose	
<i>The Reverse-Chameleon Effect: Negative social consequences of anatomical mimicry.</i> .....	1103
Laura Staum Casasanto, Tom Gijssels, Daniel Casasanto	
<i>Spontaneous goal inference without concrete external goals</i> .....	1104
Adena Schachner, Susan Carey	
<i>The Repetition-Break Plot Structure: A Tool for Persuasion</i> .....	1105
Jeffrey Loewenstein, Rajagopal Raghunathan, Chip Heath	
<i>Spatial Cognition Adapts to Social Context</i> .....	1111
Nicholas Duran, Rick Dale	
<i>Experts' and Novices' Use of Gesture in Explaining Geologic Maps</i> .....	1117
Ilyse Resnick, Kinnari Atit, Tilbe Goksun, Thomas F. Shipley	
<i>Allocentric Spatial Memory in Major Depressive Disorder</i> .....	1118
Jonna Nilsson, Kenny Coventry, Nicol Ferrier	
<i>How Do Younger and Older Adults Use Cues and Landmarks to Navigate?</i> .....	1119
Scott Moffat	
<i>How Spoken and Signed Language Structure Space Differently</i> .....	2417
Leonard Talmy	
<i>The Number, Type, and Configuration of Landmarks Distort Distance Estimates</i> .....	1121
Michael E. Roberts, Terri L. Bonebright, Dillen Wischmeier	
<i>Cognitive processes underlying the continuity effect in spatial reasoning</i> .....	1127
Jelica Nejasnic, Antje Krumnack, Leandra Bucher, Markus Knauff	
<i>Spatial Cognition and Perception of Large Scale Object Constellations: Evidence from Search Domain Analysis in Urban Environment</i> .....	1133
Jurgis Škilters, Ģirts Burgmanis, Zaiga Krišjāne, Linda Apse	
<i>A Fresh Look at Vocabulary Spurts</i> .....	1134
Frederic Dandurand, Thomas Shultz	
<i>Phrase Structure Priming Across Sentences: Facilitation or Reconfiguration?</i> .....	1140
Alexandra K. Frazer, Pádraig G. O'Seaghdha	
<i>A cognitive computational model of eye movements investigating visual strategies on textual material</i> .....	1146
Benoît Lemaire, Anne Guérin-Dugue, Thierry Baccino, Myriam Chanceaux, Léa Pasqualotti	

<i>Visualizing Cross Sections: Training Spatial Thinking Using Interactive Animations</i> .....	1152
Cheryl Cohen	
<i>Finger Based Representation of Numbers: Correlation Between Finger Tapping Ability and Digit Span</i> .....	1153
Firat Soylu, Sharlene Newman	
<i>Revising beliefs about imagined relations: the role of logic and content</i> .....	1154
Alexandra Chambers, Russell Revlin	
<i>From preferences to choices and back again: evidence for human inconsistency and its implications</i> .....	1155
Christopher Lucas, Charles Kemp, Thomas Griffiths	
<i>The importance of alignable differences in teaching linear measurement</i> .....	1156
Mee-Kyoung Kwon, Susan Cohen Levine, Kristin Ratliff, Camille Snyder	
<i>Asymmetric Intercortical Projections Support The Learning Of Temporal Associations</i> .....	1157
William Benjamin St. Clair, David C. Noelle	
<i>An Inhibited Recognition Performance for Explicitly Presented Target-Aligned Irrelevant Stimuli in the Auditory Modality</i> .....	1158
Andrew Dewald, Scott Sinnett	
<i>A Multimodal Investigation of Recognition Performance for Target-Aligned but Irrelevant Stimuli</i> .....	1164
Andrew Dewald, Scott Sinnett	
<i>The Dramatic Effect of Content on Children's Unless Reasoning: Pragmatic Modulation or Reconstruction?</i> .....	1170
Walter Schaeken, Aline Sevenants, Juan Garcia Madruga	
<i>Is enriching static-simultaneous visualizations with motion-indicating arrows helpful for learning about locomotion patterns?</i> .....	1176
Birgit Imhof, Katharina Scheiter, Jörg Edelman, Julian von Ulardt, Peter Gerjets	
<i>Phones and phonemes are conceptual blends, not cognitive letters</i> .....	1182
Robert Port	
<i>Analysis of Structural Relations among Perceptions on Good Instruction, Course Satisfaction, and Academic Achievement</i> .....	1188
Yeonhee So	
<i>Linguistic Structure Evolves to Match Meaning Structure</i> .....	1194
Monica Tamariz	
<i>The Dispersion of Eye Movements During Visual Imagery is Related to Individual Differences in Spatial Imagery Ability</i> .....	1200
Roger Johansson, Jana Holsanova, Kenneth Holmqvist	
<i>Rapid extraction of event participants in caused motion events.</i> .....	1206
Frances Wilson, Anna Papafragou, Ann Bungler, John Trueswell	
<i>Mathematical Cognition as Embodied Simulation</i> .....	1212
Firat Soylu	

<i>An fMRI Study of Zoning Out During Strategic Reading Comprehension</i> .....	1218
Jarrod Moss, Christian Schunn, Walter Schneider, Danielle McNamara	
<i>Implicit Racial Stereotypes may Temporarily Shift after Reading a Story</i> .....	1224
Maddalena Marini, Sandro Rubichi, Giuseppe Sartori	
<i>What are the boundary conditions of differentiation in episodic memory?</i> .....	1230
Adam Osth, Simon Dennis	
<i>Text Coherence and Judgments of Essay Quality: Models of Quality and Coherence</i> .....	1236
Scott Crossley, Danielle McNamara	
<i>Adults and school-aged children accurately evaluate sins of omission in pedagogical contexts</i> ....	1242
Hyowon Gweon, Hannah Pelton, Laura E. Schulz	
<i>Past Experience Influences Judgment of Pain: Prediction of Sequential Dependencies</i> .....	1248
Benjamin Link, Brittany Kos, Tor Wager, Michael Mozer	
<i>Conditional Relational Reasoning</i> .....	1254
Marco Ragni, Tobias Sonntag	

**Keynote: Barbara Landau**

<i>Language and Space: Momentary Interactions</i> .....	1815
Barbara Landau	

**Symposium: On counterfactuals and cognitive science: Rumelhart Prize Symposium in honor of Judea Pearl**

<i>On Counterfactuals and Cognitive Science: Rumelhart Prize Symposium in Honor of Judea Pearl</i>	1256
Steven Sloman, Judea Pearl, Nick Chater, Lance Rips, Jim Joyce, Stefan Kaufmann	

**Spatial cognition: Individual differences**

<i>Bodily Relativity: The body-specificity of language and thought</i> .....	1258
Daniel Casasanto	
<i>Spatial Demonstratives, Perceptual Space, and Linguistic Diversity</i> .....	1260
Kenny Coventry, Colin Hamilton, Debra Griffiths	
<i>Wayfinding and description strategies in an unfamiliar complex building</i> .....	1262
Thora Tenbrink, Evelyn Bergmann, Lars Konieczny	
<i>Effects of Using Mental and Manual Rotation Training on Mental and Manual Rotation Performance</i> .....	1268
Deanne M. Adams, Andrew T. Stull, Imme Roewer, Mary Hegarty	
<i>A Bayesian model of navigation in squirrels</i> .....	1274
Anna Waisman, Christopher Lucas, Thomas Griffiths, Lucia Jacobs	

**Decision making models**

<i>A value-relativistic decision theory predicts known biases in human preferences</i> .....	1280
Nisheeth Srivastava, Paul Schrater	

<i>The evolution of irrational decision-making: insights from non-human primates</i> .....	1286
Venkat Lakshminarayanan, Laurie Santos	
<i>The Wisdom of Crowds with Communication</i> .....	1292
Brent Miller, Mark Steyvers	
<i>A Cue Imputation Bayesian Model of Information Aggregation</i> .....	1298
Jennifer Trueblood, George Kachergis, John Kruschke	
<i>A Model-Based Approach to Measuring Expertise in Ranking Tasks</i> .....	1304
Michael Lee, Mark Steyvers, Mindy DeYoung, Brent Miller	

## **Social cognition**

<i>Searching Our Cognitive Social Networks: How We Remember Who We Know</i> .....	1310
Thomas Hills, Thorsten Pachur	
<i>To catch a liar: The effects of truthful and deceptive testimony on inferential learning</i> .....	1312
Robert Montague, Daniel J. Navarro, Amy Perfors, Russell Warner, Patrick Shafto	
<i>Motivational Influences on Attentional Scope</i> .....	1318
Ruby Nadler, John Paul Minda	
<i>Why Radicals Win the Newsday?: Ratcheting-up of Cultural Counterintuitiveness in Rumors and NRM Doctrine</i> .....	1324
M. Afzal Upal	
<i>Modeling Underlying Mechanisms of the Implicit Association Test</i> .....	1330
Boon-Kiat Quek, Andrew Ortony	

## **Symposium: The potential of quantum probability for modeling cognitive processes**

<i>The Potential of Quantum Probability for Modeling Cognitive Processes</i> .....	1336
Emmanuel Pothos, Jerome Busemeyer, Richard Shiffrin, Jennifer Trueblood, Zheng Wang, Reinhard Blutner, Harald Atmanspacher	

## **Symposium: Space (and time) for culture**

<i>Space (and Time) for Culture</i> .....	1338
Andrea Bender, Sieghard Beller, Giobanni Bennardo, Niclas Burenhult, Lisa Hüther, Kirill Istomin, Olivier Le Guen, Thora Tenbrink	

## **Learning in the classroom**

<i>Learning by Observing Tutorial Dialogue versus Monologue Collaboratively or Alone</i> .....	1340
Kasia Muldner, Keith Dybvig, Rachel Lam, Michelene Chi	
<i>How Reading Goals and Rhetorical Signals Influence Recipients' Recognition of Intertextual Conflicts</i> .....	1346
Marc Stadtler, Lisa Scharrer, Rainer Bromme	
<i>Explaining drives the discovery of real and illusory patterns</i> .....	1352
Joseph Jay Williams, Tania Lombrozo, Bob Rehder	
<i>How Brief Initial Inspection of a Picture May Foster Comprehension of Text</i> .....	1358
Alexander Eitel, Katharina Scheiter, Anne Schüler	

## Language processing: From perception to production

- The learnability of constructed languages reflects typological patterns* ..... 1364  
Harry Tily, Michael Frank, Florian Jaeger
- Selective attention and speech errors: Feature migration in time* ..... 1370  
Nazbanou Nozari, Gary Dell
- When Hearing Lips and Seeing Voices Becomes Perceiving Speech: Auditory-Visual Integration in Lexical Access* ..... 1376  
Rachel Ostrand, Sheila Blumstein, James Morgan
- Bilinguals activate words from both languages when listening to spoken sentences: Evidence from an ERP-study* ..... 1382  
Nicole Altvater-Mackensen, Nivedita Mani

## Category acquisition

- Comparisons in Category Learning: How Best to Compare For What* ..... 1388  
Erin Higgins, Brian Ross
- Beyond probability gain: Information access strategies in category learning* ..... 1394  
Kimberly Meier, Mark Blair
- Estimating the strength of unlabeled information during semi-supervised learning* ..... 1400  
Brenden Lake, James McClelland
- Reasoning with Conjunctive Causes* ..... 1406  
Bob Rehder

## Causal reasoning

- Finding the Cause: Examining the Role of Qualitative Causal Inference through Categorical Judgments* ..... 1412  
Michael Pacer, Woo-kyoung Ahn
- Uncertainty and dependency in causal inference* ..... 1418  
Christopher Carroll, Patricia Cheng, Hongjing Lu
- What Makes an Explanation Believable?: Mechanistic and Anthropomorphic Explanations of Natural Phenomena* ..... 1424  
Jordan Schoenherr, Robert Thomson, Jim Davies
- Reasoning in teaching and misleading situations* ..... 1430  
Russell Warner, Todd Stoess, Patrick Shafto

## Action, gesture and language

- Brief Familiarization Primes Covert Imitation in 9-month-old Infants* ..... 1436  
Bennett Bertenthal, Ty Boyer
- The Influence of Writing Experiences on Holistic Processing in Chinese Character Recognition* 1442  
Ricky Van Yip Tso, Terry Kit-fong Au, Janet Hui-wen Hsiao
- Gesture During Mental Rotation* ..... 1448  
Autumn Hostetter, Martha Alibali, Anne Bartholomew

<i>Gesturing by aphasic speakers, how does it compare?</i> .....	1454
Lisette Mol, Emiel Krahmer, Mieke Van de Sandt-Koenderman	
<b>Symposium: Executive functioning in children and adolescents with disabilities</b>	
<i>Executive Functioning in Children and Adolescents with Disabilities</i> .....	1460
Amy Sussman, Priti Shah, Lisa Daunhauer, Deborah Fidler, Janine Stichter, Frances Conners	
<b>Symposium: Fictional worlds and cognitive science</b>	
<i>Fictional Worlds and Cognitive Science</i> .....	1462
Cristóbal Pagán Cánovas, Richard Gerrig, Thalia Goldstein, Francis Steen, Vera Tobin	
<b>Learning and induction in complex tasks</b>	
<i>The Role of Cross-cutting Systems of Categories in Category-based Induction</i> .....	1464
Neil Smith, Patrick Shafto	
<i>A mechanism to increase argument strength with negative evidence</i> .....	1470
Daniel Heussen, Wouter Voorspoels, Gert Storms	
<i>Preparing Students for Effective Explaining of Worked Examples in the Genetics Cognitive Tutor</i> .....	1476
Albert Corbett, Ben MacLaren, Angela Wagner, Linda Kauffman, Aaron Mitchell, Ryan Baker, Sujith Gowda	
<i>A Computational Model of Complex Skill Learning in Varied-Priority Training</i> .....	1482
Wai-Tat Fu, Panying Rong, Hyunkyoo Lee, Arthur Kramer, Ann Graybiel	
<b>Structure and evolution of languages</b>	
<i>Inferring Conceptual Structure from Cross-Language Data</i> .....	1488
Terry Regier, Naveen Khetarpal, Asifa Majid	
<i>Core phonology: Evidence from grammatical universals</i> .....	1489
Iris Berent	
<i>Investigating the effects of prestige on the diffusion of linguistic variants</i> .....	1491
Monica Tamariz, Tao Gong, Gerhard Jaeger	
<i>Semantic structure in improvised communication</i> .....	1497
Marieke Schouwstra, Anouschka van Leeuwen, Nicky Marien, Marianne Smit, Henriette de Swart	
<b>Number processing and representation</b>	
<i>Learning Linear Spatial-Numeric Associations Improves Memory for Numbers</i> .....	1503
Clarissa Thompson, John Opfer	
<i>Linear Numerical Magnitude Representations Aid Memory for Single Numbers</i> .....	1509
Christopher Young, Francesca Marciiani, John Opfer	
<i>Evidence against a strong association between numerical symbols and the quantities they represent</i> .....	1515
Ian Lyons, Daniel Ansari, Sian Beilock	

<i>Number Preference, Precision and Implicit Confidence</i> .....	1521
Matthew Welsh, Daniel Navarro, Steve Begg	
<b>Reasoning about spatial and causal properties</b>	
<i>A Text Corpus Analysis Approach to the Conjunction Fallacy</i> .....	1527
Yuichiro Wajima, Kuninori Nakamura, Asuka Terai, Kimihiko Yamagishi, Masanori Nakagawa	
<i>Is the Centrality of Design History Function an Effect of Causal Knowledge?</i> .....	1533
Guillermo Puebla-Ramírez, Sergio Chaigneau	
<i>Spatial Reasoning within Visible Functional Constraints</i> .....	1539
Georg Jahn, Miriam Müller-Bardorff, Kenny Coventry	
<i>Probabilistic internal physics models guide judgments about object dynamics</i> .....	1545
Jessica Hamrick, Peter Battaglia, Josh Tenenbaum	
<b>Discourse and social interaction in language comprehension</b>	
<i>Memory Representations Supporting Speakers' Choice of Referring Expression: Effects of Category Overlap and Shared Experience</i> .....	1551
Kristen S. Gorman, Whitney Gegg-Harrison, Chelsea R. Marsh, Michael K. Tanenhaus	
<i>Effects of speaker gaze on spoken language comprehension: task matters</i> .....	1557
Helene Kreysa, Pia Knoeferle	
<i>The Distribution of Repair in Dialogue</i> .....	1563
Marcus Colman, Patrick Healey	
<i>Predictability effects in adult-directed and infant-directed speech: Does the listener matter?</i> .....	1569
John Pate, Sharon Goldwater	
<b>Symposium: New approaches to the problem of conceptual change in the learning of science and math</b>	
<i>New Approaches to the Problem of Conceptual Change in the Learning of Science and Math</i> ...	1575
Stella Vosniadou, Michellene T.H. Chi, Stellan Ohlsson, David D. Cosejo, David E Brown, Nancy J. Nerserssian	
<b>Spatial cognition: From vision to language</b>	
<i>Visualizing thought: Mapping category and continuum</i> .....	1577
Barbara Tversky, James Corter, Lixiu Yu, David Mason, Jeffrey Nickerson	
<i>Do you have to look where you go? Gaze behaviour during spatial decision making</i> .....	1583
Jan Wiener, Olivier De Condappa, Christoph Hölscher	
<i>Prepositions in and on retain aspects of spatial meaning in abstract contexts</i> .....	1589
Anja Jamrozik, Dedre Gentner	
<i>Does Space Structure Spatial Language? Linguistic Encoding of Space in Sign Languages</i> .....	1595
Pamela Perniss, Inge Zwitserlood, Asli Özyürek	
<b>Language acquisition in children</b>	
<i>Word Learning through Sensorimotor Child-Parent Interaction: A Feature Selection Approach</i> .	1601
Chen Yu, Junming Xu, Xiaojin Zhu	

<i>Markers of Discourse Structure in Child-Directed Speech</i> .....	1607
Hannah Rohde, Michael Frank	
<i>Productivity and Reuse in Language</i> .....	1613
Timothy O'Donnell, Jesse Snedeker, Joshua Tenenbaum, Noah Goodman	
<i>Learning Simple Statistics for Language Comprehension and Production: The CAPPUCCINO Model</i> .....	1619
Stewart M. McCauley, Morten H. Christiansen	

**Language comprehension: Anticipating structure and meaning**

<i>Effects of Semantic Integration and Advance Planning on Grammatical Encoding in Sentence Production</i> .....	1625
Maureen Gillespie, Neal J. Pearlmutter	
<i>Distal prosody influences lexical interpretation in online sentence processing</i> .....	1631
Meredith Brown, Anne Pier Salverda, Laura C. Dilley, Michael K. Tanenhaus	
<i>Cloze but no cigar: The complex relationship between cloze, corpus, and subjective probabilities in language processing</i> .....	1637
Nathaniel Smith, Roger Levy	
<i>Individual differences in visual comprehension of morphological complexity</i> .....	1643
Victor Kuperman, Julie Van Dyke	

**Learning concepts and categories**

<i>Rethinking the role of error in attentional learning</i> .....	1649
Mark Blair, Calen Walshe, Jordan Barnes, Lihan Chen	
<i>Perceptual Fluency Affects Categorization Decisions</i> .....	1655
Sarah J Miles, John Paul Minda	
<i>A Tale of Two Processes: Categorization Accuracy and Attentional Learning Dissociate with Imperfect Feedback</i> .....	1661
Caitlyn McColeman, Aaron Ancell, Mark Blair	
<i>Discovering Inductive Biases in Categorization through Iterated Learning</i> .....	1667
Kevin Canini, Thomas Griffiths, Wolf Vanpaemel, Michael Kalish	

**Neural networks and dynamic systems**

<i>Forgetting Curves Emerge from Dynamics of Integrated Memory</i> .....	1673
Eva Cadez, Evan Heit	
<i>An Artificial Grammar Investigation into the Mental Encoding of Syntactic Structure</i> .....	1679
Pyeong Whan Cho, Emily Szkudlarek, Anuenue Kukona, Whitney Tabor	
<i>Critical Branching Neural Computation, Neural Avalanches, and 1/f Scaling</i> .....	1685
Christopher Kello, Bryan Kerster, Eric Johnson	
<i>Visual Motion Perception using Critical Branching Neural Computation</i> .....	1691
Janelle K. Szary, Christopher T. Kello	

## Modeling and testing causal reasoning

<i>Blocking Requires Uncertainty about Novel Cues</i> .....	1697
Pei-Pei Liu, Christian Luhmann	
<i>A Causal Model Theory of Judgment</i> .....	1703
Abigail B. Sussman, Daniel M. Oppenheimer	
<i>Estimating human priors on causal strength</i> .....	1709
Saiwing Yeung, Thomas Griffiths	
<i>Rational Order Effects in Responsibility Attributions</i> .....	1715
Tobias Gerstenberg, David Lagnado, Maarten Speekenbrink, Catherine Cheung	

## Governing Board Symposium

<i>Governing Board Symposium The Biology of Language in the 21st Century</i> .....	1721
Noam Chomsky, David Poeppel, Patricia Churchland, Elissa Newport	

## Posters

<i>Extended Visual Memory for Computer-Aided Vision</i> .....	1723
Joo-Hwee LIM, Siying LIU	
<i>Conflict-Monitoring Framework Predicts Larger Within-Language ISPC Effects: Evidence from Turkish-English Bilinguals</i> .....	1724
Nart B. Atalay, Mine Misirlisoy	
<i>Incremental Learning of Target Locations in Visual Search</i> .....	1729
Michal Dziemianko, Moreno I. Coco, Frank Keller	
<i>Visual Attention and Change Detection</i> .....	1735
Ty W. Boyer, Thomas G. Smith, Chen Yu, Bennett I. Bertenthal	
<i>Cued Attention and Learning of Spatial Context in Children</i> .....	1741
Hanako Yoshida, Kevin Darby, Joseph Burling	
<i>The Developmental Role of Attentional Control in Language Learning</i> .....	1747
Duc Tran, Hanako Yoshida	
<i>The Typology of Chinese in Talmy's Verb-framed vs Satellite Framed Languages</i> .....	1748
FUYIN LI, Suying LI	
<i>Towards a cross-linguistic scale for pragmatics of deference and closeness</i> .....	1749
Gregory Aist, Prakalp Sudhakar	
<i>Naming and the Animal Concept in English and Indonesian Speakers</i> .....	1750
Florencia K. Anggoro	
<i>The Whole Number Bias in Fraction Magnitude Comparisons with Adults</i> .....	1751
Melissa DeWolf, Stella Vosniadou	
<i>The Absence of Positive Affect is Associated with Complex Rule Use</i> .....	1757
Ruby Nadler, John Paul Minda	
<i>Cost of Attention as an Indicator of Category Learning</i> .....	1763
Hyungwook Yim, Catherine Best, Vladimir Sloutsky	

<i>Breaking the World into Symbols</i> .....	1769
Adam November, Nicolas Davidenko, Michael Ramscar	
<i>A Model of Concept Generalization and Feature Representation in Hierarchies</i> .....	1775
Timothy Rubin, Matthew Zeigenfuzze, Mark Steyvers	
<i>Making SNAP Judgments: Rethinking the Spatial Representation of Number</i> .....	1781
Tyler Marghetis, Esther Walker, Benjamin Bergen, Rafael Núñez	
<i>Latent Scope Bias in Categorization</i> .....	1787
Abigail B. Sussman, Sangeet Khemlani, Daniel Oppenheimer	
<i>Scaling up from Micro Cognition to Macro Cognition: Using SGOMS to build Macro Cognitive Models of Sociotechnical Work in ACT-R</i> .....	1788
Robert West, Sterling Somers	
<i>Cognitive Modeling of Event-Related Potentials</i> .....	1794
Gordon Griffiths, Robert West, Amedeo D'Angiulli	
<i>Memorizing Mathematics: The Failure to Apply Mathematical Axioms Within Restrictive Models</i> .....	1799
Rony Patel, Jennifer Jacobs, Rochel Gelman	
<i>Learning by Drawing: drawing construction interacts with instructional support in fostering higher-order reasoning</i> .....	1800
Margaret Chan	
<i>Mind the Gap: Dispositional Agency Facilitates Toddlers' Causal Representations</i> .....	1801
Paul Muentener, Elizabeth Bonawitz, Alexandra Horowitz, Laura Schulz	
<i>Children's Use of Structure Mapping in Numerical Estimation</i> .....	1807
Jessica Sullivan, David Barner	
<i>Encoding word-order and semantic information using modular neural networks</i> .....	1813
Alvaro Cabana, Juan Valle-Lisboa, Eduardo Mizraji	
<i>The Moving Eye is Easy to Spy: How Motion Improves Gaze Discrimination</i> .....	1814
Nicola Anderson, Evan Risko, Alan Kingstone	
<i>Language and Space: Momentary Interactions</i> .....	1815
Barbara Landau	
<i>Cooperation and Human Cognition</i> .....	2902
Michael Tomasello	
<i>Classifying patients and controls using multi-dimensional scaling and exploring the metric of semantic space</i> .....	1817
Steven Chance, Anthony James, Rebecca Peet, Geoffrey Nicholls	
<i>The QWERTY Effect: How stereo-typing shapes the mental lexicon.</i> .....	1823
Kyle Jasmin, Daniel Casasanto	
<i>Pain as Enactive Perception: Applying Noe's Theory of Perception</i> .....	1829
Alice Kyburg	

<i>Readiness-to-hand, extended cognition, and multifactality</i> .....	1835
Lin Nie, Dobromir Dotov, Anthony Chemero	
<i>How is knowledge transmitted in a small world network through communicative interaction?</i> ...	1841
Hidehito Honda, Toshihiko Matsuka	
<i>Learning Causal Direction from Repeated Observations over Time</i> .....	1847
Benjamin Rottman, Frank Keil	
<i>Analyzing Conservative and Liberal Blogs Related to the Construction of the 'Ground Zero Mosque'</i> .....	1853
Morteza Dehghani, Jonathan Gratch, Sonya Sachdeva, Kenji Sagae	
<i>Creative Choices in Choreography: A New Qualitative Methodology</i> .....	1859
Dafne Muntanyola Saura	
<i>Beyond Outcomes: The Influence of Intentions and Deception</i> .....	1860
Simeon Schaechtele, Tobias Gerstenberg, David Lagnado	
<i>Modeling Response Times in the Go/No-Go Discrimination Task</i> .....	1866
Jennifer Trueblood, Michael Endres, Jerome Busemeyer, Peter Finn	
<i>Probabilistic inferences under emotional stress</i> .....	1872
Szymon Wichary, Jörg Rieskamp	
<i>Causal Explanations Guide Inferences about Children's Bizarre Behaviors</i> .....	1878
Jennelle Yopchick, Nancy Kim	
<i>Funding Opportunities for Cognitive Scientists through the Institute of Education Sciences</i> .....	1879
Amy Sussman	
<i>Visualizing Feedback: Using Graphical Cues to Promote Self-Regulated Learning</i> .....	1880
Lisa Ferrara, Kirsten Butcher	
<i>Comparing A Brain-Based Account of Mind with Dual-Processing Theories</i> .....	1886
Ron Tzur	
<i>The spatially cued Go/NoGo in children. Brain activity analysis of the major inhibitory components.</i> .....	1887
Laura Vuillier, Denes Szucs, David Whitebread	
<i>Matching Skin Conductance Data to a Cognitive Model of Reappraisal</i> .....	1888
Tibor Bosse, Jessica Brenninkmeyer, Raffael Kalisch, Christian Paret, Matthijs Pontier	
<i>You Can't Play the Iowa Gambling Task with Mother Nature and Win</i> .....	1894
Courtney Humeny, Robert West	
<i>Emotional lexicon organization in memory</i> .....	1895
Nicolas Leveau, Sandra Jhean-Larose, Guy Denhière	
<i>Using phonotactics information in spoken word recognition processes: Evidence from Chinese</i> ..	1896
Michael C. W. Yip	
<i>Perceptual Comparisons with Pictures and Environmental Sounds</i> .....	1897
Paula Goolkasian, Alexandra Stubblefield	

<i>Cutting classes without scissors: conceptual primitives as a cognitive mechanism for idiom processing</i> .....	1898
Juliana Gorian, Catherine Caldwell-Harris, Alia Biller	
<i>The effects of regularity in spatial inferences with and without landmarks on spatial learning</i> ...	1899
Kayoko Ohtsu, Yoshihiro Ouchi	
<i>Quality of alternatives is related to abstract reasoning</i> .....	1900
Marie-Laurence Brunet, Hugues Lortie Forgues, Henry Markovits	
<i>Resource depletion contributes to, but does not cause, the attentional blink</i> .....	1901
Hannah Pincham, Denes Szucs	
<i>Word Up! Directed motor action improves word learning.</i> .....	1902
Daniel Casasanto, Angela de Bruin	
<i>Hierarchical Control in Hand-Foot Coordination</i> .....	1903
Robert Kohl, Raymond McCoy, Kimberly Mount	
<i>Prompting Effective Collaboration Using Deep Questions</i> .....	1904
Robert Zheng, Kirsten Butcher, Udit Gupta, Paul Callister	
<i>Storing objects in visual short-term memory: Location is key</i> .....	1905
Shriradha Sengupta, Paul Michel Bernard Verhaeghen, Patricia Mary Hearons	
<i>What makes intensional estimates of probabilities inconsistent?</i> .....	1906
Sangeet Khemlani, Max Lotstein, Phil Johnson-Laird	
<i>Going with the group in a competitive game of iterated reasoning</i> .....	1912
Seth Frey, Robert L Goldstone	
<i>Explicit Bayesian Reasoning with Frequencies, Probabilities, and Surprisals</i> .....	1918
Heather Prime, Thomas Shultz	
<i>How do 100 people walk a tightrope together? An experiment in large scale joint action</i> .....	1924
Daniel Richardson, Rick Dale, John Rogers, James Ireland	
<i>The Interplay of Multiple Mechanisms in Word Learning</i> .....	1930
Judith Koehne, Matthew W. Crocker	
<i>Straightening Up: Number line Estimates Shift from Log to Linear with Additional Information</i>	1936
Percival Matthews, Dana Chesney	
<i>Alleviating Anxiety about Spatial Ability in Elementary School Teachers</i> .....	1942
Raedy Ping, Claire Bradley, Elizabeth Gunderson, Gerardo Ramirez, Sian Beilock, Susan Levine	
<i>Does anchoring cause overconfidence only in experts?</i> .....	1947
Belinda Bruza, Matthew Welsh, Daniel Navarro, Steve Begg	
<i>The influence of attentional capacity and social categorization on own race effect</i> .....	1953
Pu Xiaoping, Zhou Guomei, ZHANG Lanya, TSE Chi-Shing	
<i>Multiple Causal Explanations: When Do We Discount and When Do We Integrate?</i> .....	1954
Edward Munnich, Melissa Latham, Jennifer Milazzo, Jennifer Zisa, Saera Khan	

<i>Counting is a Piece of Cake: Yet Another Counting Task</i> .....	1955
Aaron Crug, Rochel Gelman	
<i>Understanding of mental states for human and non-human agents in young children</i> .....	1956
Hajimu Hayashi	
<i>Young Toddlers' Understanding of Graded Preferences</i> .....	1957
Jane Hu, Christopher Lucas, Thomas Griffiths, Fei Xu	
<i>Designing Interfaces that Stimulate Ideational Fluency in Science</i> .....	1958
Sharon Oviatt, Adrienne Cohen, Ariana Mann	
<i>Evading a Multitasking Bottleneck: Presenting Intermediate Representations in the Environment</i>	1959
Trudy Buwalda, Jelmer Borst, Niels Taatgen, Hedderik van Rijn	
<i>Gestures are Produced During Spatial Tasks</i> .....	1965
Autumn Hostetter, Erin Sullivan	
<i>Modeling Decision Making on the Use of Automation</i> .....	1971
Junya Morita, Kazuhisa Miwa, Akihiro Maehigashi, Hitoshi Terai, Kazuaki Kojima, Frank Ritter	
<i>Selection Strategy of Effort Control: Allocation of Function to Manual Operator or Automation System</i> .....	1977
Akihiro Maehigashi, Kazuhisa Miwa, Hitoshi Terai, Kazuaki Kojima, Junya Morita	
<i>Robot gaze does not reflexively cue human attention</i> .....	1983
Henny Admoni, Caroline Bank, Joshua Tan, Mariya Toneva, Brian Scassellati	
<i>Developing Natural Full-body Motion Synthesis in Virtual Humans</i> .....	1989
Yazhou Huang, Justin L. Matthews, Marcelo Kallmann, Teenie Matlock	
<i>Perception of intentions and mental states in autonomous virtual agents</i> .....	1990
Peter C. Pantelis, Steven A. Cholewiak, Paul Ringstad, Kevin Sanik, Ari Weinstein, Chia-Chien Wu, Jacob Feldman	
<i>Moving Toward the Right Statement: Effects of Grounded Embodied Cognition on Computational Thinking</i> .....	1996
Cameron L. Fadjjo, John B. Black	
<i>Complete versus Partial Visuo-Spatial External Representations of Abstract Physics Concepts</i> .	1997
Satyugjit Virk, John Black	
<i>Comparing the efficacy of bigrams and frames in cuing lexical categories for human learners</i> ...	1998
Toben Mintz	
<i>Differential Weighting of Perceptual and Linguistic Factors Predicts English Noun Age-of-Acquisition</i> .....	1999
Christopher H. Ramey, Evangelia G. Chrysikou, Jamie Reilly	
<i>Overextensions that extend into adolescence: Insights from a threshold model of categorization</i> .	2000
Steven Verheyen, Eef Ameel, Gert Storms	
<i>Unsupervised Extraction of Recurring Words from Infant-Directed Speech</i> .....	2006
Fergus McInnes, Sharon Goldwater	

<i>An online model of the acquisition of phonotactics within Optimality Theory</i> .....	2012
Magri Giorgio	
<i>Mowgli in the jungle of words: Comprehension and later lexical development.</i> .....	2018
Eef Ameel, Barbara Malt, Gert Storms	
<i>Generalizing between form and meaning using learned verb classes</i> .....	2024
Christopher Parisien, Suzanne Stevenson	
<i>Social Capital and Language Acquisition during Study Abroad</i> .....	2030
Matthew Smith, Christophe Giraud-Carrier, Dan Dewey, Spencer Ring, Derek Gore	
<i>Using a Speaker's Eye-Gaze in Conversation: Benefits and Costs</i> .....	2036
Joy Hanna, Susan Brennan	
<i>A one-stage distributed processing account of linguistic negation</i> .....	2037
Stephanie Huette, Sarah Anderson, Teenie Matlock, Michael Spivey	
<i>Processing Emergent Features in Metaphor Comprehension</i> .....	2043
Asuka Terai, Robert Goldstone	
<i>Identifying Metaphor Hierarchies in a Corpus Analysis of Finance Articles</i> .....	2049
Aaron Gerow, Mark Keane	
<i>Implicit Context-Specific Learning Leads to Rapid Shifts in Syntactic Expectations</i> .....	2055
Thomas Farmer, Alex Fine, Florian Jaeger	
<i>The Role of Working Memory in Implicit and Explicit Language Learning</i> .....	2061
Kaitlyn M Tagarelli, Mailce Borges Mota, Patrick Rebuschat	
<i>Improving the Acquisition and Retention of Science Material by Fifth Grade Students Through the Use of Imagery Interventions</i> .....	2067
Marisa Cohen	
<i>Structural Alignment in Learning Bridge Construction</i> .....	2068
Lauren Applebaum, Elizabet Spaepen, Dedre Gentner, Susan C. Levine, Susan Goldin-Meadow	
<i>Children's Encoding and Solving of Mathematical Equations</i> .....	2069
Noelle M. Crooks, Martha W. Alibali	
<i>Student's Adaptive Choice of Instruction Format</i> .....	2070
Jooyoung Jang, Christian Schunn	
<i>Modeling information sampling over the course of learning</i> .....	2076
Doug Markant, Todd Gureckis	
<i>The Sensory-Dependent Nature of Audio-Visual Interactions for Semantic Knowledge</i> .....	2077
Guillaume Vallet, Benoit Riou, Rémy Versace, Martine Simard	
<i>Perceptual learning and face recognition : Disruption of second order relational information reduces the face inversion effect.</i> .....	2083
Ciro Civile, R.P. McLaren, IPL McLaren	
<i>Dynamics of Neuropsychological Testing</i> .....	2089
Michael Coen, Timothy Chang, Bruce Hermann, Asenath La Rue, Mark Sager	

<i>Relationship Between Episodic Memory Formation and Two Minds</i> .....	2095
Muneo Kitajima, Makoto Toyota, Kohzoh Yoshino, Sayaka Matsumoto, Hirotsugu Tahira, Ryohei Miyaji	
<i>A Model of Working Memory in Schizophrenia</i> .....	2096
Brandon Abbs	
<i>Learning and generalizing sameness in simple recurrent networks</i> .....	2097
Juan Valle-Lisboa	
<i>Bridging the gap between brain and behavior: A dynamic neural field model of executive function captures behavioral and neural development</i> .....	2098
John Spencer, Aaron Buss	
<i>Strategy Shifting in a Procedural-Motor Drawing Task</i> .....	2099
Brent Morgan, Sidney D’Mello, Jenna Fielding, Karl Fike, Andrea Tamplin, Gabe Radvansky, James Arnett, Robert Abbott, Arthur Graesser	
<i>Cognitive training promotes academic success: An analysis of focused meditative practices on student quiz performance</i> .....	2105
Jared Ramsburg, Robert Youmans	
<i>An own-age bias in age estimation of faces.</i> .....	2111
Evelyne Moyses, Serge Brédart	
<i>Visual Clustering on a Computer Display: A Validation Study</i> .....	2112
Bella Veksler	
<i>Strategies for tone identification in observers with absolute pitch</i> .....	2113
Malik Refaat, Koen Lamberts	
<i>Canonical views of scenes depend on the shape of the space</i> .....	2114
Krista A. Ehinger, Aude Oliva	
<i>Measurements and Estimations of Subjective Hand Force Exertions</i> .....	2120
Kai-Way Li	
<i>Hypothetical Cognition and Coalition Enforcement. Language, Morality, and Violence</i> .....	2121
Lorenzo Magnani	
<i>A Theory of How Heuristics Work in Cognition</i> .....	2127
Sheldon Chow	
<i>Philosophers, three year olds &amp; autistics</i> .....	2128
Peter Slezak	
<i>Ad-hoc scalar implicature in adults and children</i> .....	2134
Alex Stiller, Noah Goodman, Michael Frank	
<i>Inferential Processes Based on Goals in Explicit Communication a Theoretical Approach</i> .....	2140
Marco Cruciani	
<i>Exploiting the Soft Constraints Hypothesis to Mitigate Interruption Effects</i> .....	2141
John Patrick, Phillip Morgan, Victoria Smy	
<i>Conflict Resolution in Remote Collaborative Problem Solving: A Comparison of Different Computer Mediated Communication Methods</i> .....	2142
Wei Dong, Wai-Tat Fu	

<i>Forecasting the evolution of a system: the role of cognitive strategies in complexity discovery ...</i>	2148
Jean-François Gagnon, Sébastien Tremblay	
<i>Cross-dimensional Mappings in Sound Symbolic Foreign Words .....</i>	2149
Christina Y. Tzeng, Lynne C. Nygaard, Laura L. Namy	
<i>Asymmetry in Stroop interference arising from naming practice: shape beats color .....</i>	2150
Athanasios Protopapas, Artemis Markatou	
<i>The topic comprehension process in simile sentences .....</i>	2156
Tomohiro Taira, Takashi Kusumi	
<i>The Effect of Response Set Size on the Stroop Interference .....</i>	2162
Adam Chuderski, Tomasz Smolen	
<i>Cognitive Control in the Generation of Random Sequences: A Computational Study of Secondary Task Effects .....</i>	2168
Richard P. Cooper	
<i>Whose Mind Matters More: The moral agent or the artist? The role of intent in ethics and aesthetics .....</i>	2174
Angelina Hawley-Dolan, Liane Young	
<i>Diagramming the Maya "Classic Motif": The Nonpropositional Pictorial Reasoning of Eternal Victory at Tikal .....</i>	2180
Sean Eirik Simpson	
<i>Effects of Controllability and Severity on Risk Perception are not Additive .....</i>	2181
Kyung Soo Do, Yoon Jin Cho	
<i>Interpreting logic diagrams: a comparison of two formulations of diagrammatic representations</i>	2182
Yuri Sato, Koji Mineshima, Ryo Takemura	
<i>Adolescent Reasoning in Mathematics: Exploring Middle School Students' Strategic Approaches in Empirical Justifications .....</i>	2188
Jennifer Cooper, Candace Walkington, Caroline Williams, Olubukola Akinsiku, Charles Kalish, Amy Ellis, Eric Knuth	
<i>The inhumane accusative: an empirical investigation .....</i>	2194
Luenya Santiago dos Santos, Dietmar Zaefferer	
<i>Directional Bias Induced Error Patterns when Translating Structural Representations .....</i>	2195
Andrew Stull, Trevor Barrett, Mary Hegarty	
<i>Experimental investigation of effects of representations and contexts on comprehension and generation of line graphs .....</i>	2196
Nana Kanzaki, Kazuhisa Miwa	
<i>The Impact of Autism Spectrum Disorder on the Categorisation of External Representations ...</i>	2202
Beate Grawemeyer, Hilary Johnson, Mark Brosnan, Emma Ashwin, Laura Benton	
<i>The Effects of LEGO Robotics and Embodiment in Elementary Science Learning .....</i>	2208
Carol M. Lu, John B. Black, Seokmin Kang, Shih-Chieh Huang	
<i>The Construction Meaning of Interrogatives: Evidence From Embodied Grammar .....</i>	2209
Dietmar Zaefferer, Luenya Santiago dos Santos	

<i>Lexical Priming without Similarity or Association</i> .....	2210
Zachary Estes, Lara L. Jones, Emily Mather	
<i>A Tale of Two Semantic Systems: Taxonomic and Thematic Knowledge</i> .....	2211
Daniel Mirman, Grant M. Walker, Kristen M. Graziano	
<i>Why Neurons Cannot be Detectors: Shifting Paradigms from Sherlock Holmes to Elvis Presley?</i>	2217
Nancy Salay	
<i>Inducing homonymy effects via stimulus quality and (not) nonword difficulty: Implications for models of semantic ambiguity and word recognition</i> .....	2223
Blair Armstrong, David Plaut	
<i>The Semantic Pictionary Project</i> .....	2229
Brent Kievit-Kylar, Michael Jones	
<i>Modeling Utterance-mediated Attention in Situated Language Comprehension</i> .....	2235
Jan Svantner, Igor Farkas, Matthew Crocker	
<i>Becoming a Gamer: Cognitive Effects of Real-Time Strategy Gaming</i> .....	2241
Brian D. Glass, Marc T. Tomlinson, W. Todd Maddox, Bradley C. Love	
<i>The effect of prompted causal identification in transfer of experimental design skills</i> .....	2242
Stephanie Siler, David Klahr, Kevin Willows, Cressida Magaro	
<i>Making oneself predictable: Reduced temporal variability facilitates joint action coordination</i> ...	2243
Cordula Vesper, Robrecht van der Wel, Günther Knoblich, Natalie Sebanz	
<i>Norms as Direct Explanations of Behavior.</i> .....	2244
Kevin Uttich, Tania Lombrozo	
<i>When Two Become One: Temporally Dynamic Integration of the Face and Voice</i> .....	2245
Jeffrey Brooks, Jonathan Freeman, Nalani Ambady	
<i>Decision factors that support preference learning</i> .....	2246
Alan Jern, Charles Kemp	
<i>Simulating a route with your index finger: Effect of mental rehearsal on spatial memory</i> .....	2252
Wing Chee So	
<i>Employers and Employees: How Narrative Perspective Influences Agent Placement in a Simulated Work Environment</i> .....	2258
Justin L. Matthews, Teenie Matlock	
<i>Can comparison facilitate preschoolers' understanding of maps?</i> .....	2259
Lei Yuan, Megan Sauter, David Uttal	
<i>Training Spatial Skills: What works, for Whom, and for How Long?</i> .....	2260
Nathaniel Meadow, David Uttal, Elizabeth Tipton, Nora Newcombe	
<i>Language and spatial frames of reference: The effect of verbal interference</i> .....	2261
Sophie Bridgers, Terry Regier	
<i>Spatial Representation of Environmental and Geographical Space in Different Perspectives</i> .....	2262
Julia Frankenstein, Christoph Hölscher	

<i>Path Choice in Different Wayfinding Tasks</i> .....	2263
Simon Buechner, Christoph Hoelscher	
<i>Everyday navigation in real and virtual environments informed by semantic knowledge</i> .....	2264
Christopher Kalff, Gerhard Strube	
<i>Efficiency and Minimal Change in Spatial Belief Revision</i> .....	2270
Antje Krumnack, Leandra Bucher, Jelica Nejasmic, Markus Knauff	
<i>Horizontal Trumps Vertical in the Spatial Organization of Numerical Magnitude</i> .....	2276
Kevin J. Holmes, Stella F. Lourenco	
<i>Automated Extraction of Weighted Semantic Maps From Texts to Study Cultural Differences</i> ...	2282
M. Afzal Upal	
<i>Using a Cognitive Model to Provide Instruction for a Dynamic Task</i> .....	2283
JUNGAA MOON, DAN BOTHELL, JOHN ANDERSON	
<i>A Computational Account of Everyday Abductive Inference</i> .....	2289
Will Bridewell, Pat Langley	
<i>Effects of Semantic Integration on Phrase and Word Ordering Errors in Production</i> .....	2295
Amy DiBattista, Neal J. Pearlmuter	
<i>Affordances of Simulation-based Science Assessments</i> .....	2301
Jodi Davenport, Edys Quellmalz, Michael Timms	
<i>Temporal Dynamics of Scan Patterns in Comprehension and Production</i> .....	2302
Moreno I. Coco, Frank Keller	
<i>Representation and acquisition of symmetrical verbs</i> .....	2308
Ozge Gurcanli, Barbara Landau	
<i>Normative cognition: a uniquely human cognitive capacity</i> .....	2309
Jeppe Sinding Jensen	
<i>Generating 3D Spatial Descriptions from Stereo Vision Using SIFT Keypoint Clouds</i> .....	2310
Marjorie Skubic, Samuel N. Blisard, Robert H. Luke III, Erik E. Stone, Derek T. Anderson, James M. Keller	
<i>Individual and Collaborative Learning from Text and Pictures: A Task Analysis</i> .....	2311
Krista DeLeeuw, Katharina Scheiter, Friedrich Hesse	
<i>Do information-theoretic measures of word-processing difficulty explain psycholinguistic phenomena?</i> .....	2312
Stefan Frank	
<i>Shared pattern of face preferences in human infants and pet dogs</i> .....	2313
Jennifer M.D. Yoon, Friederike Range, Ludwig Huber, Gergely Csibra, Zsofia Viranyi	
<i>Learning categories from an intermittent teacher</i> .....	2314
John V McDonnell, Todd M Gureckis	
<i>Universals and variation in spatial language and cognition: Evidence from Chichewa</i> .....	2315
Alexandra Carstensen, Naveen Khetarpal, Asifa Majid, Terry Regier	

<i>Cross Cultural Comparative Effects of an Early Science and Measurement Learning Study on 4th grade children's achievement</i> .....	2316
Nancy L. Stein, Yuhtsuen Tzeng, Marc W. Hernandez	
<i>Factors Related to Passage Length: Implications for Second Language Listening Comprehension</i>	2317
Amber Bloomfield, Sarah Wayland, Allison Blodgett, Jared Linck	
<i>The Ellsberg 'Problem' and Implicit Assumptions under Ambiguity</i> .....	2323
Sule Guney, Ben R. Newell	
<i>Can Sleep Enhance both Implicit and Explicit Processes?</i> .....	2329
Andrea Smyth, Shuichiro Taya, Chris Hope, Magda Osman	
<i>Prospective Memory Tasks in Aviation: Effects of Age and Working Memory</i> .....	2335
Kathleen Van Benthem, Chris M. Herdman, Jo-Anne LeFevre	
<i>Using DSHM to Model Paper, Rock, Scissors</i> .....	2341
Matthew Rutledge-Taylor, Robert West	
<i>Two ways of grounding the discussion on extended cognition</i> .....	2347
Nils Dahlbäck, Fredrik Stjernberg, Mattias Kristiansson, Kenny Skagerlund	
<i>A Structural Complexity Measure for Predicting Human Planning Performance</i> .....	2353
Marco Ragni, Felix Steffenhagen, Thomas Fangmeier	
<i>Item noise in the Sternberg paradigm</i> .....	2359
Allison Chapman, Simon Dennis	
<i>Investigating Convention Shifts and Team Reasoning in Multi-Agent Simulations</i> .....	2365
Anna Coenen, Ramsey Raafat, Nick Chater	
<i>Modeling Social Information in Conflict Situations through Instance-Based Learning Theory</i> ...	2371
Varun Dutt, Jolie Martin, Cleotilde Gonzalez	
<i>Cued multimodal learning in infancy: a neuro-computational model</i> .....	2377
Thomas Hannagan, Rachel Wu	
<i>Promoting Development of Geometry Concepts: Interfacing Multiple Embodied Representations with a Computer Game</i> .....	2383
Jonathan Vitale, John Black, Michael Swart	
<i>Influence of Implicit Beliefs and Visual Working Memory on Label Use</i> .....	2389
Amanda Hahn, Takashi Yamauchi, Na-Yung Yu	
<i>Does Attention Confer Importance? Examining Evidence from the Multiattribute Choice Domain</i> .....	2395
Anirudh Tiwathia, William Goldstein	
<i>Acquiring English dative verbs: proficiency effects in German L2 learners</i> .....	2401
Christoph Wolk, Sascha Wolfer, Peter Baumann, Barbara Hemforth, Lars Konieczny	
<i>The Meta-structure of Knowledge and the Explanatory Gap</i> .....	2407
José M. Matías	
<i>The Influence of Additivity Training on Cue Competition Effects in Children's Causal Learning</i>	2408
Victoria Simms, Teresa McCormack, Tom Beckers	

<i>Your Tone Says It All: Affective Language Production, Perception and Action</i> .....	2409
Jennifer Roche, Rick Dale, Amy Roche	
<i>Crowdsourcing Creativity: Generating and Combining Ideas using Crowds</i> .....	2410
Jin Bao, Yasuaki Sakamoto	
<i>Evidence for Alignment in a Computer-Mediated Text-Only Environment</i> .....	2411
Monica Riordan, Rick Dale, Roger Kreuz, Andrew Olney	

**Keynote: Leonard Talmy**

<i>How Spoken and Signed Language Structure Space Differently</i> .....	2417
Leonard Talmy	

**Everyday Cognitive Science: Applying methods to explore spatial thinking in related disciplines**

<i>Everyday Cognitive Science: Using the methods of cognitive science to explore spatial thinking in related disciplines</i> .....	2418
Madeleine Keehner, Dan Montello, Sara Fabrikant, Eric M. Riggs, Ruth Conroy Dalton	

**Neuroimaging**

<i>Quantifying the diversity of neural activations in individual brain regions</i> .....	2421
Michael Anderson, Luiz Pessoa	
<i>Simulating Event-Related Potential Reading Data in a Neurally Plausible Parallel Distributed Processing Model</i> .....	2427
Sarah Laszlo, David Plaut	
<i>Strategic Resources Support the Interpretation of Doubly-Quantified Sentences</i> .....	2433
Corey McMillan, Neville Ryant, Danielle Coleman, Robin Clark, Murray Grossman	
<i>Finding neural correlates of drift diffusion processes in EEG oscillations</i> .....	2439
Marieke van Vugt, Patrick Simen, Jonathan Cohen	
<i>The Relation between Finger Gnosis and Mathematical Ability: Can we Attribute Function to Cortical Structure with Cross-Domain Modeling?</i> .....	2445
Marcie Penner-Wilger, Michael L. Anderson	

**Bayesian modeling**

<i>A Nonparametric Bayesian Model of Visual Short-Term Memory</i> .....	2451
Emin Orhan, Robert Jacobs	
<i>Gaze Following as Goal Inference: A Bayesian Model</i> .....	2457
Abram L. Friesen, Rajesh P. N. Rao	
<i>A Simple Sequential Algorithm for Approximating Bayesian Inference</i> .....	2463
Elizabeth Bonawitz, Stephanie Denison, Annie Chen, Alison Gopnik, Thomas Griffiths	
<i>Bayesian Theory of Mind: Modeling Joint Belief-Desire Attribution</i> .....	2469
Chris Baker, Rebecca Saxe, Joshua Tenenbaum	
<i>The Rational Hypocrite: Informal Argumentation and Moral Hypocrisy</i> .....	2475
Tage Rai, Keith Holyoak	

## **Theory of mind in social cognition**

- Using Inverse Planning and Theory of Mind for Social Goal Inference* ..... 2480  
Sean Tauber, Mark Steyvers
- I Do Know What You Think I Think: Second-Order Theory Of Mind In Strategic Games Is Not That Difficult* ..... 2486  
Ben Meijering, Hedderik Van Rijn, Niels Taatgen, Rineke Verbrugge
- Theory of Mind for you, and for me: behavioral and neural similarities and differences in thinking about beliefs of the self and other.* ..... 2492  
Hyowon Gweon, Liane Young, Rebecca R. Saxe
- Capturing mental state reasoning with influence diagrams* ..... 2498  
Alan Jern, Charles Kemp
- Immunity to error through misidentification and non-attributive self-reference* ..... 2504  
Ted Lougheed

## **Symposium: Moving beyond where and what to how: Using models and fMRI to understand brain-behavior relations**

- Moving Beyond Where and What to How: Using Models and fMRI to Understand Brain-Behavior Relations* ..... 2510  
Bradley Love, John Spencer, Nathaniel Daw, John O'Doherty

## **Symposium: Exploring spaces to make the right choice: The cognitive science of search**

- Exploring Spaces to Make the Right Choice: The Cognitive Science of Search* ..... 2512  
Wai-Tat Fu, Thomas Hills

## **Modeling human learning**

- How children learn to value numbers: Information structure and the acquisition of numerical understanding* ..... 2514  
Michael Ramscar, Melody Dye, Hanna Popick, Fiona O'Donnell-McCarthy
- A neuroplausible computational model of vision also exhibits asymmetry in developmental category learning* ..... 2520  
Ankit Gupta Ankit, Devesh Kumar Singh Devesh, Amitabha Mukerjee Mukerjee
- Neurophysiological Correlates of Visual Statistical Learning in Adults and Children* ..... 2526  
Ethan Jost, Christopher Conway, John Purdy, Michelle Hendricks
- Improving Adaptive Learning Technology through the Use of Response Times* ..... 2532  
Everett Mettler, Christine Massey, Philip Kellman

## **Language acquisition: Learning and using categories**

- Children's comprehension and production of transitive sentences is sensitive to the causal structure of events* ..... 2538  
Melissa Kline, Jesse Snedeker, Laura Schulz
- Acquiring Word Learning Biases* ..... 2544  
Zi Sim, Sylvia Yuan, Fei Xu

<i>Early Talkers and Late Talkers Know Nouns that License Different Word Learning Biases</i> .....	2550
Eliana Colunga, Clare Sims	
<i>When More Evidence Makes Word Learning Less Suspicious</i> .....	2556
Gavin Jenkins, Jodi Smith, John Spencer, Larissa Samuelson	
<b>Concepts and categories: Machine learning and artificial intelligence</b>	
<i>Estimating scene typicality from human ratings and image features</i> .....	2562
Krista A. Ehinger, Jianxiong Xiao, Antonio Torralba, Aude Oliva	
<i>One shot learning of simple visual concepts</i> .....	2568
Brenden Lake, Ruslan Salakhutdinov, Jason Gross, Joshua Tenenbaum	
<i>Modeling Category Identification Using Sparse Instance Representation</i> .....	2574
Shunan Zhang, Michael Lee, Meng Yu, Jack Xin	
<i>Towards a Law of Human Conceptual Behavior</i> .....	2580
Ronaldo Vigo	
<b>Modeling attention</b>	
<i>A Preliminary Report on the Effects of Mild Traumatic Brain Injury on Spatial Attention</i> .....	2586
Scott Sinnett, Ahnate Lim, Jeremy Thacker	
<i>Computational exploration of the relationship between holistic processing and right hemisphere lateralization in featural and configural recognition tasks</i> .....	2592
Janet Hui-wen Hsiao, Kloser Chee Fung Cheung	
<i>Fortunate Conjunctions Revived: Feature Binding with the 2f-ST2 Model</i> .....	2598
Srivasa Chennu, Howard Bowman, Brad Wyble	
<i>Coexistence of Multiple Modal Dominances</i> .....	2604
Marvin Chandra, Christopher Robinson, Scott Sinnett	
<b>Embodiment</b>	
<i>Motivation and Motor Control: Hemispheric Specialization for Motivation Reverses with Handedness</i> .....	2610
Geoffrey Brookshire, Daniel Casasanto	
<i>Searching for cultural influences on the body-specific association of preferred hand and emotional valence</i> .....	2616
de la Fuente Juanma, Casasanto Daniel, Román Antonio, Santiago Julio	
<i>Chomsky and embodied cognition: A sensorimotor interpretation of Minimalist logical form</i> ....	2621
Alistair Knott	
<i>Attribute preference and priming in reference production: Experimental evidence and computational modeling</i> .....	2627
Albert Gatt, Martijn Goudbeek, Emiel Krahmer	
<b>Symposium: Computational, neuroscientific, and lifespan perspectives on the exploration-exploitation dilemma</b>	
<i>Computational, Neuroscientific, and Lifespan Perspectives on the Exploration-Exploitation Dilemma</i> .....	2633
A. Ross Otto, Bradley Knox, Bradley Love, Sam Gershman, Yael Niv, Darrell Worthy, Todd Maddox, Jared Hotaling, Jerome Busemeyer, Richard Shiffrin	

## Symposium: Grow your own representations: Computational constructivism

- Grow your own representations: Computational constructivism* ..... 2635  
Joseph Austerweil, Thomas Griffiths, Todd Gureckis, Robert Goldstone, Kevin Canini,  
Matt Jones

### Analogical reasoning

- Transfer, and the Effects of Context Outside of the Training Task* ..... 2637  
Samuel B. Day, Sarah Manlove, Robert L. Goldstone
- Progressive Alignment Facilitates Learning of Deterministic But Not Probabilistic Relational  
Categories.* ..... 2643  
Wookyoung Jung, John Hummel
- Mammoth Cloning Reminds Us of "Jurassic Park" but Storm Replication Does Not:  
Naturalistic Settings Do Not Aid the Retrieval of Distant Analogs* ..... 2649  
Máximo Trench, Valeria Olguín, Ricardo Minervino
- Is Evoking Negative Meanings the Unique Feature of Adjective Metaphors? :Through the  
Comparison with Nominal Metaphors and Predicative Metaphors* ..... 2655  
Miho Sumihisa, Hiroya Tsukurimichi, Akira Utsumi, Maki Sakamoto

### Properties of natural and artificial languages

- Design features of language emerge from general-purpose learning mechanisms* ..... 2661  
Padraic Monaghan
- Zipfian word frequencies support statistical word segmentation* ..... 2667  
Chigusa Kurumada, Stephan.C Meylan, Michael.C Frank
- Phonological generalization from distributional evidence* ..... 2673  
Bozena Pajak, Roger Levy
- Implicit learning of phonotactic constraints: Transfer from perception to production* ..... 2679  
Audrey K. Kittredge, Gary S. Dell

### Artificial intelligence and human behavior

- Top-down Planning and Bottom-up Perception in a Problem-solving Task* ..... 2685  
Enkhbold Nyamsuren, Niels Taatgen
- 'Look No Goals!': A Sufficient Model of Simple Algebra Problem Solving Without Explicit Goal  
Representation* ..... 2691  
Gareth Miles
- Local statistical learning under cross-situational uncertainty* ..... 2697  
Luca Onnis, Shimon Edelman, Heidi Waterfall
- A Comparison of Human and Agent Reinforcement Learning in Partially Observable Domains* . 2703  
Finale Doshi-Velez, Zoubin Ghahramani

### Externally supported cognition

- Use of Complementary Actions Decreases with Expertise* ..... 2709  
Marc Destefano, John K. Lindstedt, Wayne D. Gray

<i>Identifying causal pathways with and without diagrams</i> .....	2715
James Corter, David Mason, Barbara Tversky, Jeffrey Nickerson	
<i>Unlocking potential: Individual differences in the use of concurrent scientific visualizations</i> .....	2721
Scott Hinze, David Rapp, Vickie Williamson, Mary Shultz, Ken Williamson, Ghislain Deslongchamps	
<i>Interactive rhythmic auditory stimulation system reinstates natural 1/f timing in gait of Parkinson's patients</i> .....	2727
Michael J. Hove, Kazuki Suzuki, Hirotaka Uchitomi, Satoshi Orimo, Yoshihiro Miyake	
<b>Visual attention</b>	
<i>The Attraction of Visual Attention to Texts in Real-World Scenes</i> .....	2733
Hsueh-Cheng Wang, Marc Pomplun	
<i>Language Mediated Visual Search: The Role of Display Preview</i> .....	2739
John Jones, Michael Kaschak, Walter Boot	
<i>Speaker gaze affects utterance comprehension beyond visual attention shifts</i> .....	2745
Maria Staudte, Matthew Crocker, Alexis Heloir, Michael Kipp	
<i>The Effect of Labels on Categorization: Is Attention to Relevant Features a Good Index of Infants' Category Learning?</i> .....	2751
Catherine A. Best, Christopher W. Robinson, Vladimir M. Sloutsky	
<b>Symposium: Explanation-based mechanisms for learning: An interdisciplinary approach</b>	
<i>Explanation-based Mechanisms for Learning: An Interdisciplinary Approach</i> .....	2756
Michelene Chi, Gerald DeJong, Cristine Legare, Tania Lombrozo, Joseph Jay Williams	
<b>Spatial navigation</b>	
<i>Let's Go for a Run: Planning Routes to Remember</i> .....	2758
Holly A. Taylor, Thora Tenbrink, Molly E. Sorrows	
<i>When do we integrate spatial information acquired by walking through environmental spaces?</i> ..	2764
Agnes Henson, Hanspeter Mallot, Heinrich Bülthoff, Tobias Meilinger	
<i>Navigation strategy as a predictor of navigation performance</i> .....	2770
M. Kirk Rodgers, Joseph A. Sindone, III, Scott D. Moffat	
<i>Sex Differences in Brain Activation During Virtual Navigation: A Functional MRI Study</i> .....	2776
Nicole Nowak, Susan Resnick, Wendy Elkins, Scott Moffat	
<b>Learning to make decisions</b>	
<i>Explanation Effects Override Formal Category Definitions In Clinical Experts' Diagnostic Judgments</i> .....	2782
Nancy Kim, Thao Nguyen, Daniel Paulus	
<i>Effects of information comprehensibility and argument type on lay recipients' readiness to defer to experts when deciding about scientific knowledge claims</i> .....	2788
Rainer Bromme, Lisa Scharrer, M. Anne Britt, Marc Stadler	
<i>The Relevance of a Probabilistic Mindset in Risky Choice</i> .....	2794
Adrian R Camilleri, Ben R Newell	

<i>Learning near-optimal search in a minimal explore/exploit task</i> .....	2800
Ke Sang, Peter Todd, Robert Goldstone	
<b>Education in formal settings</b>	
<i>Allocation of Attention in Classroom Environments: Consequences for Learning</i> .....	2806
Karrie Godwin, Anna Fisher	
<i>Classroom-based Experiments in Productive Failure</i> .....	2812
Manu Kapur, Katerine Bielaczyc	
<i>Distinguishing Levels of Grounding that Underlie Transfer of Learning</i> .....	2818
Lisa Byrge, Robert Goldstone	
<i>Outcomes and Mechanisms of Transfer in Invention Activities</i> .....	2824
Ido Roll, Vincent Aleven, Ken Koedinger	
<b>Mathematical modeling</b>	
<i>Visual Search as a Combination of Automatic and Attentive Processes</i> .....	2830
Chris Donkin, Rich Shiffrin	
<i>A Network Analysis Approach to Understand Human-wayfinding Problem</i> .....	2836
Sudarshan Iyengar, Nina Zweig, Abhiram Natarajan, Veni Madhavan	
<i>Explaining Categorization Response Times with Varying Abstraction</i> .....	2842
Loes Stukken, Gert Storms, Wolf Vanpaemel	
<i>A Quantum Probability Explanation for Violations of Symmetry in Similarity Judgments</i> .....	2848
Emmanuel Pothos, Jerome Busemeyer	
<b>Timing and decision making</b>	
<i>Don't Stop 'Til You Get Enough: Adaptive Information Sampling in a Visuomotor Estimation Task</i> .....	2854
Mordechai Juni, Todd Gureckis, Laurence Maloney	
<i>Time-interval statistics adaptively modulate decision makers' willingness to wait for delayed outcomes</i> .....	2860
Joseph McGuire, Joseph Kable	
<i>Now I like it, now I don't: Delay effects and retrospective judgment</i> .....	2866
Silvio Aldrovandi, Marie Poirier, Petko Kusev, Daniel Heussen, Peter Ayton	
<i>Temporal Shifts in Perceived Similarity Affect Consumer Valuation and Choice</i> .....	2872
Oleg Urminsky, Daniel Bartels	
<b>Making sense of vision</b>	
<i>The Nature of Mental Images - An Integrative Computational Theory</i> .....	2878
Jan Frederik Sima	
<i>Simulating Realism in Language Comprehension</i> .....	2884
Kevin J. Holmes, Phillip Wolff	
<i>Partial Representations of Scenes in Change Blindness: In the Eyes and in the Hands</i> .....	2890
Nick Benesh, Brent Fonville, Rick Dale	

<i>Thinking for Seeing: Enculturation of Visual-Referential Expertise as Demonstrated by Photo-Triggered Perceptual Reorganization of Two-Tone "Mooney" Images</i> .....	2896
Jennifer M.D. Yoon, Nathan Witthoft, Jonathan Winawer, Michael C. Frank, Edward Gibson, Ellen M. Markman	

**Heineken Lecture: Michael Tomasello**

<i>Cooperation and Human Cognition</i> .....	2902
Michael Tomasello	

**Posters**

<i>Mapping alignable or nonalignable differences between domains affects idea quality during analogical problem solving</i> .....	2903
Cynthia Sifonis	
<i>On the Emergence of Analogical Inference</i> .....	2904
Paul Thibodeau, Stephen Flusberg, Jeremy Glick, Daniel Sternberg	
<i>Enhancing the Comprehension of Science Text through Visual Analogies</i> .....	2910
Bryan Matlen, Stella Vosniadou, Benjamin Jee, Maria Ptouchkina	
<i>Modeling structural priming in sentence production via analogical processes</i> .....	2916
Jason Taylor, Scott Friedman, Micah Goldwater, Kenneth Forbus, Dedre Gentner	
<i>Serial order learning and performance by chimpanzees and gorillas on a computerized task</i> .....	2922
Katherine E. Wagner, Stephen R. Ross	
<i>A Non-Phylogenetic Conceptual Network Architecture for Organizing Classes of Material Artifacts into Cultural Lineages</i> .....	2923
Liane Gabora, Stefan Leijnen, Tomas Veloz, Carl Lipo	
<i>Shifting attention to a thought: electroencephalographic dynamics during a modified word generation task.</i> .....	2929
Diego Cosmelli, Cristobal Moenne, Hernán Labbé, Karim Jerbi, Vladimir López, Francisco Aboitiz	
<i>Bridging Visual and Executive Attention</i> .....	2930
Jesse Edelstein, Evan Heit	
<i>The Attentional Blink is Modulated by First Target Contrast: Implications of an Attention Capture Hypothesis</i> .....	2931
Simon Nielsen, Tobias Andersen	
<i>A Developmental Perspective on Order and Learning: Temporal Effects on Cued Attention</i> .....	2937
Joseph Burling, Hanako Yoshida	
<i>The Effects of Peripheral and Central Distraction on the Spatial Attention of Video Game Players</i> .....	2943
Coty Gonzales, Ahnate Lim, Scott Sinnett	
<i>A Generative Model of Causal Cycles</i> .....	2944
Bob Rehder, Jay B. Martin	
<i>Exploring the influence of particle filter parameters on order effects in causal learning</i> .....	2950
Joshua T. Abbott, Thomas L. Griffiths	

<i>Motivation-biased design</i> .....	2956
Cameron Shelley	
<i>Reading and writing performance in 7-8 year old children with developmental coordination disorder identified at 5-6 years old</i> .....	2962
Rong-Ju Cherng, Hsiang-Chun Cheng, Jenn-Yeu Chen, Miao-Lin Shen	
<i>Using Web Corpus Statistics to Infer Conceptual Structure</i> .....	2963
Brandon M. Lock, Eugene Agichtein, Kevin J. Holmes, Phillip Wolff	
<i>Effects of Category Learning: An Event-Related Potential Study</i> .....	2964
Jan Andrews, Ken Livingston, Alex Goldberg, Evan Cesanek, Julianne Herts	
<i>Dual Character Concepts</i> .....	2965
Joshua Knobe, Sandeep Prasada	
<i>For the price of a song: How pitch category learning comes at a cost to absolute frequency representations</i> .....	2971
Melody Dye, Michael Ramscar, Edward Suh	
<i>Sequential similarity and comparison effects in category learning</i> .....	2977
Paulo Carvalho, Robert Goldstone	
<i>It's around here: Residential history and the meaning of 'Midwest'</i> .....	2983
Vsevolod Kapatsinski, Richard Janda	
<i>The Influence of Co-Occurrence and Inheritance Information on Children's Inductive Generalization</i> .....	2989
Karrie Godwin, Anna Fisher, Bryan Matlen	
<i>Implicit and Explicit Sources of Knowledge Effects in Categorization</i> .....	2995
Jordan Schoenherr, Tyler Burleigh, Amy Winchester, Guy Lacroix	
<i>Modeling forward and backward serial recall using a spatial registry assumption</i> .....	2996
Nader Noori, Laurent Itti	
<i>Shared Representations of Belief and Their Effects on Action Selection: A Preliminary Computational Cognitive Model</i> .....	2997
Paul Bello	
<i>Effects of Multiple Learning Mechanisms in a Cognitive Architecture</i> .....	3003
Dongkyu Choi, Stellan Ohlsson	
<i>Bilingualism influences perceptual inhibition more than stimulus-response inhibition</i> .....	3009
Henrike K. Blumenfeld, Viorica Marian	
<i>Space and time in the child's mind: Further evidence for a cross-dimensional asymmetry</i> .....	3010
Roberto Bottini, Daniel Casasanto	
<i>Probability-matching in 10-month-old infants</i> .....	3011
Sarah Davis, Elissa Newport, Richard Aslin	
<i>Children's Understanding of the Link Between Sensory Perception and Knowledge</i> .....	3016
Ellyn Schmidt, Jennie Pyers	

<i>Individual vocabulary differences and the development of the shape bias</i> .....	3022
Lynn Perry, Larissa Samuelson	
<i>Role of Attention in the Formation of Illusory Correlations Among Preschoolers</i> .....	3028
Corinne Bower, Chris Lawson	
<i>Modeling U Shaped Performance Curves in Ongoing Development</i> .....	3034
Anthony Morse, Tony Belpaeme, Angelo Cangelosi, Caroline Floccia	
<i>The Development of Context Use and Three Way Bindings in Episodic Memory</i> .....	3040
Hyungwook Yim, Simon Dennis, Vladimir Sloutsky	
<i>Attractor Neural Networks as Models of Categorization Task and Word Reading</i> .....	3046
Shin-ichi Asakawa	
<i>Incremental Information Mediates Visual Search</i> .....	3047
Eric Chiu, Michael Spivey	
<i>User Profiling in Assistive Interface for Aged People Cognitive Assessment, Stimulation and Training</i> .....	3048
Olga Vybornova	
<i>Speaking about software requirements using physical artifacts: A study from a situated cognition perspective</i> .....	3049
Nik Nailah Binti Abdullah, Robert G.M Hausmann	
<i>Expressing intention through redundant action in a remote control task: A natural behavior approach</i> .....	3050
Joseph Chisholm, Evan Risko, Alan Kingstone	
<i>The algorithmization of counterfactuals</i> .....	3051
Judea Pearl	
<i>Motor Simulation and Verbal Association in Idiom-Idiom Verification: Effects of Imageability</i> .	3052
Galina Gradinarova, Armina Janyan	
<i>Estimating the Unknown by the Hot Hand Belief</i> .....	3058
Yanlong Sun, Hongbin Wang	
<i>The formation of context in artificial object recognition</i> .....	3064
Anthony Knittel	
<i>Phonological Encoding of Sentence Production</i> .....	3070
Caitlin Hilliard, Katrina Furth, T. Florian Jaeger	
<i>To Go or to Stay: Age Differences in Cognitive Foraging</i> .....	3076
Jessie Chin, Wai-Tat Fu, Elizabeth Stine-Morrow	
<i>Using a Model-Based fMRI Analysis Method to Locate the Neural Correlates of a Multitasking Bottleneck</i> .....	3077
Jelmer Borst, Niels Taatgen, Hedderik Van Rijn	
<i>Explaining representational shifts by selective attention, selective memorization, and random chance</i> .....	3078
Toshihiko Matsuka, Hidehito Honda, Sou Matsuura	

<i>Coordination of Attention to Local and Global Features: Fractal Patterns in a Speeded-Categorization Task</i> .....	3084
Ramon D. Castillo, Heidi Kloos, Shana Vanderburgh , John G. Holden	
<i>Bridging the Micro-Macro Divide: Multi-Scale Modeling of Technology Adoption</i> .....	3090
Erica Briscoe, Ethan Trehitt, Clayton Hutto	
<i>On the Use of Size Modifiers When Referring to Visible Objects</i> .....	3091
Margaret Mitchell, Kees van Deemter, Ehud Reiter	
<i>Cause of the difference in the cognitive process between intervention and observation on causal induction -A study of the effect of ego-involvement-</i> .....	3097
Yoshiko Arai	
<i>Children posit hidden causes to explain causal variability</i> .....	3098
David Buchanan, David Sobel	
<i>Unconscious vs. Conscious Thought in Causal Decision Making</i> .....	3104
Stefan Mangold, York Haggmayer	
<i>Heuristics in Covariation-based Induction of Causal Models: Sufficiency and Necessity Priors</i> ..	3110
Ralf Mayrhofer, Michael Waldmann	
<i>Conceptual Combination versus Critical Combination:Devising Creative Solutions using the Sequential Application of Crowds</i> .....	3116
Yuko Tanaka, Yasuaki Sakamoto, Takashi Kusumi	
<i>Comics on the Brain: Structure and Meaning in Sequential Image Comprehension</i> .....	3122
Neil Cohn, Martin Paczynski, Phil Holcomb, Ray Jackendoff, Gina Kuperberg	
<i>How visual saliency affects referent accessibility</i> .....	3128
Jorrig Vogels, Emiel Krahmer, Alfons Maes	
<i>Adults Are Sensitive to Variance When Making Likelihood Judgments</i> .....	3134
Dana L. Chesney, Natalie A. Obrecht	
<i>Experts' Judgments of Likelihood: Fast but not Frugal?</i> .....	3140
Adrian Banks, Stefan Gershater	
<i>Characteristics of divergent mathematical thinking in eighth grade students</i> .....	3141
Donna Kotsopoulos, Joanne Lee, Annalise Clarkson	
<i>Introducing Chinese Characters to Beginners Through the Use of Embodied Animations</i> .....	3142
MingTsan Lu, John Black	
<i>The different effects of thinking aloud and writing on graph comprehension</i> .....	3143
Nadia Ali, David Peebles	
<i>Action, Imagery, and the N400</i> .....	3149
Michael Metzler	
<i>Slow to anger: Emergence of emotionally loaded words and faces from interocular suppression</i> .	3155
David Vinson, Andrew Anderson, William Ratoff, Bahador Bahrami, Gabriella Vigliocco	
<i>Assessing Young Children's Hierarchical Action Segmentation</i> .....	3156
Meredith Meyer, Dare A. Baldwin, Kara Sage	

<i>Segmenting and Recognizing Human Action using Low-level Video Features</i> .....	3162
Daphna Buchsbaum, Kevin Canini, Thomas Griffiths	
<i>Geographic Event Conceptualization: Where Spatial and Cognitive Sciences Meet</i> .....	3168
Rui Li, Alexander Klippel, Jinlong Yang	
<i>Ethnocentrism Maintains Cooperation, but Keeping One's Children Close Fuels It</i> .....	3174
Artem Kaznatcheev, Thomas R. Shultz	
<i>The ghosts of number forms: bending mental number lines in non-synaesthetes?</i> .....	3180
Shogo Makioka	
<i>Defining salience for landmark selection</i> .....	3181
Laura Carlson, Jared Miller	
<i>Testing the "activation reflects encoding transparency" principle in writing systems using repetition blindness</i> .....	3182
Catherine Caldwell-Harris, Hui-wen Cheng, Tingyan Li, Alison Morris	
<i>Cascading activation from phoneme to articulatory levels: Evidence from the picture-word interference task</i> .....	3183
Ariel Goldberg	
<i>Sound Symbolic Naming for Moving Objects</i> .....	3184
Patrick D. Thompson, Zachary Estes	
<i>Analogy and Explanation in Learning Causal System Categories</i> .....	3185
Micah Goldwater, Dedre Gentner	
<i>What Ockham's Razor Cuts: Quantifying simplicity in explanation choice</i> .....	3186
Michael Pacer, Tania Lombrozo	
<i>Spatial Registry Model : Towards a Grounded Account for Executive Attention</i> .....	3187
Nader Noori, Laurent Itti	
<i>Individual differences in anchoring: numerical ability, education and experience</i> .....	3193
Matthew Welsh, Paul Delfabbro, Nicholas Burns, Steve Begg	
<i>The Effects of Numeral Classifiers and Taxonomic Categories in Chinese Speakers' Recall of Nouns</i> .....	3199
Shuping Huang, Jenn-Yeu Chen	
<i>Working Memory Capacity and Generalization in Predictive Learning</i> .....	3205
Andy Wills, Thomas Barrasin, Ian McLaren	
<i>Interaction of goal-directed and Pavlovian systems in aversive domains</i> .....	3211
Francesco Rigoli, Enea Francesco Pavone, Giovanni Pezzulo	
<i>Metacognitive Prompting Aids Dynamic Decision-Making</i> .....	3217
Jarrett Evans, Dominik Güss, Walter Boot	
<i>Grammatical aspect in language production: Using gesture to reveal event representations</i> .....	3223
Fey Parrill, Benjamin Bergen, Patricia Lichtenstein	
<i>The Simpler, the Better: A New Challenge for Fair-Division Theory</i> .....	3229
Nicolas Dupuis-Roy, Frédéric Gosselin	

<i>Determining the Representation of Sentences in Memory</i> .....	3235
Stephen Smith, Simon Dennis	
<i>Cross-domain variation in children's causal reasoning</i> .....	3236
Elizabeth Seiver, Alison Gopnik	
<i>Gender, Spatial Ability, and High-Stakes Testing</i> .....	3237
Teomara Rutherford, David Lee, Michael Martinez	
<i>The Relationship Between Gesture and Speech Predicts Who Will Learn to Solve a Chemistry Problem</i> .....	3243
Raedy Ping, Elena Zinchenko, Samuel Larson, Mary-Anne Decatur, Susan Goldin-Meadow	
<i>Joint Action Theory and Pair Analytics: In-vivo Studies of Cognition and Social Interaction in Collaborative Visual Analytics</i> .....	3244
Arias-Hernandez Richard, Kaastra Linda T., Fisher Brian	
<i>GREEBLES Greeble greeb. On reduction in speech and gesture in repeated references.</i> .....	3250
Marieke Hoetjes, Ruud Koolen, Martijn Goudbeek, Emiel Krahmer, Marc Swerts	
<i>Graphical Displays for Online Information Seeking</i> .....	3256
Kirsten Butcher, Sarah Davies, Ashley Crockett, Robert Zheng, Aaron Dewald, Anne Cook	
<i>Spontaneous corporal coordination in empathic and non-empathic interactions</i> .....	3257
Carlos Cornejo, Diego Cosmelli, Esteban Hurtado, Vladimir López	
<i>The Effects of Self-Explanation and Practice on Strategy Use</i> .....	3258
Katherine McEldoon, Kelley Durkin, Bethany Rittle-Johnson	
<i>Impedance Effects of Visual and Spatial Content upon Language-to-Logic Translation Accuracy</i>	3259
Dave Barker-Plummer, Robert Dale, Richard Cox	
<i>Holographic Reduced Representations and Vector Symbolic Architectures as Tools for Cognitive Modelling</i> .....	3265
Matthew A. Kelly, Robert L. West	
<i>Cross-modal effects in statistical learning: Evidence from the McGurk illusion</i> .....	3266
Aaron Mitchel, Morten Christiansen, Daniel Weiss	
<i>Productivity and Reuse in Language: a Developmental Study</i> .....	3267
Timothy O'Donnell, Jesse Snedeker, Joshua Tenenbaum, Noah Goodman	
<i>Generalization to Novel Consonants in Artificial Grammar Learning</i> .....	3268
Sara Finley	
<i>Memory limitations alone do not lead to over-regularization: An experimental and computational investigation</i> .....	3274
Amy Perfors	
<i>Learning individual words and learning about words simultaneously</i> .....	3280
Sylvia Yuan, Amy Perfors, Josh Tenenbaum, Fei Xu	
<i>Do motion and auditory metaphors have unique neural substrates?</i> .....	3286
Gwenda L Schmidt, Elizabeth Miller, Stephen Agauas	

<i>Language Brokering Experience Affects Phrase Interpretation and Sound Segmentation: Evidence from Spanish-English Bilinguals</i> .....	3287
Kelly Milliken, Belem Lopez, Jyotsna Vaid, Chaitra Rao	
<i>Identifying Metaphoric Antonyms in a Corpus Analysis of Finance Articles</i> .....	3288
Aaron Gerow, Mark Keane	
<i>Pragmatic expectations and coreference: how alternative constructions and referring expressions can serve as cues</i> .....	3293
Peter Baumann, Lars Konieczny, Barbara Hemforth	
<i>Making Inferences: The Case of Scalar Implicature Processing</i> .....	3299
Judith Degen, Michael K. Tanenhaus	
<i>Does simile comprehension differ from metaphor comprehension? -A functional MRI study-</i> ...	3305
Midori Shibata, Akira Toyomura, Jun-ichi Abe	
<i>Cross-Linguistic Influence in Chinese-English Bilinguals: An Eye-Tracking Study</i> .....	3306
Alexandra Mateu-Martin, Ruiting Jia, Patrick Bolger	
<i>Secret Agents or Sleeping Beauties: What Happens to Repaired Constituents?</i> .....	3307
Noa Shuval, Lars Konieczny, Barbara Hemforth	
<i>Topic Shift in Efficient Discourse Production</i> .....	3313
Ting Qian, T. Florian Jaeger	
<i>Determinants of learning difficulty and boundary uncertainty in unidimensional category learning</i> .....	3319
Gyslain Giguère, Bradley C. Love	
<i>Perceptual learning for a familiar category under inversion: An analogue of face inversion?</i> ....	3320
IPL McLaren, Ciro Civile	
<i>Informativity versus logic: Children and adults take different approaches to word learning</i> .....	3326
Michael Ramscar, Melody Dye, Joseph Klein, Linda Diana Ruiz, Nicole Aguirre, Lily Sadaat	
<i>The Effect of Labels on Children's Category Learning</i> .....	3332
Catherine A. Best, Christopher W. Robinson, Vladimir M. Sloutsky	
<i>Multisensory Statistical Learning: Can Cross-Modal Associations Be Acquired?</i> .....	3337
Anne Walk, Christopher Conway	
<i>Individual Differences and Lexical Learning: Links to memory for faces, things, and words</i> .....	3343
Ashlee Shaw, Alexander Demos, Dana Arthur, James Magnuson	
<i>Detecting Student Metacognition and Learning in Problem Solving with Biologically Inspired Cognitive Architectures</i> .....	3349
Alexei V. Samsonovich, Anastasia Kitsantas, Ellen O'Brien, Kenneth A. De Jong	
<i>Retrieving semantic information from faces and voices.</i> .....	3350
Catherine Barsics	
<i>Verbal descriptions hurt face recognition in children and adults</i> .....	3351
Valentine Vanootighem, Serge Brédart, Hedwige Dehon	

<i>Trial-by-trial variance in visual working memory capacity estimates as a window into the architecture of working memory</i> .....	3352
Timothy Brady	
<i>The Coexistence Theory: Support from an Activation-Based Memory Model</i> .....	3353
Leamarie Gordon, Amy Shapiro	
<i>The Impact of Musical Experience on Statistical Language Learning</i> .....	3354
Anthony Shook, Viorica Marian, James Bartolotti, Scott Schroeder, Sarah Chabal	
<i>An electroencephalographic examination of the origin of cognitive decline in aging adults during the colour word Stroop task</i> .....	3355
Clare Killikelly, Denes Szucs	
<i>Theory of Mind brain regions are sensitive to the content, not the structural complexity, of belief attributions</i> .....	3356
Jorie Koster-Hale, Rebecca Saxe	
<i>Religious Belief Systems of Persons with High Functioning Autism</i> .....	3362
Catherine Caldwell-Harris, Caitlin Fox Murphy, Tessa Velazquez, Patrick McNamara	
<i>The Science Assistments Project: Intelligent tutoring for scientific inquiry skills</i> .....	3367
Janice Gobert, Michael Sao Pedro, Orlando Montalvo, Ermal Toto, Matthew Bachmann, Ryan Baker	
<i>A Dynamical Systems Reformulation of the Normalized Recurrence Algorithm</i> .....	3368
Bo Pedersen	
<i>The effect of confidence hysteresis on number perception and decision making</i> .....	3369
Darko Odic, Howard Hock, Justin Halberda	
<i>Cognitive Bubbles and Firewalls: Epistemic Immunizations in Human Reasoning</i> .....	3370
Lorenzo Magnani, Tommaso Bertolotti	
<i>Transductionally Bounded Hierarchical Systems</i> .....	3376
Sterling Somers, Francis Jeanson	
<i>Exploring Moral Reasoning in a Cognitive Architecture</i> .....	3381
Wayne Iba, Pat Langley	
<i>Representation Based on Goal-Achievement: Explaining Motor Intentionality</i> .....	3387
Hsi-wen Daniel Liu	
<i>Simultaneous Prediction and Reaction in Sequence Learning</i> .....	3388
Ronni Jupson, Rick Dale	
<i>Processing Scalar Inferences in Face-Threatening Contexts</i> .....	3389
Jean-François Bonnefon, Wim De Neys, Aidan Feeney	
<i>Learning Affects Strategic Processing on Raven's Advanced Progressive Matrices</i> .....	3395
Alexander Petrov, Taylor Hayes, Per Sederberg	
<i>The contribution of cognitive style, cognitive abilities and expertise to the solving of complex problems</i> .....	3396
Aline Sevenants, Niki Verschueren, Walter Schaeken	

<i>Distracting the Hands: The effect of visuospatial interference upon iconic gesture production and speech</i> .....	3402
Lisa Smithson, Elena Nicoladis	
<i>Simulating the Temporal Dynamics of Learning-Related Shifts in Generalization Gradients with a Single-Layer Perceptron</i> .....	3403
Matthew Wisniewski, Lauren Guillette, Milen Radell, Christopher Sturdy, Eduardo Mercado	
<i>Bilinguals Have Different Hemispheric Lateralization in Visual Word Processing from Monolinguals</i> .....	3409
Sze-Man Lam, Janet Hui-wen Hsiao	
<i>In search of the elusive Initial model</i> .....	3415
Hugues Lortie Forgues, Marie-Laurence Brunet, Henry Markovits	
<i>Inductive selectivity and integration of information from multiple sources</i> .....	3416
Nadya Vasilyeva, John Coley	
<i>Accidental Proximal Events of Teleological Scenarios Increase Counterfactual Reasoning</i> .....	3417
Jae Hyuk Choi, Kyung Soo Do	
<i>Individual Performance in Optimal Bayesian Inference</i> .....	3418
Rakesh Patel	
<i>An investigation of search strategies for hypothesis generation using eye movement data</i> .....	3424
Miki Matsumuro, Kazuhisa Miwa	
<i>Early Exposure to Pictures Facilitates Development of Referential Understanding</i> .....	3430
Caren Walker, Lisa Walker, Patricia Ganea	
<i>Effects of Grounded and Formal Representations on Combinatorics Learning</i> .....	3431
David Braithwaite, Robert Goldstone	
<i>A Linguistic Remark on SNARC: Language and Perceptual Processes in Spatial-Numerical Association</i> .....	3437
Sterling Hutchinson, Sophia Johnson, Max Louwerse	
<i>Testing Cratylus' Hypothesis: Aspectual Iconicity</i> .....	3443
Daniel Klenovsak, Dietmar Zaefferer	
<i>In Defense of Spatial Models of Lexical Semantics</i> .....	3444
Michael Jones, Thomas Gruenenfelder, Gabriel Recchia	
<i>Do Culture Related Factors Influence Students' Critical Thinking Use?</i> .....	3450
Emmanuel Manalo, Takashi Kusumi, Masuo Koyasu, Yasushi Michita, Yuko Tanaka	
<i>Having an Interdependent Self-Construal Leads to Greater Weighting of Data In Causal Judgment</i> .....	3451
Kelly M. Goedert, Lisa R. Grimm, Arthur B. Markman, Barbara A. Spellman	
<i>Top-down and Bottom-up Process of Animacy Perception: An ERP study</i> .....	3452
Haruaki Fukuda, Kazuhiro Ueda	
<i>Expanding the Space of Cognition via Multi-scale Entrainment: A Medium for Education and Enculturation</i> .....	3453
J. Scott Jordan, Kris Ariyabuddhiphongs, Erica Ranade, Andrew Baker	

<i>Rolling Down South: A Topographical Heuristic Guiding Navigation</i> .....	3454
Stephanie A. Gagnon, Tad T. Brunye, Holly A. Taylor	
<i>Individual Differences in Mental Rotation : Piecemeal vs Holistic Processes</i> .....	3455
Peter Khooshabeh, Mary Hegarty, Thomas F. Shipley	
<i>Decay of Information in Spatial Mental Images</i> .....	3456
Don Lyon	
<i>Is location memory biased towards a spatial or a functional prototype?</i> .....	3457
Paula Engelbrecht	
<i>Orientation Preferences for Photographed Objects: Effects of Handedness and Object Type</i> .....	3458
Rebecca Rhodes, Jyotsna Vaid, Eleazar Montes	
<i>The Influence of Conceptual Structure on Structural Priming</i> .....	3459
Ann Bungler, Anna Papafragou, John Trueswell	
<i>Spatial Thinking in Physics: Longitudinal Impacts of 3-D Spatial Training</i> .....	3465
David I. Miller, Diane F. Halpern	
<i>Sequential Integration of Object Locations in a Spatial Updating and Reasoning Task</i> .....	3471
Sven Bertel, Hyunkyun Lee, Wai-Tat Fu	
<i>Cognitive processes underlying spatial belief revision</i> .....	3477
Leandra Bucher, Antje Krumnack, Jelica Nejasmic, Markus Knauff	
<i>Is there any Need to Mention Induction?</i> .....	3483
Chris Thornton	
<i>Modeling Performance Differences across Systems, Tasks, and Strategies</i> .....	3489
Jessica Lee, Dorrit Billman	
<i>A hybrid cognitive architecture based on the relationship between consciousness, memory and attention</i> .....	3495
Eunsook Kim, Hyunjung Shin	
<i>Interactive diagrams reduce the split-attention effect in geometry</i> .....	3496
Robert Hausmann, Daniel Dickison, John Connelly, Brendon Towle	
<i>Top down predictions moderate visual appearance of attended objects</i> .....	3497
Lisa Bauer, Marjan Persuh, Mabel Gomez, Robert Melara	
<i>Category Learning From Alignable Examples: An Application to Structural Geology</i> .....	3498
Benjamin D. Jee, Chad Desharnais, Joanna V. Staley	
<i>What is more influential in idea generation for innovation: information or individual adoption category?</i> .....	3499
Kazuhiro Ueda, Yuichi Washida	
<i>Contingent Uncertainty, Strategic Uncertainty, and Coordination</i> .....	3500
Thomas Wisdom, Keigo Inukai, Kengo Kurosaka, Wataru Toyokawa, Yoichi Hizen, Tatsuya Kameda	
<i>Iconicity in language processing: What signed languages reveal</i> .....	3501
Robin L. Thompson, Robert Skinner, David P Vinson, Gabriella Vigliocco	

<i>Evaluating the Divergent Auto-Encoder (DIVA) as a Machine Learning Algorithm</i> .....	3502
Kenneth Kurtz, Xavier Oyarzabal	
<i>General Magnitude Representation and Mathematics: How Number and Area Acuity Relate to Math Ability</i> .....	3503
Justin Bonny, Stella Lourenco	
<i>Going through the Motions: Skill Differences in the Representation of Arithmetic Operations</i> ..	3504
Marcie Penner-Wilger, David H. Landy, Xiaoyu Zhang, Alison Weitzer	
<i>Context dependency and systematicity in connectionism</i> .....	3505
Jordi Majà	
<i>Creative Interference and States of Potentiality in Analogy Problem Solving</i> .....	3506
Liane Gabora, Adam Saab	
<i>Robust Language Acquisition – an Emergent Consequence of Language as a Complex Adaptive System</i> .....	3512
Nick Ellis, Matthew Brook O’Donnell	
<i>When does provision of instruction promote learning?</i> .....	3518
Hee Seung Lee, Abraham Anderson, Shawn Betts, John Anderson	
<i>The mirage of morphological complexity</i> .....	3524
Fermin Moscoso del Prado	
<i>The Effects of Peer Tutoring and Teachable Agent on Interest and Task Performance</i> .....	3530
Yeonhee So, Youngok Kim	
<i>Is Arithmetic Embodied? Differential Interference of Sequential Finger Tapping on Addition during a Dual Task Paradigm</i> .....	3535
Firat Soyulu, Sharlene Newman	
<i>Modeling the Effect of Lexico-Syntactic Gender on Spoken-Word Recognition</i> .....	3541
Garance PARIS, Matthew CROCKER, Marshall MAYBERRY	
<i>A Developmental Trend in the Structure of Time-Estimation Performance</i> .....	3547
Lori Gresham, Sebastian Wallot, Heidi Kloos, Guy Van Orden	
<i>Impact of emotion on numerical estimation</i> .....	3552
Katrina Rodzon, Joesph Baker, Kerry Jordan	
<i>Is Insight Always the Same? An fMRI Study of Insight</i> .....	3558
Edward Cranford, Jarrod Moss	
<i>Pitch Structure of Melodic Lines: An Interface between Physics and Perception</i> .....	3564
Jorge Eduardo Useche, Rafael Germán Hurtado	
<i>It’s all about the game: Infants’ action strategies during imitation are influenced by their prior expectations</i> .....	3570
Yue Yu, Tamar Kushnir	
<i>The integration of frequency and phonetic variation in the perception of accented speech</i> .....	3575
Marie-Catherine de Marneffe, John Tomlinson, Marisa Tice, Meghan Sumner	

<i>Towards Computational Guessing of Unknown Word Meanings: The Ontological Semantic Approach</i> .....	3581
Julia M. Taylor, Victor Raskin, Christian F. Hempelmann	
<i>The cognitive impact of chronic low back pain: positive effect of multidisciplinary pain therapy</i> .	3587
Haili Wang, Simone Gantz, Marcus Schiltewolf	
<i>Recommendation Systems that Establish New Forms of Representational Reality through Journalistic Content</i> .....	3588
Walter Teixeira Lima Junior	
<i>(How) Are features Inherited?</i> .....	3589
Sandeep Prasada, Samuel Pitt-Stoller	
<b>Author Index</b> .....	3590
<b>Reviewers List</b> .....	3612

