Table of Contents

Introduction ............................................................................................................. 1
Organizing Committee ............................................................................................ 3
Program Committee ............................................................................................... 4
Awards ..................................................................................................................... 5
Sponsors .................................................................................................................. 7
Invited Plenary Presentations .................................................................................. 8
Symposia ............................................................................................................... 9
Tutorials and Workshops ....................................................................................... 15
Publication Based Talks ....................................................................................... 18
List of Accepted Papers ....................................................................................... 20

Workshops and Tutorials

Tutorial on Model Comparison Methods ............................................................... 44
Jay Myung, Mark Pitt

PRE-CogSci 2011 – Bridging the gap between computational, empirical and theoretical approaches to reference ................................................................. 46
Kees van Deemter, Albert Gatt, Roger van Gompel, Emiel Krahmer

ACT-R Tutorial .................................................................................................... 48
Niels Taatgen, Jelmer Borst

New Developments in the Cognitive Science of Religion. Hosted by the International Association for the Cognitive Science of Religion (IACSR) ................................................................. 50
Robert N. McCauley, Armin W. Geertz, Joseph Bulbulia

Nengo and the Neural Engineering Framework: Connecting Cognitive Theory to Neuroscience ................................................................. 52
Chris Eliasmith, Terrence Stewart

Tutorial on using the Psychology Experiment Building Language (PEBL) in the laboratory, the field, and the classroom ................................................................. 54
Shane Mueller

Tutorial: Doing Bayesian Data Analysis with R and BUGS .................................. 56
John Kruschke

Hannah Riley Bowles, Laurie Beth Feldman, Janet van Hell, Judith Kroll, Suparna Rajaram
Workshop on Computational Models of Spatial Language Interpretation – CoSLI-2 in conjunction
with CogSci 2011 ................................................................. 60
Joana Hois, Robert J. Ross, John Kelleher, John A. Bateman

Optimality Theory as a General Cognitive Architecture ......................... 62
Tamas Biro, Judit Gervain

Perspective and Embodiment ..................................................... 64
Holly Taylor, Elena Andonova

How to use Mechanical Turk for Cognitive Science Research .................. 66
Winter Mason, Siddharth Suri

Half-Day Workshop on Social Computing and Collective Intelligence .......... 68
Yasuaki Sakamoto, Wai-Tat Fu

Doing Cognitive Science by Hand: A Tutorial on Computer Mouse-Tracking .... 70
Jonathan Freeman, Rick Dale, Michael Spivey

Preparing and Presenting Complex Images for Perceptual Cognitive Studies .... 72
Javid Sadr

Tutorial on the Icarus Cognitive Architecture .................................. 74
Pat Langley, Dongkyu Choi

Keynote: Anjan Chatterjee

Space, Time and Causality: Some Neural Observations ............................. 686
Anjan Chatterjee

Symposium: Finding your way: The cognitive science of navigation

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

Education and Tutoring Systems

Does Teaching Experience Help? Differences in the Assessment of Tutees’ Understanding Between Teacher Tutors and Student Tutors ............................................. 78
Stephanie Herppich, Jörg Wittwer, Matthias Nückles, Alexander Renkl

Measuring Learning Progress via Self-Explanations versus Problem Solving - A Suggestion for Optimizing Adaptation in Intelligent Tutoring Systems ................................ 84
Christine Otieno, Rolf Schwonke, Alexander Renkl, Vincent Aleven, Ron Salden

Exploring the Assistance Dilemma: The Case of Context Personalization ........ 90
Candace Walkington, Keith Maull

An Investigation of Accuracy of Metacognitive Judgments during Learning with an Intelligent Multi-Agent Hypermedia Environment .............................................. 96
Reza Feyzi Behnagh, Zohreh Khezri, Roger Azevedo

Modeling Abstract Numeric Relations Using Concrete Notations ................ 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
An Ideal Observer Model of Visual Short-Term Memory Predicts Human Capacity–Precision

Chris R. Sims, Robert A. Jacobs, David C. Knill

Learning and cognitive development

Infants Use Social Signals to Learn from Unfamiliar Referential Cues .................. 196
Rachel Wu, Natasha Kirkham, Kristen Swan, Teodora Gliga

Toddlers’ understanding of prediction, intervention, and means of transmission: When psychological outcomes are easier than physical ones ................................. 201
Paul Muentener, Daniel Friel, Laura Schulz

Modeling the Logarithmic-To-Linear Shift In Representations Of Numerical Magnitudes .... 207
Leif Kåre Lende, Niels Taatgen

Ghosts of Theories Past: The Ever-Present Influence of Long-Discarded Theories ............ 213
Andrew Shtulman, Joshua Valcarcel

Modeling cognitive development

Templatic features for modeling phoneme acquisition ................................ 219
Emmanuel Dupoux, Guillaume Beraud-Sudreau, Shigeki Sagayama

Multisensory Associative-Pair Learning: Evidence for ‘Unitization’ as a specialized mechanism . 225
Elan Barenholtz, Meredith Davidson, David Lewkowicz

The inception of simulation: a hypothesis for the role of dreams in young children .......... 231
Serge Thill, Henrik Svensson

An Embodied Developmental Robotic Model of Interactions between Numbers and Space .... 237
Marek Rucinski, Angelo Cangelosi, Tony Belpaeme

Concepts and categories

A Comparison of Three Measures of the Association Between a Feature and a Concept ........ 243
Matthew Zeigenfuse, Michael Lee

Graded structure in adjective categories ......................................................... 249
Simon De Deyne, Wouter Voorspoels, Steven Verheyen, Dan Navarro, Gert Storms

Incremental Models of Natural Language Category Acquisition .......................... 255
Trevor Fountain, Mirella Lapata

Salient in the mind, salient in prosody .......................................................... 261
Constantijn Kaland, Emiel Krahmer, Marc Swerts

Situated cognition

Sanjay Chandrasekharan, Nancy J. Nersessian

Distributed Cognition and Insight Problem Solving ........................................ 273
Frederic Vallee-Tourangeau, Anna Weller, Gaelle Villejoubert

Interactive Coin Addition: How Hands Can Help Us Think ............................ 279
Hansjörg Neth, Stephen J. Payne
Multisensory Sensemaking: Children’s Exploratory Behavior has Organizing Structure at Micro- and Macro-scales ................................................................. 285
Nancy Owens Renner

Symposium: Interactivity and thought

Interactivity and Thought ................................................................. 290
David Kirsh, Susan Goldin-Meadow, Herb Clark, Yvonne Rogers

Symposium: The development of spatial cognition during childhood

The Development of Spatial Cognition During Childhood: Extending Understanding of Perception, Memory, Language, Maps, and Gestures ........................................... 292
Anne Schutte, Heidi Fleharty, Alycia Hund, David Uttal, Megan Sauter, Nina Simms, Dedre Gentner

Instruction and teaching

Pretesting with Multiple-choice Questions Facilitates Learning .................. 294
Jeri Little, Elizabeth Bjork

Designing learning materials to foster transfer of principles ......................... 300
Lennart Schalk, Henrik Saalbach, Elsbeth Stern

The Role of Comparison in Mathematics Learning .................................... 306
Shanta Hattikudur, Martha Alibali

The Effects of Peer Communication with Diagrams on Students’ Math Word Problem Solving Processes and Outcomes ......................................................... 312
Yuri Uesaka, Emmanuel Manalo

Acquiring syntactic structure

Functional Biases in Language Learning: Evidence from Word Order and Case-Marking Interaction ................................................................. 318
Maryia Fedzechkina, T. Florian Jaeger, Elissa L. Newport

Semantic Regularities in Grammatical Categories: Learning Grammatical Gender in an Artificial Language ................................................................. 324
Jelena Mirkovic, Sarah Forrest, Gareth Gaskell

Multimodal Transfer of Repetition Patterns in Artificial Grammar Learning ............. 330
Sara Finley, Morten Christiansen

Storage and computation in syntax: Evidence from relative clause priming ........... 336
Melissa Troyer, Timothy J. O’Donnell, Evelina Fedorenko, Edward Gibson

Cognitive architectures and formal modeling

A Memory-Based Account of the Spatial Prisoner’s Dilemma ....................... 342
Chenna Reddy Cotla

Categorial compositionality continued: A category theory explanation for quasi-systematicity .... 348
Steven Phillips, William Wilson
Learning to perceive time: A connectionist, memory-decay model of the development of interval timing in infants .......................................................... 354
Caspar Addyman, Robert French, Denis Mareschal, Elizabeth Thomas

Racing for the City: The Recognition Heuristic and Compensatory Alternatives .............. 360
Katja Mehlhorn, Julian N. Marewski

Processing complex information and inference
Naive Inference viewed as Computation .......................................................... 366
Chris Thornton

The Influence of Learner Characteristics on Conducting Scientific Inquiry Within Microworlds . 372
Janice Gobert, Juelaila Raziuddin, Michael Sao Pedro

Which Parts of Scientific Explanations are Most Important? ........................................ 378
Benjamin Rottman, Frank Keil

Effects of Aging and Individual Differences on Credibility Judgment of Online Health Information 384
Q. Vera Liao, Wai-Tat Fu

Emotions from physical states to social interactions
Affective and Non-affective Meaning in Words and Pictures ........................................ 390
Vicky Tzuyin Lai, Peter Hagoort, Daniel Casasanto

Reverse Appraisal: Inferring from Emotion Displays who is the Cooperator and the Competitor in a Social Dilemma ......................................................... 396
Celso de Melo, Peter Carnevale, Jonathan Gratch

Dynamical Emotions: Bodily Dynamics of Affect during Problem Solving ......................... 402
Sidney D’Mello

Simplicity Effects in the Experience of Near-Miss ..................................................... 408
Jean-Louis Dessalles

Symposium: Place holder structure and numerical computation
Place holder structure and numerical computation .................................................. 414
David Barner, Neon Brooks, Michael Frank, Elizabet Spaepen

Spatial representation
The Schematic Representation of Spatial Relations: Evidence from Group and Single-Case Lesion Studies ............................................................. 417
Alexander Kranjce, Prin Amorapanth, Anjan Chatterjee

Priming Spatial Perspective .......................................................... 423
Elena Andonova, Kenny R. Coventry

A computational theory of human perceptual mapping .............................................. 429
Wai Yeap

Beyond the retina: Evidence for a face inversion effect in the environmental frame of reference . 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
**Contrast in natural language concepts: An exemplar-based approach** ........................................ 531
Wouter Voorspoels, Gert Storms, Wolf Vanpaemel

**Perceptual processes**

*The Thickness of Musical Pitch: Psychophysical evidence for the Whorfian hypothesis* .......... 537
Sarah Dolscheid, Shakila Shayan, Asifa Majid, Daniel Casasanto

*Humans use different statistics for sequence analysis depending on the task* ......................... 543
Dinis Gokaydin, Anna Ma-Wyatt, Daniel Navarro, Amy Perfors

*Examining the Role of Object Size in Judgments of Lateral Separation* .......................... 549
Robert Thomson, Guy Lacroix

*Basic Information Processing Effects from Perceptual Learning in Complex, Real-World Domains* ................................................................. 555
Khanh-Phuong Thai, Mettler Everett, Kellman Philip

**Rumelhart Lecture: Judea Pearl**

*The algorithmization of counterfactuals* ................................................................. 3051
Judea Pearl

**Posters**

*Coordinating Touch and Vision to Learn What Objects Look Like* .............................. 562
Walter Talbott, Ian Fasel, Javier Molina, Virginia de Sa, Javier Movellan

*When Lighting a Candle Becomes a Superstition: Analogical Recategorization through the Application of Relational Categories* ..................... 568
Nicolás Oberholzer, Máximo Trench, Ricardo Minervino

*Unifying Deduction, Induction, and Analogy by the AMBR Model* .............................. 574
Georgi Petkov, Ivan Vankov, Boicho Kokinov

*Exploring Visual Attention in Musicians: Temporal, Spatial and Capacity Considerations* ...... 580
Ahnate Lim, Scott Sinnett

*Forward Physics: How people learn and generalize novel dynamical models* ................. 586
Tomer Ullman, Noah Goodman, Josh Tenenbaum

*The Onset of Syntactic Bootstrapping in Word Learning: Evidence from a Computational Study* 587
Afra Alishahi, Pirita Pirita Pyykkönen

*Modeling Verb Lexicalization Biases using Hierarchical Bayesian Models* ................. 593
Catherine Havasi, Robert Speer

*English and Mandarin Speakers May Think about Time Differently, but for a Different Reason* ........................................ 599
Jenn-Yeu Chen, Bishan Liang, Padraig G. O’Seaghdha, Xishan Huang

*Dreaming Cogniton and Acculturation Processes* .......................................................... 600
Sang Bok Lee

*Syntactic Biases in Intentionality Judgments* ................................................................. 601
Brent Strickland, Matt Fischer, Elodie Peyroux, Frank Keil
Color Language Does Not Affect Chromatic Thresholds ................................. 607
Alexandra Clifford, Paul T. Sowden, Ian R.L. Davies

The Significance of Memory Retrieval in Perceptual Interference .......................... 608
Ava Santos, Lawrence Barsalou

A Study of the Pragmatic Prototypical Categories of Rhetorical Questions .................. 609
Hongbo Chen

Towards a Categorization-Based Model of Similarity ......................................... 614
Steven Verheyen, Gert Storms

Credibility of Stories about Design History ....................................................... 620
Sergio Chaigneau, Cristián Coo, Vicente Soto

What Varying the Learning Task and Category Structure Reveals About Inference Learning ........ 625
Seth Chin-Parker

Observational Category Learning as a Path to More Robust Generative Knowledge ............ 631
Kimery R. Levering, Kenneth J. Kurtz

Perceptual and Conceptual Cues in Classification and Inference Tasks ......................... 637
Clare Sims, Eliana Colunga

Types of Cognitive Content and the Role of Relational Processing in the Illusion of Explanatory
Depth ....................................................................................................................... 643
Graham Silk-Eglit, Kenneth Kurtz

Does Category Labeling Lead to Forgetting? ......................................................... 649
Nathaniel Blanco, Todd Gureckis

Priming Effects of Religious Concepts on Moral Judgment: Between Mean Values and Variation .... 655
Ulrik Lyngs

Neural Cognitive Modelling: A Biologically Constrained Spiking Neuron Model of the Tower of
Hanoi Task ............................................................................................................... 656
Terrence Stewart, Chris Eliasmith

Implementation of a Prediction-Based Cognitive Framework ...................................... 662
Brian Colder

Representations of knowledge states when writing: Keeping the reader’s mind in mind .......... 663
Joan Peskin, Carly Prusky, Julie Comay

Extracting statistical relations from noisy visual scenes ........................................... 664
Kristen Swan, Natasha Kirkham

Incomplete sampling leads to broader category generalizations in preschoolers ............... 665
Andrew G. Young, Sunae Kim, Charles W. Kalish

What Can You Learn From A Deceptive Teacher? Sample But Not Population Statistics ........ 666
Jordan Thevenow-Harrison, Charles Kalish

Experience Modifies Neural Basis of Language: Evidence from Early-Blind Children ........ 667
Marina Bedny, Hilary Richardson, Rebecca Saxe
The role of adult input on numeracy development ........................................ 668
Joanne Lee, Donna Kotsopoulos, Samantha Makosz, Anupreet Tumber

Do children and adults learn forward and inverse conditional probabilities together? ........... 669
Charles Kalish

The Influence of Co-occurrence Probability on Knowledge Generalization in Preschool-Age Children .................................................. 674
Bryan Matlen, Anna Fisher, Karrie Godwin

Subitizing and Mathematics Performance in Early Childhood ........................................ 680
Cathy Yun, Amanda Havard, Dale Farra, Mark Lipsy, Carol Bilbrey, Kerry Hofer

Neural Basis of Event Words ................................................................. 685
Swetha Dravida, Marina Bedny, Rebecca Saxe

Space, Time and Causality: Some Neural Observations .............................................. 686
Anjan Chatterjee

A Corpus Analysis of Strategy Video Game Play in Starcraft: Brood War ......................... 687
Joshua Lewis, Patrick Trinh, David Kirsh

Using a Cognitive Model for an In-Depth Analysis of the Tower of London ..................... 693
Rebecca Albrect, Sven Brüssow, Christoph Kaller, Marco Ragni

Competitive Mate Choice: How Need for Speed Beats Quests for Quality and Harmony ........ 699
Hansjörg Neth, Simeon Schächtele, Sulav Duwal, Peter M. Todd

A Computational Study of Late Talking in Word-Meaning Acquisition .......................... 705
Aida Nematzadeh, Afsaneh Fazly, Suzanne Stevenson

Asymmetry and Similarity Phenomena in Backwards Masking Experiments Suggest Internal Reconstruction. ............................................. 711
Tsvi Achler, Luis Bettencourt, Garrett Kenyon

Audience Design in the Generation of References to Famous People ................................ 712
Roman Kutlak, Kees van Deemter, Chris Mellish

(Un)conscious Updating? Conscious and Unconscious Reward Cues Can Affect Executive Control ................................. 718
Gaëlle Bustin, Rémi Capa, Axel Cleermans, Michel Hansenne

The role of reliability in causal belief updating ........................................ 719
William Jimenez-Leal, Christian Gaviria, Miguel Uribe

Blame the Skilled ................................................................. 720
Tobias Gerstenberg, Anastasia Ejova, David Lagnado

A Causal Spectrum: A Causal Model based on Multi-faceted Notion of Causality ............ 726
Marzieh Asgari-Targhi

Creativity, expertise and the questions people ask in engineering design .......................... 727
Ellen Campana

Interaction between Body and Environment in Insight Problem Solving .......................... 728
Keiga Abe
Grounding lexical choice in Bayesian inference .................................................. 733
Kyle Albarado, Michael Kalish

Towards Cognitive Models of Communication and Group Intelligence .................. 734
David Reitter, Christian Lebiere

The effect of risk attitude on product choices ..................................................... 740
Ikuya Nomura, Yasushi Onuki, Kazuyuki Samejima, Yuichi Washida, Kazuhiro Ueda,
Hiroyuki Okada, Takashi Omori

Unreliable and Anomalous: How the Credibility of Data Affects Belief Revision .......... 741
Jesse R. Sparks, David N. Rapp

Tracing the Process of Rating Decisions through Cursor Movements ....................... 747
Kenpei Shiina

Associative memory models provide a possible mechanism for both heuristics and biases and
Bayesian inference ................................................................. 753
Andrés Pomi

Meaning, Action, and History: Spatial Language as a Dynamic System .................. 754
Holger Schultheis, Kenny Coventry

Achievement Goals and Learning in a Lecture Course: Moving Towards Mastery Goals Predicts
Deeper Learning ................................................................. 755
Daniel Belenky, Timothy Nokes, Matthew Bernacki

Framing influences aggregate judgments of learning ............................................. 756
Corinne Townsend, Evan Heit

Categorizing Emotion in Spoken Language: An Analysis of Semantic and Prosodic Contributions
to Emotional Communication ......................................................... 762
Janine Fitzpatrick, John Logan

Controlling the Writing Process: How an Adolescent with Specific Learning Disabilities uses
Metacognition to Compose Expository Discourse ............................................. 768
Delayne Connor

Visualizing the persistence of conversations within a student co-blogging community .......... 769
Seth Rogers, Joshua Silverman, Rick Alterman

The moderating effect of problem difficulty on the sleep role on insight problem problem ........ 770
Ut Na Sio, Padraic Monaghan, Tom Ormerod

The use of lexical and duration information in segmenting speech with unclear word boundaries . 771
Colin Widmer, Dahee Kim, Christine Szostak, Mark Pitt

The Category-Order Effect in Supraspan Recall .................................................. 772
Lisa Boucher, Jordan Schoenherr, Robert Thosmon, Guy Lacroix

Dissociation of Thematic, Taxonomic, and Integrative Relations ............................ 773
Lara L. Jones, Zachary Estes, Sabrina Golonka

The Social-Pragmatics of Category Learning ..................................................... 774
John Voiklis, James Corter
Active Cross-situational Learning ......................................................... 775
  George Kachergis, Chen Yu, Richard Shiffrin

Tort Reform: Negligence Explains Attributions of Intentionality for Negative Side Effects ........ 776
  John Voiklis, Jeffrey Nickerson

Looking at the Social Dynamics of Viewpoint ..................................... 777
  Michelle D. Greenwood, Justin L. Matthews, Teenie Matlock, Michael J. Spivey

Controlling Stable and Unstable Dynamic Decision Making Environments .......................... 778
  Magda Osman, Maarten Speekenbrink

Spatial biases in understanding descriptions of static scenes: The role of reading and writing
direction ................................................................. 784
  Antonio Román, Abderrahman El Fathi, Julio Santiago

Retrieval Dynamics of In-the-Moment and Long-Term Statistical Word Learning ................. 789
  Haley A. Vlach, Catherine M. Sandhofer

The effect of time pressure and the spatial integration of the stimulus dimensions on overall
similarity categorization .......................................................... 795
  Fraser Milton, Lotta Viika, Holly Henderson, Andy Wills

Cross-Language Priming in Chinese-English Bilinguals with Different Second Language
Proficiency Levels ..................................................................... 801
  Xiaowei Zhao, Ping Li, Youyi Liu, Xiaoping Fang, Hua Shu

The Effect of Prototyping and Critical Feedback on Fixation in Engineering Design .............. 807
  Trina Kershaw, Katja Hölttä-Otto, Yoon Soo Lee

Are Category Labels Features or Naïve Assumption? ........................................ 813
  Na-Yung Yu, Takashi Yamauchi

Adaptive Magnitude and Valence Biases in a Dynamic Memory Task .............................. 819
  George Kachergis, Gabriel Recchia, Richard Shiffrin

Strategy Changes as a Function of Task Complexity in Causal Structure Learning .............. 825
  Motoyuki Saito, Tsuneo Shimazaki

Ad Hoc Cognition ................................................................. 826
  Daniel Casasanto, Gary Lupyan

Toward a Formal Model of the Shifting Relationship between Concepts and Contexts in
Associative Thought ................................................................ 827
  Tomas Veloz, Liane Gabora

Motion influences children’s attention to object properties during noun learning ............... 828
  Simone Chin, Alan Kersten, Jodi-Ann Thomas

Memory Constraints in Infants’ Statistical Word Learning ........................................... 829
  Haley A. Vlach, Scott P. Johnson

Now You See It, Now You Don’t: how social cues and questions misdirect our attention .... 830
  Robert Teszka, Alan Kingstone, Gustav Kuhn
Fractal Structure in Voluntary Eye Movements ................................................. 831
Charles Coey, Sebastian Wallot, Michael Richardson, Guy van Orden

Don’t Look Now: The relationship between mutual gaze, task performance and staring in Second
Life .............................................................................................................. 832
Sara Dalzel-Job, Jon Oberlander, Tim Smith

Turn-boundary projection: Looking ahead ....................................................... 838
Marisa Tice, Tania Henetz

The Impact of User Reviews on Older and Younger Adults’ Attitude towards Online Medication
Information ................................................................................................. 844
Q. Vera Liao, Wai-Tat Fu

The Effect of Repeated Cue Exposure on Post-Completion Errors .................... 850
Maartje Ament, Anita Lai, Anna Cox

Cognitive Representations and Enacting Actions in Computer Simulated Environments .... 856
Devin Pierce, Shulan Lu, Derek Harter, Pratyush Kotturu, Paweena Kosito

A Natural Behavior Approach to the Recognition of Disoriented Objects ................ 861
Evan F. Risko, Joseph Chisholm, Alan Kingstone

How Long Have I Got? Making Optimal Visit Durations in a Dual-Task Setting .......... 862
George Farmer, Christian Janssen, Duncan Brumby

From Data Streams to Information Flow: Information Exchange in Child-Parent Interaction .... 868
Heeyoul Choi, Chen Yu, Linda B. Smith, Olaf Sporns

Tailoring the Level of Detail in Task Instructions to Cognitive Style .................... 874
Caleb Strait, Patricia deWinstanley, Joy Hanna

A hybrid cognitive architecture based on the relationship between consciousness, memory and
attention ........................................................................................................... 875
Eunsook Kim, Hyunjung Shin

Semantic innovations in lexicon: cognitive pragmatic interface .......................... 876
Vera Zabotkina

The proper treatment of structured representations ............................................. 877
Katherine Livins, Leonidas Doumas

Adults and children fast-map novel connections between words. ........................ 878
Arielle Borovsky, Kim Sweeney, Anne Fernald, Jeff Elman

How Far Can Indirect Evidence Take Us? Anaphoric One Revisited ...................... 879
Lisa Pearl, Benjamin Mis

Statistical Learning of a Morse Code Language is Improved by Bilingualism and Inhibitory Ability ............................. 885
James Bartolotti, Viorica Marian, Scott Schroeder, Anthony Shook

The modulation of word type frequency on hemispheric lateralization of visual word recognition:
Evidence from modeling Chinese character recognition .................................... 891
Janet Hui-wen Hsiao, Kit Cheung
A Liquid-State Model of Variability Effects in Learning Nonadjacent Dependencies .......................... 897
Hartmut Fitz

Learning Object Names in Real Time with Little Data ................................................................. 903
Jon Stevens

Learning a graph-structured generative probabilistic grammar of linguistic experience .............. 909
Oren Kolodny, Arnon Lotem, Shimon Edelman

Children’s Developing Understanding of Spatial Metaphors for Time ........................................ 910
Lauren Stites, Seyda Özçalıskan

The memory load of assembling syntactic phrases in mono clausal sentences .............................. 911
David James Lobina, José Eugenio Garcia-Albea

Text-Based Similarity Measures and Attitude Scale Development .............................................. 912
John Ford

Generics Are a Cognitive Default: Evidence From Sentence Processing ..................................... 913
Meredith Meyer, Susan A. Gelman, Sarah M. Stilwell

Visual attention during spatial language comprehension: Reference alone isn’t enough ............. 919
Michele Burigo, Pia Knoeferle

Language comprehension is sensitive to changes in the reliability of lexical cues ...................... 925
Alex Fine, T. Florian Jaeger

Why readers regress to previous words: A statistical analysis .................................................. 931
Klinton Bicknell, Roger Levy

Mental Simulation of Spatial Perspective during Sentence Comprehension ................................ 937
Sarah Schwarzkopf, Helmut Weldle, Daniel Müller, Lars Konieczny

Spoken Nursery Rhymes Have a Fractal Rhythmic Structure - Evidence from Patterns of Slow
Amplitude Modulation (AM) ............................................................................................................. 943
Victoria Leong, Richard Turner, Michael Stone, Usha Goswami

Generalized Event Knowledge in Logical Metonymy Resolution ............................................. 944
Alessandra Zarcone, Sebastian Pado

Exploring Contextual Influences on Word Meaning via Multiple-Level Similarity Judgments ...... 950
Nicholas Gaylord

Integrating the Horizontal and Vertical Cultural Transmission of Novel Communication Systems 956
Carrie Theisen-White, Simon Kirby, Jon Oberlander

An examination of the effects of interruptions and learner characteristics on self-regulated
learning during web-based instruction ............................................................................................ 962
Jessica Federman, Bradford Bell

Spatial and Temporal Cues in Statistical Cross Situational Learning ........................................... 963
Roy Seo, Damian Fricker, Chen Yu

Simultaneous Online Tracking of Adjacent and Non-adjacent Dependencies in Statistical Learning 964
Loan Vuong, Antje Meyer, Morten Christiansen
Investigating how infants learn to search in the A-not-B task .................................................... 970
Hanna Popick, Melody Dye, Natasha Kirkham, Michael Ramscar

Coincidence Detection: Towards an alternative to Synaptic Plasticity .......................................... 976
Francis Jeanson

Attentional Selection in the Unsupervised Generalized Context Model ........................................ 977
Emmanuel Pothos, Todd Bailey

Adaptive uses of random criterion: The largest number problem, the two-envelope problem, and
the anchoring and adjustment heuristic ................................................................. 978
Bruce Burns

MultiDimensional (MD) Frame: The Basic Elements of Memory Structure ................................. 984
Makoto Toyota, Muneo Kitajima

The Role of Mental Elaborations in Making Counterintuitive Ideas Memorable ....................... 985
Mary Harmon-Vukic, Afzal Upal, Kelly Sheehan

Exploration and Exploitation in Memory Search Across the Lifespan ........................................ 991
Thomas Hills, Rui Mata, Andreas Wilke, Gregory Samanez-Larkin

Context and Causal Structure Enhance Memory for Clinical Details ........................................... 997
Sarah L. Devantier, John Paul Minda, Mark Goldszmidt, Aimee L. Skye, Nicole N. Woods

Modeling Maqam Relations with Self-Organizing Maps .............................................................. 1003
Nart B. Atalay, Seyit Yore

Memory for musical sequences beyond pitch: Grammatical and associative processes .................. 1004
Richard Ashley

Annotation as a (Meta)Cognitive Aid in Western Art Music Performance ..................................... 1005
Linda T. Kaastra

Can Neural Adaptation Explain Word Choice? ........................................................... 1006
Jörn Klinger, Julien Mayor

Relationship between Theory of Mind and Figurative Language Comprehension in Schizophrenia
when controlling for IQ and Executive Functions ........................................................................ 1012
Jose M. Gavilan, Jose E. García-Albea

Metacognitive Judgments, Study-Time Allocation and Inferences: The Effect of Multimedia
Discrepancies ........................................................................................................... 1013
Candice Burkett, Roger Azevedo

Detecting deviations from randomness ...................................................................................... 1019
Jiaying Zhao, Daniel Osherson

Effects of scene variation on referential overspecification ....................................................... 1025
Ruud Koolen, Martijn Goudbeek, Emiel Krahmer

A Computational Model of Auditory Perceptual Learning: Predicting Learning Interference
Across Multiple Tasks ......................................................................................................... 1031
David Little, Bryan Pardo, Beverly Wright

The Role of Hierarchy in Learning to Categorize Images .......................................................... 1037
Reza Shahbazi, David Field, Shimon Edelman
Lorenzo Magnani, Emanuele Bardone, Tommaso Bertolotti

The Virtues and Vices of Biased Rationality: An Eco-Cognitive Account ......................... 1049
Emanuele Bardone, Lorenzo Magnani

Layers of Joint Commitments in Interpersonal Communication ................................. 1055
Antonella Carassa, Marco Colombetti

Effects of unrecognized hints and metacognitive control in insight problem solving .......... 1061
Masasi Hattori, Steven Sloman, Ryo Orita

Differences in Infants’ Perception of Objects’ Internal Energy as a Function of Their Roles in a Causal Event .................................................. 1062
Yevdokiya Yermolayeva, David H. Rakison

Does word confusability explain reversal of word-frequency effects in lexical decisions? .......... 1063
Anne Gilman

Semantic, Aesthetic, and Cognitive Effects of Flashbacks in Film .................................. 1064
Aline Sevenants, Géry d’Ydewalle

Looking at Nothing Diminishes with Practice .......................................................... 1070
Agnes Scholz, Katja Mehlhorn, Franziska Bocklisch, Josef Krems

Intentionality, Foreseeability, and Cognitive Load Differently Affect the Cause and Blame Judgments ................................................................. 1076
Doehee Kim, Kyung Soo Do, Hanna Kim

Explanatory Schemata as Determinants of Performance in a Syllogistic Reasoning Task ........ 1077
Boucher Lisa, Schoenherr Jordan, Thomson Robert, Lacroix Guy

Truth Table Tasks: Directionality and Negation-Type .................................................. 1078
Aline Sevenants, Kristien Dieussaert, Walter Schaecken

A closer look at moral dilemmas: latent structure of morality and the difference between the trolley and footbridge dilemmas .................................................. 1084
Kuninori Nakamura

Computing with rational numbers: Not easy even for college students ......................... 1090
Jennifer Jacobs, Rochel Gelman

Remembering connectives: Visual-auditory consonance influences representations in time ..... 1091
Bradley Morris, Rebecca Neiman

Reconciling Competing Accounts of Picture Perception from Art Theory and Perceptual Psychology via the Dual Route Hypothesis ............................................. 1097
Coppin Peter

A View of Language from Somewhere in Particular ...................................................... 1098
Jarek Sierschynski

Plan and Situated Action Relationship as a Function of Activity Category: An Experimental Approach ................................................................. 1099
Walid Bahamdan, Rob Duimering
Therapeutic Animatron: Interaction Framework for Making People Happy

Insu Song, Denise Dillon

Beliefs are represented as neither maps nor sentences in the head: "Format blind" processing and specialization for theory of mind

Adam Cohen, Tamsin German

THE COGNITIVE EFFECT OF PERSPECTIVE-TAKING ON SOCIAL COORDINATION

Bruno Galantucci, Ariel Malka, Carrie Theisen, Ben Rosenzweig, Kelly Gerin, Mordechai Ambrose

The Reverse-Chameleon Effect: Negative social consequences of anatomical mimicry.

Laura Staum Casasanto, Tom Gijsels, Daniel Casasanto

Spontaneous goal inference without concrete external goals

Adena Schachner, Susan Carey

The Repetition-Break Plot Structure: A Tool for Persuasion

Jeffrey Loewenstein, Rajagopal Raghunathan, Chip Heath

Spatial Cognition Adapts to Social Context

Nicholas Duran, Rick Dale

Experts’ and Novices’ Use of Gesture in Explaining Geologic Maps

Ilyse Resnick, Kinnari Atit, Tilbe Goksun, Thomas F. Shipley

Allocentric Spatial Memory in Major Depressive Disorder

Jonna Nilsson, Kenny Coventry, Nicol Ferrier

How Do Younger and Older Adults Use Cues and Landmarks to Navigate?

Scott Moffat

How Spoken and Signed Language Structure Space Differently

Leonard Talmy

The Number, Type, and Configuration of Landmarks Distort Distance Estimates

Michael E. Roberts, Terri L. Bonebright, Dillen Wischmeier

Cognitive processes underlying the continuity effect in spatial reasoning

Jelica Nejasmic, Antje Krumnack, Leandra Bucher, Markus Knauff

Spatial Cognition and Perception of Large Scale Object Constellations: Evidence from Search Domain Analysis in Urban Environment

Juris Skilteris, Girts Burgmanis, Zaiga Krisjane, Linda Apse

A Fresh Look at Vocabulary Spurts

Frederic Dandurand, Thomas Shultz

Phrase Structure Priming Across Sentences: Facilitation or Reconfiguration?

Alexandra K. Frazer, Padraig G. O’Seaghdha

A cognitive computational model of eye movements investigating visual strategies on textual material

Benoît Lemaire, Anne Guérin-Dugue, Thierry Baccino, Myriam Chanceaux, Léa Pasqualotti
Visualizing Cross Sections: Training Spatial Thinking Using Interactive Animations .......... 1152
   Cheryl Cohen

Finger Based Representation of Numbers: Correlation Between Finger Tapping Ability and
Digit Span ................................................................. 1153
   Firat Soylu, Sharlene Newman

Revising beliefs about imagined relations: the role of logic and content ...................... 1154
   Alexandra Chambers, Russell Revlin

From preferences to choices and back again: evidence for human inconsistency and its
implications ................................................................. 1155
   Christopher Lucas, Charles Kemp, Thomas Griffiths

The importance of alignable differences in teaching linear measurement .................. 1156
   Mee-Kyoung Kwon, Susan Cohen Levine, Kristin Ratliff, Camille Snyder

Asymmetric Intercortical Projections Support The Learning Of Temporal Associations .... 1157
   William Benjamin St. Clair, David C. Noelle

An Inhibited Recognition Performance for Explicitly Presented Target-Aligned Irrelevant Stimuli in the Auditory Modality ................................................................. 1158
   Andrew Dewald, Scott Sinnett

A Multimodal Investigation of Recognition Performance for Target-Aligned but Irrelevant Stimuli ................................................................. 1164
   Andrew Dewald, Scott Sinnett

The Dramatic Effect of Content on Children’s Unless Reasoning: Pragmatic Modulation or Reconstruction? ................................................................. 1170
   Walter Schaeken, Aline Sevenants, Juan Garcia Madruga

Is enriching static-simultaneous visualizations with motion-indicating arrows helpful for learning about locomotion patterns? ................................................................. 1176
   Birgit Imhof, Katharina Scheiter, Jörg Edelmann, Julian von Ulardt, Peter Gerjets

Phones and phonemes are conceptual blends, not cognitive letters .......................... 1182
   Robert Port

Analysis of Structural Relations among Perceptions on Good Instruction, Course Satisfaction, and Academic Achievement ................................................................. 1188
   Yeonhee So

Linguistic Structure Evolves to Match Meaning Structure ...................................... 1194
   Monica Tamariz

The Dispersion of Eye Movements During Visual Imagery is Related to Individual Differences in Spatial Imagery Ability ................................................................. 1200
   Roger Johansson, Jana Holsanova, Kenneth Holmqvist

Rapid extraction of event participants in caused motion events. .............................. 1206
   Frances Wilson, Anna Papafragou, Ann Bunger, John Trueswell

Mathematical Cognition as Embodied Simulation .............................................. 1212
   Firat Soylu

xviii
An fMRI Study of Zoning Out During Strategic Reading Comprehension .......................... 1218
   Jarrod Moss, Christian Schunn, Walter Schneider, Danielle McNamara

Implicit Racial Stereotypes may Temporarily Shift after Reading a Story .......................... 1224
   Maddalena Marini, Sandro Rubichi, Giuseppe Sartori

What are the boundary conditions of differentiation in episodic memory? ...................... 1230
   Adam Osth, Simon Dennis

Text Coherence and Judgments of Essay Quality: Models of Quality and Coherence ............ 1236
   Scott Crossley, Danielle McNamara

Adults and school-aged children accurately evaluate sins of omission in pedagogical contexts .......................... 1242
   Hyowon Gweon, Hannah Pelton, Laura E. Schulz

Past Experience Influences Judgment of Pain: Prediction of Sequential Dependencies .......... 1248
   Benjamin Link, Brittany Kos, Tor Wager, Michael Mozer

Conditional Relational Reasoning ................................................................................. 1254
   Marco Ragni, Tobias Sonntag

Keynote: Barbara Landau

Language and Space: Momentary Interactions ............................................................... 1815
   Barbara Landau

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

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

Spatial cognition: Individual differences

   Bodily Relativity: The body-specificity of language and thought .................................. 1258
      Daniel Casasanto

   Spatial Demonstratives, Perceptual Space, and Linguistic Diversity .............................. 1260
      Kenny Coventry, Colin Hamilton, Debra Griffiths

   Wayfinding and description strategies in an unfamiliar complex building ...................... 1262
      Thora Tenbrink, Evelyn Bergmann, Lars Konieczny

   Effects of Using Mental and Manual Rotation Training on Mental and Manual Rotation Performance ........................................................................................................ 1268
      Deanne M. Adams, Andrew T. Stull, Imme Roewer, Mary Hegarty

   A Bayesian model of navigation in squirrels .................................................................. 1274
      Anna Waisman, Christopher Lucas, Thomas Griffiths, Lucia Jacobs

Decision making models

   A value-relativistic decision theory predicts known biases in human preferences .......... 1280
      Nisheeth Srivastava, Paul Schrater
The evolution of irrational decision-making: insights from non-human primates ................. 1286
Venkat Lakshminarayanan, Laurie Santos

The Wisdom of Crowds with Communication ................................................................. 1292
Brent Miller, Mark Steyvers

A Cue Imputation Bayesian Model of Information Aggregation ......................................... 1298
Jennifer Trueblood, George Kachergis, John Kruschke

A Model-Based Approach to Measuring Expertise in Ranking Tasks ............................... 1304
Michael Lee, Mark Steyvers, Mindy DeYoung, Brent Miller

Social cognition

Searching Our Cognitive Social Networks: How We Remember Who We Know ................. 1310
Thomas Hills, Thorsten Pachur

To catch a liar: The effects of truthful and deceptive testimony on inferential learning ........ 1312
Robert Montague, Daniel J. Navarro, Amy Perfors, Russell Warner, Patrick Shafto

Motivational Influences on Attentional Scope ............................................................... 1318
Ruby Nadler, John Paul Minda

Why Radicals Win the Newsday?: Ratcheting-up of Cultural Counterintuitiveness in Rumors
and NRM Doctrine .......................................................................................................... 1324
M. Afzal Upal

Modeling Underlying Mechanisms of the Implicit Association Test .................................. 1330
Boon-Kiat Quek, Andrew Ortony

Symposium: The potential of quantum probability for modeling cognitive processes

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

Symposium: Space (and time) for culture

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

Learning in the classroom

Learning by Observing Tutorial Dialogue versus Monologue Collaboratively or Alone .......... 1340
Kasia Muldner, Keith Dybvig, Rachel Lam, Micheline Chi

How Reading Goals and Rhetorical Signals Influence Recipients' Recognition of Intertextual
Conflicts .......................................................................................................................... 1346
Marc Stadtler, Lisa Scharrer, Rainer Bromme

Explaining drives the discovery of real and illusory patterns ............................................ 1352
Joseph Jay Williams, Tania Lombrozo, Bob Rehder

How Brief Initial Inspection of a Picture May Foster Comprehension of Text ..................... 1358
Alexander Eitel, Katharina Scheiter, Anne Schüler

xx
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
Gesturing by aphasic speakers, how does it compare?  .................................................... 1454
Lisette Mol, Emiel Krahmer, Mieke Van de Sandt-Koenderman

Symposium: Executive functioning in children and adolescents with disabilities

Executive Functioning in Children and Adolescents with Disabilities .................................... 1460
Amy Sussman, Priti Shah, Lisa Daunhauer, Deborah Fidler, Janine Stichter, Frances Conners

Symposium: Fictional worlds and cognitive science

Fictional Worlds and Cognitive Science ................................................................. 1462
Cristóbal Pagán Cánovas, Richard Gerrig, Thalia Goldstein, Francis Steen, Vera Tobin

Learning and induction in complex tasks

The Role of Cross-cutting Systems of Categories in Category-based Induction .......................... 1464
Neil Smith, Patrick Shafto

A mechanism to increase argument strength with negative evidence .................................... 1470
Daniel Heussen, Wouter Voorspoels, Gert Storms

Preparing Students for Effective Explaining of Worked Examples in the Genetics Cognitive Tutor ................................................................. 1476
Albert Corbett, Ben MacLaren, Angela Wagner, Linda Kauffman, Aaron Mitchell, Ryan Baker, Sujith Gowda

A Computational Model of Complex Skill Learning in Varied-Priority Training ...................... 1482
Wai-Tat Fu, Panying Rong, Hyunkyu Lee, Arthur Kramer, Ann Graybiel

Structure and evolution of languages

Inferring Conceptual Structure from Cross-Language Data .................................................. 1488
Terry Regier, Naveen Khetarpal, Asifa Majid

Core phonology: Evidence from grammatical universals ..................................................... 1489
Iris Berent

Investigating the effects of prestige on the diffusion of linguistic variants ............................... 1491
Monica Tamariz, Tao Gong, Gerhard Jaeger

Semantic structure in improvised communication ............................................................. 1497
Marieke Schouwstra, Anoushka van Leeuwen, Nicky Marien, Marianne Smit, Henriette de Swart

Number processing and representation

Learning Linear Spatial-Numeric Associations Improves Memory for Numbers ...................... 1503
Clarissa Thompson, John Opfer

Linear Numerical Magnitude Representations Aid Memory for Single Numbers ..................... 1509
Christopher Young, Francesca Marciani, John Opfer

Evidence against a strong association between numerical symbols and the quantities they represent ................................................................. 1515
Ian Lyons, Daniel Ansari, Sian Beilock

xxii
Reasoning about spatial and causal properties

A Text Corpus Analysis Approach to the Conjunction Fallacy .................................................. 1527
Yuichiro Wajima, Kuninori Nakamura, Asuka Terai, Kimihiko Yamagishi, Masanori Nakagawa

Is the Centrality of Design History Function an Effect of Causal Knowledge? .................... 1533
Guillermo Puebla-Ramírez, Sergio Chaigneau

Spatial Reasoning within Visible Functional Constraints .......................................................... 1539
Georg Jahn, Miriam Müller-Bardorff, Kenny Coventry

Probabilistic internal physics models guide judgments about object dynamics ...................... 1545
Jessica Hamrick, Peter Battaglia, Josh Tenenbaum

Discourse and social interaction in language comprehension

Memory Representations Supporting Speakers’ Choice of Referring Expression: Effects of Category Overlap and Shared Experience ................................................................. 1551
Kristen S. Gorman, Whitney Gegg-Harrison, Chelsea R. Marsh, Michael K. Tanenhaus

Effects of speaker gaze on spoken language comprehension: task matters ....................... 1557
Helene Kreysa, Pia Knoeferle

The Distribution of Repair in Dialogue ..................................................................................... 1563
Marcus Colman, Patrick Healey

Predictability effects in adult-directed and infant-directed speech: Does the listener matter? .... 1569
John Pate, Sharon Goldwater

Symposium: New approaches to the problem of conceptual change in the learning of science and math

New Approaches to the Problem of Conceptual Change in the Learning of Science and Math … 1575
Stella Vosniadou, Michellene T.H. Chi, Stellan Ohlsson, David D. Cosejo, David E Brown, Nancy J. Nerserssian

Spatial cognition: From vision to language

Visualizing thought: Mapping category and continuum ......................................................... 1577
Barbara Tversky, James Corter, Lixiu Yu, David Mason, Jeffrey Nickerson

Do you have to look where you go? Gaze behaviour during spatial decision making ............ 1583
Jan Wiener, Olivier De Condappa, Christoph Hölscher

Prepositions in and on retain aspects of spatial meaning in abstract contexts ..................... 1589
Anja Jamrozik, Dedre Gentner

Does Space Structure Spatial Language? Linguistic Encoding of Space in Sign Languages .... 1595
Pamela Perniss, Inge Zwitserlood, Asli Özyürek

Language acquisition in children

Word Learning through Sensorimotor Child-Parent Interaction: A Feature Selection Approach . 1601
Chen Yu, Junming Xu, Xiaojin Zhu
Markers of Discourse Structure in Child-Directed Speech ........................................ 1607
Hannah Rohde, Michael Frank

Productivity and Reuse in Language ................................................................. 1613
Timothy O’Donnell, Jesse Snedeker, Joshua Tenenbaum, Noah Goodman

Learning Simple Statistics for Language Comprehension and Production: The CAPPUCCINO Model ................................................................. 1619
Stewart M. McCauley, Morten H. Christiansen

Language comprehension: Anticipating structure and meaning

Effects of Semantic Integration and Advance Planning on Grammatical Encoding in Sentence Production ................................................................. 1625
Maureen Gillespie, Neal J. Pearlmutter

Distal prosody influences lexical interpretation in online sentence processing .................. 1631
Meredith Brown, Anne Pier Salverda, Laura C. Dilley, Michael K. Tanenhaus

Cloze but no cigar: The complex relationship between cloze, corpus, and subjective probabilities in language processing ........................................ 1637
Nathaniel Smith, Roger Levy

Individual differences in visual comprehension of morphological complexity ................ 1643
Victor Kuperman, Julie Van Dyke

Learning concepts and categories

Rethinking the role of error in attentional learning ........................................ 1649
Mark Blair, Calen Walshe, Jordan Barnes, Lihan Chen

Perceptual Fluency Affects Categorization Decisions ........................................ 1655
Sarah J Miles, John Paul Minda

A Tale of Two Processes: Categorization Accuracy and Attentional Learning Dissociate with Imperfect Feedback ........................................ 1661
Caitlyn McColeman, Aaron Ancell, Mark Blair

Discovering Inductive Biases in Categorization through Iterated Learning ................ 1667
Kevin Canini, Thomas Griffiths, Wolf Vanpaemel, Michael Kalish

Neural networks and dynamic systems

Forgetting Curves Emerge from Dynamics of Integrated Memory ........................ 1673
Eva Cadez, Evan Heit

An Artificial Grammar Investigation into the Mental Encoding of Syntactic Structure .......... 1679
Pyeong Whan Cho, Emily Szkudlarek, Anuenue Kukona, Whitney Tabor

Critical Branching Neural Computation, Neural Avalanches, and 1/f Scaling ................. 1685
Christopher Kello, Bryan Kerster, Eric Johnson

Visual Motion Perception using Critical Branching Neural Computation ................. 1691
Janelle K. Szary, Christopher T. Kello
Modeling and testing causal reasoning

Blocking Requires Uncertainty about Novel Cues .................................................. 1697
Pei-Pei Liu, Christian Luhmann

A Causal Model Theory of Judgment ................................................................. 1703
Abigail B. Sussman, Daniel M. Oppenheimer

Estimating human priors on causal strength ...................................................... 1709
Saiwing Yeung, Thomas Griffiths

Rational Order Effects in Responsibility Attributions ........................................ 1715
Tobias Gerstenberg, David Lagnado, Maarten Speekenbrink, Catherine Cheung

Governing Board Symposium

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

Posters

Extended Visual Memory for Computer-Aided Vision ........................................... 1723
Joo-Hwee Lim, Siying Liu

Conflict-Monitoring Framework Predicts Larger Within-Language ISPC Effects: Evidence from Turkish-English Bilinguals ................................................................. 1724
Nart B. Atalay, Mine Misirlisoy

Incremental Learning of Target Locations in Visual Search ............................... 1729
Michal Dziemianko, Moreno I. Coco, Frank Keller

Visual Attention and Change Detection ............................................................... 1735
Ty W. Boyer, Thomas G. Smith, Chen Yu, Bennett I. Bertenthal

Cued Attention and Learning of Spatial Context in Children ............................... 1741
Hanako Yoshida, Kevin Darby, Joseph Burling

The Developmental Role of Attentional Control in Language Learning ............... 1747
Duc Tran, Hanako Yoshida

The Typology of Chinese in Talmy’s Verb-framed vs Satellite Framed Languages .... 1748
Fuyin Li, Suying Li

Towards a cross-linguistic scale for pragmatics of deference and closeness .......... 1749
Gregory Aist, Prakalp Sudhakar

Naming and the Animal Concept in English and Indonesian Speakers ................. 1750
Florence K. Anggoro

The Whole Number Bias in Fraction Magnitude Comparisons with Adults ............. 1751
Melissa DeWolf, Stella Vosniadou

The Absence of Positive Affect is Associated with Complex Rule Use .................. 1757
Ruby Nadler, John Paul Minda

Cost of Attention as an Indicator of Category Learning ...................................... 1763
Hyungwook Yim, Catherine Best, Vladimir Sloutsky

xxv
Breaking the World into Symbols ................................................................. 1769
Adam November, Nicolas Davidenko, Michael Ramscar

A Model of Concept Generalization and Feature Representation in Hierarchies ................... 1775
Timothy Rubin, Matthew Zeigenfuze, Mark Steyvers

Making SNAP Judgments: Rethinking the Spatial Representation of Number .................... 1781
Tyler Marghetis, Esther Walker, Benjamin Bergen, Rafael Núñez

Latent Scope Bias in Categorization ............................................................. 1787
Abigail B. Sussman, Sangeet Khemlani, Daniel Oppenheimer

Scaling up from Micro Cognition to Macro Cognition: Using SGOMS to build Macro Cognitive Models of Sociotechnical Work in ACT-R .................................................. 1788
Robert West, Sterling Somers

Cognitive Modeling of Event-Related Potentials ............................................. 1794
Gordon Griffiths, Robert West, Amedeo D’Angiulli

Memorizing Mathematics: The Failure to Apply Mathematical Axioms Within Restrictive Models ................................................................. 1799
Rony Patel, Jennifer Jacobs, Rochel Gelman

Learning by Drawing: drawing construction interacts with instructional support in fostering higher-order reasoning ......................................................... 1800
Margaret Chan

Mind the Gap: Dispositional Agency Facilitates Toddlers’ Causal Representations ............. 1801
Paul Muentener, Elizabeth Bonawitz, Alexandra Horowitz, Laura Schulz

Children’s Use of Structure Mapping in Numerical Estimation ................................. 1807
Jessica Sullivan, David Barner

Encoding word-order and semantic information using modular neural networks ............. 1813
Alvaro Cabana, Juan Valle-Lisboa, Eduardo Mizraji

The Moving Eye is Easy to Spy: How Motion Improves Gaze Discrimination ............... 1814
Nicola Anderson, Evan Risko, Alan Kingstone

Language and Space: Momentary Interactions ............................................. 1815
Barbara Landau

Cooperation and Human Cognition ................................................................ 2902
Michael Tomasello

Classifying patients and controls using multi-dimensional scaling and exploring the metric of semantic space ....................................................... 1817
Steven Chance, Anthony James, Rebecca Peet, Geoffrey Nicholls

The QWERTY Effect: How stereo-typing shapes the mental lexicon ....................... 1823
Kyle Jasmin, Daniel Casasanto

Pain as Enactive Perception: Applying Noe’s Theory of Perception ....................... 1829
Alice Kyburg
Readiness-to-hand, extended cognition, and multifactality ........................................ 1835
Lin Nie, Dobromir Dotov, Anthony Chemero

How is knowledge transmitted in a small world network through communicative interaction? ... 1841
Hidehito Honda, Toshihiko Matsuka

Learning Causal Direction from Repeated Observations over Time ............................ 1847
Benjamin Rottman, Frank Keil

Analyzing Conservative and Liberal Blogs Related to the Construction of the 'Ground Zero Mosque' .......................................................... 1853
Morteza Dehghani, Jonathan Gratch, Sonya Sachdeva, Kenji Sagae

Creative Choices in Choreography: A New Qualitative Methodology .................... 1859
Dafne Muntanyola Saura

Beyond Outcomes: The Influence of Intentions and Deception ............................... 1860
Simeon Schaechtele, Tobias Gerstenberg, David Lagnado

Modeling Response Times in the Go/No-Go Discrimination Task .......................... 1866
Jennifer Trueblood, Michael Endres, Jerome Busemeyer, Peter Finn

Probabilistic inferences under emotional stress .................................................... 1872
Szymon Wichary, Jörg Rieskamp

Causal Explanations Guide Inferences about Children’s Bizarre Behaviors .............. 1878
Jennelle Yopchick, Nancy Kim

Funding Opportunities for Cognitive Scientists through the Institute of Education Sciences .... 1879
Amy Sussman

Visualizing Feedback: Using Graphical Cues to Promote Self-Regulated Learning ........ 1880
Lisa Ferrara, Kirsten Butcher

Comparing A Brain-Based Account of Mind with Dual-Processing Theories ............ 1886
Ron Tzur

The spatially cued Go/NoGo in children. Brain activity analysis of the major inhibitory components. ........................................ 1887
Laura Vuillier, Denes Szucs, David Whitebread

Matching Skin Conductance Data to a Cognitive Model of Reappraisal ..................... 1888
Tibor Bosse, Jessica Brennankmeyer, Raffael Kalisch, Christian Paret, Matthijs Pontier

You Can’t Play the Iowa Gambling Task with Mother Nature and Win .................. 1894
Courtney Humeny, Robert West

Emotional lexicon organization in memory ......................................................... 1895
Nicolas Leveau, Sandra Jhean-Larose, Guy Denhière

Using phonotactics information in spoken word recognition processes: Evidence from Chinese .. 1896
Michael C. W. Yip

Perceptual Comparisons with Pictures and Environmental Sounds .......................... 1897
Paula Goolkasian, Alexandra Stubblefield

xxvii
Cutting classes without scissors: conceptual primitives as a cognitive mechanism for idiom processing ................................................................. 1898
    Juliana Gorian, Catherine Caldwell-Harris, Alia Biller

The effects of regularity in spatial inferences with and without landmarks on spatial learning ... 1899
    Kayoko Ohtsu, Yoshihiro Ouchi

Quality of alternatives is related to abstract reasoning ........................................ 1900
    Marie-Laurence Brunet, Hugues Lortie Forgues, Henry Markovits

Resource depletion contributes to, but does not cause, the attentional blink ...................... 1901
    Hannah Pincham, Denes Szucs

Word Up! Directed motor action improves word learning. .............................................. 1902
    Daniel Casasanto, Angela de Bruin

Hierarchical Control in Hand-Foot Coordination ......................................................... 1903
    Robert Kohl, Raymond McCoy, Kimberly Mount

Prompting Effective Collaboration Using Deep Questions ............................................. 1904
    Robert Zheng, Kirsten Butcher, Udita Gupta, Paul Callister

Storing objects in visual short-term memory: Location is key ..................................... 1905
    Shiriradh Sengupta, Paul Michel Bernard Verhaeghen, Patricia Mary Hearons

What makes intensional estimates of probabilities inconsistent? .................................. 1906
    Sangeet Khemlani, Max Lotstein, Phil Johnson-Laird

Going with the group in a competitive game of iterated reasoning ................................ 1912
    Seth Frey, Robert L Goldstone

Explicit Bayesian Reasoning with Frequencies, Probabilities, and Surprisals .................. 1918
    Heather Prime, Thomas Shultz

How do 100 people walk a tightrope together? An experiment in large scale joint action .... 1924
    Daniel Richardson, Rick Dale, John Rogers, James Ireland

The Interplay of Multiple Mechanisms in Word Learning ............................................ 1930
    Judith Koehne, Matthew W. Crocker

Straightening Up: Number line Estimates Shift from Log to Linear with Additional Information 1936
    Percival Matthews, Dana Chesney

Alleviating Anxiety about Spatial Ability in Elementary School Teachers ..................... 1942
    Raedy Ping, Claire Bradley, Elizabeth Gunderson, Gerardo Ramirez, Sian Beilock, Susan
    Levine

Does anchoring cause overconfidence only in experts? .............................................. 1947
    Belinda Bruza, Matthew Welsh, Daniel Navarro, Steve Begg

The influence of attentional capacity and social categorization on own race effect .......... 1953
    Pu Xiaoping, Zhou Guomei, ZHANG Lanya, TSE Chi-Shing

Multiple Causal Explanations: When Do We Discount and When Do We Integrate? .......... 1954
    Edward Munnich, Melissa Latham, Jennifer Milazzo, Jennifer Zisa, Saera Khan
Counting is a Piece of Cake: Yet Another Counting Task .......................... 1955
Aaron Crug, Rochel Gelman

Understanding of mental states for human and non-human agents in young children .......... 1956
Hajimu Hayashi

Young Toddlers' Understanding of Graded Preferences ................................. 1957
Jane Hu, Christopher Lucas, Thomas Griffiths, Fei Xu

Designing Interfaces that Stimulate Ideational Fluency in Science ..................... 1958
Sharon Oviatt, Adrienne Cohen, Ariana Mann

Trudy Buwalda, Jelmer Borst, Niels Taatgen, Hedderik van Rijn

Gestures are Produced During Spatial Tasks ............................................. 1965
Autumn Hostetter, Erin Sullivan

Modeling Decision Making on the Use of Automation .................................. 1971
Junya Morita, Kazuhisa Miwa, Akihiro Maehigashi, Hitoshi Terai, Kazuaki Kojima, Frank Ritter

Akihiro Maehigashi, Kazuhisa Miwa, Hitoshi Terai, Kazuaki Kojima, Junya Morita

Robot gaze does not reflexively cue human attention ..................................... 1983
Henny Admoni, Caroline Bank, Joshua Tan, Mariya Toneva, Brian Scassellati

Developing Natural Full-body Motion Synthesis in Virtual Humans ..................... 1989
Yazhou Huang, Justin L. Matthews, Marcelo Kallmann, Teenie Matlock

Perception of intentions and mental states in autonomous virtual agents ................ 1990
Peter C. Pantelis, Steven A. Cholewiak, Paul Ringstad, Kevin Sanik, Ari Weinstein, Chia-Chien Wu, Jacob Feldman

Moving Toward the Right Statement: Effects of Grounded Embodied Cognition on Computational Thinking ................................................................. 1996
Cameron L. Fadjo, John B. Black

Satyugjit Virk, John Black

Comparing the efficacy of bigrams and frames in cuing lexical categories for human learners ... 1998
Toben Mintz

Differential Weighting of Perceptual and Linguistic Factors Predicts English Noun Age-of-Acquisition ................................................................. 1999
Christopher H. Ramey, Evangelia G. Chrysikou, Jamie Reilly

Overextensions that extend into adolescence: Insights from a threshold model of categorization . 2000
Steven Verheyen, Eef Ameel, Gert Storms

Unsupervised Extraction of Recurring Words from Infant-Directed Speech .................. 2006
Fergus McInnes, Sharon Goldwater

xxix
An online model of the acquisition of phonotactics within Optimality Theory ................. 2012
Magri Giorgio

Mowgli in the jungle of words: Comprehension and later lexical development. ................. 2018
Eef Ameel, Barbara Malt, Gert Storms

Generalizing between form and meaning using learned verb classes ......................... 2024
Christopher Parisien, Suzanne Stevenson

Social Capital and Language Acquisition during Study Abroad ..................................... 2030
Matthew Smith, Christophe Giraud-Carrier, Dan Dewey, Spencer Ring, Derek Gore

Using a Speaker’s Eye-Gaze in Conversation: Benefits and Costs ............................... 2036
Joy Hanna, Susan Brennan

A one-stage distributed processing account of linguistic negation .............................. 2037
Stephanie Huette, Sarah Anderson, Teenie Matlock, Michael Spivey

Processing Emergent Features in Metaphor Comprehension ..................................... 2043
Asuka Terai, Robert Goldstone

Identifying Metaphor Hierarchies in a Corpus Analysis of Finance Articles ................. 2049
Aaron Gerow, Mark Keane

Implicit Context-Specific Learning Leads to Rapid Shifts in Syntactic Expectations .......... 2055
Thomas Farmer, Alex Fine, Florian Jaeger

The Role of Working Memory in Implicit and Explicit Language Learning ..................... 2061
Kaitlyn M Tagarelli, Mailce Borges Mota, Patrick Rebuschat

Improving the Acquisition and Retention of Science Material by Fifth Grade Students Through the Use of Imagery Interventions .................................................. 2067
Marisa Cohen

Structural Alignment in Learning Bridge Construction ................................................... 2068
Lauren Applebaum, Elizabet Spaepen, Dedre Gentner, Susan C. Levine, Susan Goldin-Meadow

Children’s Encoding and Solving of Mathematical Equations ...................................... 2069
Noelle M. Crooks, Martha W. Alibali

Student’s Adaptive Choice of Instruction Format .......................................................... 2070
Jooyoung Jang, Christian Schunn

Modeling information sampling over the course of learning ...................................... 2076
Doug Markant, Todd Gureckis

The Sensory-Dependent Nature of Audio-Visual Interactions for Semantic Knowledge ........ 2077
Guillaume Vallet, Benoit Riou, Rémy Versace, Martine Simard

Perceptual learning and face recognition: Disruption of second order relational information reduces the face inversion effect. ................................................................. 2083
Ciro Civile, R.P. McLaren, IPL McLaren

Dynamics of Neuropsychological Testing ..................................................................... 2089
Michael Coen, Timothy Chang, Bruce Hermann, Asenath La Rue, Mark Sager
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship Between Episodic Memory Formation and Two Minds</td>
<td>2095</td>
</tr>
<tr>
<td>Muneeo Kitajima, Makoto Toyota, Kohzoh Yoshino, Sayaka Matsumoto,</td>
<td></td>
</tr>
<tr>
<td>Hirotugu Tahira, Ryohei Miyaji</td>
<td></td>
</tr>
<tr>
<td>A Model of Working Memory in Schizophrenia</td>
<td>2096</td>
</tr>
<tr>
<td>Brandon Abbs</td>
<td></td>
</tr>
<tr>
<td>Learning and generalizing sameness in simple recurrent networks</td>
<td>2097</td>
</tr>
<tr>
<td>Juan Valle-Lisboa</td>
<td></td>
</tr>
<tr>
<td>Bridging the gap between brain and behavior: A dynamic neural field</td>
<td>2098</td>
</tr>
<tr>
<td>model of executive function captures behavioral and neural development</td>
<td></td>
</tr>
<tr>
<td>John Spencer, Aaron Buss</td>
<td></td>
</tr>
<tr>
<td>Strategy Shifting in a Procedural-Motor Drawing Task</td>
<td>2099</td>
</tr>
<tr>
<td>Brent Morgan, Sidney D’Mello, Jenna Fielding, Karl Fike, Andrea</td>
<td></td>
</tr>
<tr>
<td>Tamplin, Gabe Radvansky, James Arnett, Robert Abbott, Arthur Graesser</td>
<td></td>
</tr>
<tr>
<td>Cognitive training promotes academic success: An analysis of focused</td>
<td>2105</td>
</tr>
<tr>
<td>meditative practices on student quiz performance</td>
<td></td>
</tr>
<tr>
<td>Jared Ramsburg, Robert Youmans</td>
<td></td>
</tr>
<tr>
<td>An own-age bias in age estimation of faces.</td>
<td>2111</td>
</tr>
<tr>
<td>Evelyne Moyse, Serge Brédart</td>
<td></td>
</tr>
<tr>
<td>Visual Clustering on a Computer Display: A Validation Study</td>
<td>2112</td>
</tr>
<tr>
<td>Bella Veksler</td>
<td></td>
</tr>
<tr>
<td>Strategies for tone identification in observers with absolute pitch</td>
<td>2113</td>
</tr>
<tr>
<td>Malik Refaat, Koen Lamberts</td>
<td></td>
</tr>
<tr>
<td>Canonical views of scenes depend on the shape of the space</td>
<td>2114</td>
</tr>
<tr>
<td>Krista A. Ehinger, Aude Oliva</td>
<td></td>
</tr>
<tr>
<td>Measurements and Estimations of Subjective Hand Force Exertions</td>
<td>2120</td>
</tr>
<tr>
<td>Kai-Way Li</td>
<td></td>
</tr>
<tr>
<td>Hypothetical Cognition and Coalition Enforcement. Language, Morality,</td>
<td>2121</td>
</tr>
<tr>
<td>and Violence</td>
<td></td>
</tr>
<tr>
<td>Lorenzo Magnani</td>
<td></td>
</tr>
<tr>
<td>A Theory of How Heuristics Work in Cognition</td>
<td>2127</td>
</tr>
<tr>
<td>Sheldon Chow</td>
<td></td>
</tr>
<tr>
<td>Philosophers, three year olds &amp; autistics</td>
<td>2128</td>
</tr>
<tr>
<td>Peter Slezak</td>
<td></td>
</tr>
<tr>
<td>Ad-hoc scalar implicature in adults and children</td>
<td>2134</td>
</tr>
<tr>
<td>Alex Stiller, Noah Goodman, Michael Frank</td>
<td></td>
</tr>
<tr>
<td>Inferential Processes Based on Goals in Explicit Communication a</td>
<td>2140</td>
</tr>
<tr>
<td>Theoretical Approach</td>
<td></td>
</tr>
<tr>
<td>Marco Cruciani</td>
<td></td>
</tr>
<tr>
<td>Exploiting the Soft Constraints Hypothesis to Mitigate Interruption</td>
<td>2141</td>
</tr>
<tr>
<td>Effects</td>
<td></td>
</tr>
<tr>
<td>John Patrick, Phillip Morgan, Victoria Smy</td>
<td></td>
</tr>
<tr>
<td>Conflict Resolution in Remote Collaborative Problem Solving: A</td>
<td>2142</td>
</tr>
<tr>
<td>Comparison of Different Computer Mediated Communication Methods</td>
<td></td>
</tr>
<tr>
<td>Wei Dong, Wai-Tat Fu</td>
<td></td>
</tr>
</tbody>
</table>
Forecasting the evolution of a system: the role of cognitive strategies in complexity discovery ... 2148
   Jean-François Gagnon, Sébastien Tremblay

Cross-dimensional Mappings in Sound Symbolic Foreign Words .......................... 2149
   Christina Y. Tzeng, Lynne C. Nygaard, Laura L. Namy

Asymmetry in Stroop interference arising from naming practice: shape beats color .... 2150
   Athanassios Protopapas, Artemis Markatou

The topic comprehension process in simile sentences ........................................ 2156
   Tomohiro Taira, Takashi Kusumi

The Effect of Response Set Size on the Stroop Interference ................................ 2162
   Adam Chuderski, Tomasz Smolen

Cognitive Control in the Generation of Random Sequences: A Computational Study of
   Secondary Task Effects ................................................................. 2168
   Richard P. Cooper

Whose Mind Matters More: The moral agent or the artist? The role of intent in ethics and
   aesthetics ................................................................. 2174
   Angelina Hawley-Dolan, Liane Young

Diagramming the Maya "Classic Motif": The Nonpropositional Pictorial Reasoning of Eternal
   Victory at Tikal ................................................................. 2180
   Sean Eirik Simpson

Effects of Controllability and Severity on Risk Perception are not Additive ................ 2181
   Kyung Soo Do, Yoon Jin Cho

Interpreting logic diagrams: a comparison of two formulations of diagrammatic representations 2182
   Yuri Sato, Koji Mineshima, Ryo Takemura

Adolescent Reasoning in Mathematics: Exploring Middle School Students’ Strategic Approaches
   in Empirical Justifications ............................................................. 2188
   Jennifer Cooper, Candace Walkington, Caroline Williams, Olubukola Akinsiku, Charles
   Kalish, Amy Ellis, Eric Knuth

The inhumane accusative: an empirical investigation ............................................ 2194
   Luencya Santiago dos Santos, Dietmar Zaefiferer

Directional Bias Induced Error Patterns when Translating Structural Representations .... 2195
   Andrew Stull, Trevor Barrett, Mary Hegarty

Experimental investigation of effects of representations and contexts on comprehension and
   generation of line graphs ............................................................. 2196
   Nana Kanzaki, Kazuhisa Miwa

The Impact of Autism Spectrum Disorder on the Categorisation of External Representations ... 2202
   Beate Grawemeyer, Hilary Johnson, Mark Brosnan, Emma Ashwin, Laura Benton

The Effects of LEGO Robotics and Embodiment in Elementary Science Learning ............ 2208
   Carol M. Lu, John B. Black, Seokmin Kang, Shih-Chieh Huang

The Construction Meaning of Interrogatives: Evidence From Embodied Grammar ............ 2209
   Dietmar Zaefiferer, Luencya Santiago dos Santos
Lexical Priming without Similarity or Association ............................... 2210
Zachary Estes, Lara L. Jones, Emily Mather

A Tale of Two Semantic Systems: Taxonomic and Thematic Knowledge ......................... 2211
Daniel Mirman, Grant M. Walker, Kristen M. Graziano

Why Neurons Cannot be Detectors: Shifting Paradigms from Sherlock Holmes to Elvis Presley? 2217
Nancy Salay

Inducing homonymy effects via stimulus quality and (not) nonword difficulty: Implications for models of semantic ambiguity and word recognition .............................................. 2223
Blair Armstrong, David Plaut

The Semantic Pictionary Project .......................................................... 2229
Brent Kievit-Kylar, Michael Jones

Modeling Utterance-mediated Attention in Situated Language Comprehension .................. 2235
Jan Svantner, Igor Farkas, Matthew Crocker

Becoming a Gamer: Cognitive Effects of Real-Time Strategy Gaming ............................. 2241
Brian D. Glass, Marc T. Tomlinson, W. Todd Maddox, Bradley C. Love

The effect of prompted causal identification in transfer of experimental design skills .......... 2242
Stephanie Siler, David Klahr, Kevin Willows, Cressida Magaro

Making oneself predictable: Reduced temporal variability facilitates joint action coordination ... 2243
Cordula Vesper, Robrecht van der Wel, Günther Knoblich, Natalie Sebanz

Norms as Direct Explanations of Behavior .............................................. 2244
Kevin Uttich, Tania Lombrozo

When Two Become One: Temporally Dynamic Integration of the Face and Voice ................ 2245
Jeffrey Brooks, Jonathan Freeman, Nalani Ambady

Decision factors that support preference learning .......................................... 2246
Alan Jern, Charles Kemp

Simulating a route with your index finger: Effect of mental rehearsal on spatial memory ..... 2252
Wing Chee So

Employers and Employees: How Narrative Perspective Influences Agent Placement in a Simulated Work Environment ................................................................. 2258
Justin L. Matthews, Teenie Matlock

Can comparison facilitate preschoolers’ understanding of maps? .................................. 2259
Lei Yuan, Megan Sauter, David Uttal

Training Spatial Skills: What works, for Whom, and for How Long? .............................. 2260
Nathaniel Meadow, David Uttal, Elizabeth Tipton, Nora Newcombe

Language and spatial frames of reference: The effect of verbal interference ................... 2261
Sophie Bridgers, Terry Regier

Spatial Representation of Environmental and Geographical Space in Different Perspectives .. 2262
Julia Frankenstein, Christoph Hölscher
Path Choice in Different Wayfinding Tasks ................................. 2263
Simon Buechner, Christoph Hoelscher

Everyday navigation in real and virtual environments informed by semantic knowledge .... 2264
Christopher Kalff, Gerhard Strube

Efficiency and Minimal Change in Spatial Belief Revision ........................ 2270
Antje Krumnack, Leandra Bucher, Jelica Nejasmic, Markus Knauff

Horizontal Trumps Vertical in the Spatial Organization of Numerical Magnitude ........ 2276
Kevin J. Holmes, Stella F. Lourenco

Automated Extraction of Weighted Semantic Maps From Texts to Study Cultural Differences ... 2282
M. Afzal Upal

Using a Cognitive Model to Provide Instruction for a Dynamic Task .................... 2283
JUNGAA MOON, DAN BOTHELL, JOHN ANDERSON

A Computational Account of Everyday Abductive Inference ............................. 2289
Will Bridewell, Pat Langley

Effects of Semantic Integration on Phrase and Word Ordering Errors in Production ....... 2295
Amy DiBattista, Neal J. Pearlmutter

Affordances of Simulation-based Science Assessments ..................................... 2301
Jodi Davenport, Edys Quellmalz, Michael Timms

Temporal Dynamics of Scan Patterns in Comprehension and Production ................. 2302
Moreno I. Coco, Frank Keller

Representation and acquisition of symmetrical verbs ...................................... 2308
Ozge Gurcanli, Barbara Landau

Normative cognition: a uniquely human cognitive capacity ............................. 2309
Jeppe Sinding Jensen

Generating 3D Spatial Descriptions from Stereo Vision Using SIFT Keypoint Clouds ........ 2310
Anderson, James M. Keller

Individual and Collaborative Learning from Text and Pictures: A Task Analysis .......... 2311
Krista DeLeeuw, Katharina Scheiter, Friedrich Hesse

Do information-theoretic measures of word-processing difficulty explain psycholinguistic
phenomena? ........................................................................................................ 2312
Stefan Frank

Shared pattern of face preferences in human infants and pet dogs .......................... 2313
Jennifer M.D. Yoon, Friederike Range, Ludwig Huber, Gergely Csibra, Zsofia Viranyi

Learning categories from an intermittent teacher ............................................. 2314
John V McDonnell, Todd M Gureckis

Universals and variation in spatial language and cognition: Evidence from Chichewa .... 2315
Alexandra Carstensen, Naveen Khetarpal, Asifa Majid, Terry Regier
Cross Cultural Comparative Effects of an Early Science and Measurement Learning Study on 4th grade children’s achievement ................................................................. 2316
Nancy L. Stein, Yuhtsuen Tzeng, Marc W. Hernandez

Factors Related to Passage Length: Implications for Second Language Listening Comprehension 2317
Amber Bloomfield, Sarah Wayland, Allison Blodgett, Jared Linck

The Ellsberg ‘Problem’ and Implicit Assumptions under Ambiguity .............................. 2323
Sule Guney, Ben R. Newell

Can Sleep Enhance both Implicit and Explicit Processes? ............................................. 2329
Andrea Smyth, Shuichiro Taya, Chris Hope, Magda Osman

Prospective Memory Tasks in Aviation: Effects of Age and Working Memory ................. 2335
Kathleen Van Benthem, Chris M. Herdman, Jo-Anne LeFevre

Using DSHM to Model Paper, Rock, Scissors ............................................................. 2341
Matthew Rutledge-Taylor, Robert West

Two ways of grounding the discussion on extended cognition ...................................... 2347
Nils Dahlbäck, Fredrik Stjernberg, Mattias Kristiansson, Kenny Skagerlund

A Structural Complexity Measure for Predicting Human Planning Performance ............ 2353
Marco Ragni, Felix Steffenhagen, Thomas Fangmeier

Item noise in the Sternberg paradigm ......................................................................... 2359
Allison Chapman, Simon Dennis

Investigating Convention Shifts and Team Reasoning in Multi-Agent Simulations .......... 2365
Anna Coenen, Ramsey Raafat, Nick Chater

Modeling Social Information in Conflict Situations through Instance-Based Learning Theory ... 2371
Varun Dutt, Jolie Martin, Cleotilde Gonzalez

Cued multimodal learning in infancy: a neuro-computational model .............................. 2377
Thomas Hannagan, Rachel Wu

Promoting Development of Geometry Concepts: Interfacing Multiple Embodied Representations with a Computer Game ....................................................... 2383
Jonathan Vitale, John Black, Michael Swart

Influence of Implicit Beliefs and Visual Working Memory on Label Use .................... 2389
Amanda Hahn, Takashi Yamauchi, Na-Yung Yu

Does Attention Confer Importance? Examining Evidence from the Multiattribute Choice Domain ........................................................................................................... 2395
Anirudh Tiwathia, William Goldstein

Acquiring English dative verbs: proficiency effects in German L2 learners .................... 2401
Christoph Wolk, Sascha Wolfer, Peter Baumann, Barbara Hemforth, Lars Konieczny

The Meta-structure of Knowledge and the Explanatory Gap ....................................... 2407
José M. Matías

The Influence of Additivity Training on Cue Competition Effects in Children’s Causal Learning 2408
Victoria Simms, Teresa McCormack, Tom Beckers
Your Tone Says It All: Affective Language Production, Perception and Action .......... 2409
   Jennifer Roche, Rick Dale, Amy Roche

Crowdsourcing Creativity: Generating and Combining Ideas using Crowds .......... 2410
   Jin Bao, Yasuaki Sakamoto

Evidence for Alignment in a Computer-Mediated Text-Only Environment .......... 2411
   Monica Riordan, Rick Dale, Roger Kreuz, Andrew Olney

Keynote: Leonard Talmy

How Spoken and Signed Language Structure Space Differently .......................... 2417
   Leonard Talmy

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

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

Neuroimaging

   Quantifying the diversity of neural activations in individual brain regions .......... 2421
   Michael Anderson, Luiz Pessoa

   Simulating Event-Related Potential Reading Data in a Neurally Plausible Parallel Distributed Processing Model ................................................................. 2427
   Sarah Laszlo, David Plaut

   Strategic Resources Support the Interpretation of Doubly-Quantified Sentences .......... 2433
   Corey McMillan, Neville Ryant, Danielle Coleman, Robin Clark, Murray Grossman

   Finding neural correlates of drift diffusion processes in EEG oscillations ............ 2439
   Marieke van Vugt, Patrick Simen, Jonathan Cohen

   The Relation between Finger Gnosis and Mathematical Ability: Can we Attribute Function to Cortical Structure with Cross-Domain Modeling? .................. 2445
   Marcie Penner-Wilger, Michael L. Anderson

Bayesian modeling

   A Nonparametric Bayesian Model of Visual Short-Term Memory ....................... 2451
   Emin Orhan, Robert Jacobs

   Gaze Following as Goal Inference: A Bayesian Model ..................................... 2457
   Abram L. Friesen, Rajesh P. N. Rao

   A Simple Sequential Algorithm for Approximating Bayesian Inference ............ 2463
   Elizabeth Bonawitz, Stephanie Denison, Annie Chen, Alison Gopnik, Thomas Griffiths

   Bayesian Theory of Mind: Modeling Joint Belief-Desire Attribution ................ 2469
   Chris Baker, Rebecca Saxe, Joshua Tenenbaum

   The Rational Hypocrite: Informal Argumentation and Moral Hypocrisy ............. 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

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 Hendrick

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
Early Talkers and Late Talkers Know Nouns that License Different Word Learning Biases 2550
Eliana Colunga, Clare Sims

When More Evidence Makes Word Learning Less Suspicious 2556
Gavin Jenkins, Jodi Smith, John Spencer, Larissa Samuelson

Concepts and categories: Machine learning and artificial intelligence

Estimating scene typicality from human ratings and image features 2562
Krista A. Ehinger, Jianxiong Xiao, Antonio Torralba, Aude Oliva

One shot learning of simple visual concepts 2568
Brenden Lake, Ruslan Salakhutdinov, Jason Gross, Joshua Tenenbaum

Modeling Category Identification Using Sparse Instance Representation 2574
Shuman Zhang, Michael Lee, Meng Yu, Jack Xin

Towards a Law of Human Conceptual Behavior 2580
Ronaldo Vigo

Modeling attention

A Preliminary Report on the Effects of Mild Traumatic Brain Injury on Spatial Attention 2586
Scott Sinnett, Ahnate Lim, Jeremy Thacker

Computational exploration of the relationship between holistic processing and right hemisphere lateralization in featural and configural recognition tasks 2592
Janet Hui-wen Hsiao, Kloser Chee Fung Cheung

Fortunate Conjunctions Revived: Feature Binding with the 2f-ST2 Model 2598
Srivas Chennu, Howard Bowman, Brad Wyble

Coexistence of Multiple Modal Dominances 2604
Marvin Chandra, Christopher Robinson, Scott Sinnett

Embodiment

Motivation and Motor Control: Hemispheric Specialization for Motivation Reverses with Handedness 2610
Geoffrey Brookshire, Daniel Casasanto

Searching for cultural influences on the body-specific association of preferred hand and emotional valence 2616
de la Fuente Juanma, Casasanto Daniel, Román Antonio, Santiago Julio

Chomsky and embodied cognition: A sensorimotor interpretation of Minimalist logical form 2621
Alistair Knott

Attribute preference and priming in reference production: Experimental evidence and computational modeling 2627
Albert Gatt, Martijn Goudbeek, Emiel Krahmer

Symposium: Computational, neuroscientific, and lifespan perspectives on the exploration-exploitation dilemma

Computational, Neuroscientific, and Lifespan Perspectives on the Exploration-Exploitation Dilemma 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
Identifying causal pathways with and without diagrams ............................................. 2715
James Corter, David Mason, Barbara Tversky, Jeffrey Nickerson

Unlocking potential: Individual differences in the use of concurrent scientific visualizations ...... 2721
Scott Hinze, David Rapp, Vickie Williamson, Mary Shultz, Ken Williamson, Ghislain Deslongchamps

Interactive rhythmic auditory stimulation system reinstates natural 1/f timing in gait of Parkinson’s patients .......................................................... 2727
Michael J. Hove, Kazuki Suzuki, Hirotaka Uchitomi, Satoshi Orimo, Yoshihiro Miyake

Visual attention

The Attraction of Visual Attention to Texts in Real-World Scenes .................................. 2733
Hsueh-Cheng Wang, Marc Pomplun

Language Mediated Visual Search: The Role of Display Preview ..................................... 2739
John Jones, Michael Kaschak, Walter Boot

Speaker gaze affects utterance comprehension beyond visual attention shifts .................... 2745
Maria Staudte, Matthew Crocker, Alexis Heloir, Michael Kipp

The Effect of Labels on Categorization: Is Attention to Relevant Features a Good Index of Infants’ Category Learning? ................................................................. 2751
Catherine A. Best, Christopher W. Robinson, Vladimir M. Sloutsky

Symposium: Explanation-based mechanisms for learning: An interdisciplinary approach

Explanation-based Mechanisms for Learning: An Interdisciplinary Approach ..................... 2756
Michelene Chi, Gerald DeJong, Cristine Legare, Tania Lombrozo, Joseph Jay Williams

Spatial navigation

Let’s Go for a Run: Planning Routes to Remember ......................................................... 2758
Holly A. Taylor, Thora Tenbrink, Molly E. Sorrows

When do we integrate spatial information acquired by walking through environmental spaces? . 2764
Agnes Henson, Hanspeter Mallot, Heinrich Bülthoff, Tobias Meilinger

Navigation strategy as a predictor of navigation performance ........................................... 2770
M. Kirk Rodgers, Joseph A. Sindone, III, Scott D. Moffat

Sex Differences in Brain Activation During Virtual Navigation: A Functional MRI Study ...... 2776
Nicole Nowak, Susan Resnick, Wendy Elkins, Scott Moffat

Learning to make decisions

Explanation Effects Override Formal Category Definitions In Clinical Experts’ Diagnostic Judgments ................................................................. 2782
Nancy Kim, Thao Nguyen, Daniel Paulus

Effects of information comprehensibility and argument type on lay recipients’ readiness to defer to experts when deciding about scientific knowledge claims .......................................... 2788
Rainer Bromme, Lisa Scharrer, M. Anne Britt, Marc Stadtler

The Relevance of a Probabilistic Mindset in Risky Choice ............................................. 2794
Adrian R Camilleri, Ben R Newell
Learning near-optimal search in a minimal explore/exploit task ........................................ 2800
Ke Sang, Peter Todd, Robert Goldstone

Education in formal settings

Allocation of Attention in Classroom Environments: Consequences for Learning .................. 2806
Karrie Godwin, Anna Fisher

Classroom-based Experiments in Productive Failure ......................................................... 2812
Manu Kapur, Katerine Bielaczyc

Distinguishing Levels of Grounding that Underlie Transfer of Learning ............................... 2818
Lisa Byrge, Robert Goldstone

Outcomes and Mechanisms of Transfer in Invention Activities ......................................... 2824
Ido Roll, Vincent Aleven, Ken Koedinger

Mathematical modeling

Visual Search as a Combination of Automatic and Attentive Processes ............................... 2830
Chris Donkin, Rich Shiffrin

A Network Analysis Approach to Understand Human-wayfinding Problem ........................ 2836
Sudarshan Iyengar, Nina Zweig, Abhiram Natarajan, Veni Madhavan

Explaining Categorization Response Times with Varying Abstraction ................................ 2842
Loes Stukken, Gert Storms, Wolf Vanpaemel

A Quantum Probability Explanation for Violations of Symmetry in Similarity Judgments ...... 2848
Emmanuel Pothos, Jerome Busemeyer

Timing and decision making

Don't Stop 'Til You Get Enough: Adaptive Information Sampling in a Visuomotor Estimation Task ................................................................. 2854
Mordechai Juni, Todd Gureckis, Laurence Maloney

Time-interval statistics adaptively modulate decision makers’ willingness to wait for delayed outcomes .............................................................................. 2860
Joseph McGuire, Joseph Kable

Now I like it, now I don’t: Delay effects and retrospective judgment .................................. 2866
Silvio Aldrovandi, Marie Poirier, Petko Kusev, Daniel Heussen, Peter Ayton

Temporal Shifts in Perceived Similarity Affect Consumer Valuation and Choice ................ 2872
Oleg Urminsky, Daniel Bartels

Making sense of vision

The Nature of Mental Images - An Integrative Computational Theory ............................... 2878
Jan Frederik Sima

Simulating Realism in Language Comprehension .............................................................. 2884
Kevin J. Holmes, Phillip Wolff

Partial Representations of Scenes in Change Blindness: In the Eyes and in the Hands ....... 2890
Nick Benesh, Brent Fonville, Rick Dale
Thinking for Seeing: Enculturation of Visual-Referential Expertise as Demonstrated by Photo-Triggered Perceptual Reorganization of Two-Tone “Mooney” Images .......................... 2896
Jennifer M.D. Yoon, Nathan Witthoft, Jonathan Winawer, Michael C. Frank, Edward Gibson, Ellen M. Markman

Heineken Lecture: Michael Tomasello

Cooperation and Human Cognition ................................................................. 2902
Michael Tomasello

Posters

Mapping alignable or nonalignable differences between domains affects idea quality during analogical problem solving ................................................................. 2903
Cynthia Sifonis

On the Emergence of Analogical Inference ....................................................... 2904
Paul Thibodeau, Stephen Flusberg, Jeremy Glick, Daniel Sternberg

Enhancing the Comprehension of Science Text through Visual Analogies ............ 2910
Bryan Matlen, Stella Vosniadou, Benjamin Jee, Maria Ptouchkina

Modeling structural priming in sentence production via analogical processes .......... 2916
Jason Taylor, Scott Friedman, Micah Goldwater, Kenneth Forbus, Dedre Gentner

Serial order learning and performance by chimpanzees and gorillas on a computerized task .... 2922
Katherine E. Wagner, Stephen R. Ross

A Non-Phylogenetic Conceptual Network Architecture for Organizing Classes of Material Artifacts into Cultural Lineages ..................................................... 2923
Liane Gabora, Stefan Leijnen, Tomas Veloz, Carl Lipo

Shifting attention to a thought: electroencephalographic dynamics during a modified word generation task. ................................................................. 2929
Diego Cosmelli, Cristobal Moenne, Hernán Labbé, Karim Jerbi, Vladimir López, Francisco Aboitiz

Bridging Visual and Executive Attention ......................................................... 2930
Jesse Edelstein, Evan Heit

The Attentional Blink is Modulated by First Target Contrast: Implications of an Attention Capture Hypothesis ................................................................. 2931
Simon Nielsen, Tobias Andersen

A Developmental Perspective on Order and Learning: Temporal Effects on Cued Attention .... 2937
Joseph Burling, Hanako Yoshida

The Effects of Peripheral and Central Distraction on the Spatial Attention of Video Game Players ................................................................. 2943
Coty Gonzales, Ahnate Lim, Scott Sinnett

A Generative Model of Causal Cycles ............................................................. 2944
Bob Rehder, Jay B. Martin

Exploring the influence of particle filter parameters on order effects in causal learning ........ 2950
Joshua T. Abbott, Thomas L. Griffiths

xlii
Motivation-biased design ......................................................... 2956
Cameron Shelley

Reading and writing performance in 7-8 year old children with developmental coordination disorder identified at 5-6 years old ................................................................. 2962
Rong-Ju Cherng, Hsiang-Chun Cheng, Jenn-Yeu Chen, Miau-Lin Shen

Using Web Corpus Statistics to Infer Conceptual Structure ........................................ 2963
Brandon M. Lock, Eugene Agichtein, Kevin J. Holmes, Phillip Wolff

Effects of Category Learning: An Event-Related Potential Study ................................ 2964
Jan Andrews, Ken Livingston, Alex Goldberg, Evan Cesanek, Julianne Herts

Dual Character Concepts .......................................................... 2965
Joshua Knobe, Sandeep Prasada

For the price of a song: How pitch category learning comes at a cost to absolute frequency representations .......................................................... 2971
Melody Dye, Michael Ramscar, Edward Suh

Sequential similarity and comparison effects in category learning ................................ 2977
Paulo Carvalho, Robert Goldstone

It’s around here: Residential history and the meaning of 'Midwest' .............................. 2983
Vsevolod Kapatsinski, Richard Janda

The Influence of Co-Occurrence and Inheritance Information on Children’s Inductive Generalization .......................................................... 2989
Karrie Godwin, Anna Fisher, Bryan Matlen

Implicit and Explicit Sources of Knowledge Effects in Categorization ......................... 2995
Jordan Schoenherr, Tyler Burleigh, Amy Winchester, Guy Lacroix

Modeling forward and backward serial recall using a spatial registry assumption .......... 2996
Nader Noori, Laurent Itti

Shared Representations of Belief and Their Effects on Action Selection: A Preliminary Computational Cognitive Model ........................................ 2997
Paul Bello

Effects of Multiple Learning Mechanisms in a Cognitive Architecture ......................... 3003
Dongkyu Choi, Stellan Ohlsson

Bilingualism influences perceptual inhibition more than stimulus-response inhibition ...... 3009
Henrike K. Blumenfeld, Viorica Marian

Space and time in the child’s mind: Further evidence for a cross-dimensional asymmetry .... 3010
Roberto Bottini, Daniel Casasanto

Probability-matching in 10-month-old infants ......................................................... 3011
Sarah Davis, Elissa Newport, Richard Aslin

Children’s Understanding of the Link Between Sensory Perception and Knowledge ........ 3016
Ellyn Schmidt, Jennie Pyers

xliii
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Individual vocabulary differences and the development of the shape bias</em></td>
<td>3022</td>
</tr>
<tr>
<td>Lynn Perry, Larissa Samuelson</td>
<td></td>
</tr>
<tr>
<td><em>Role of Attention in the Formation of Illusory Correlations Among Preschoolers</em></td>
<td>3028</td>
</tr>
<tr>
<td>Corinne Bower, Chris Lawson</td>
<td></td>
</tr>
<tr>
<td><em>Modeling U Shaped Performance Curves in Ongoing Development</em></td>
<td>3034</td>
</tr>
<tr>
<td>Anthony Morse, Tony Belpaeme, Angelo Cangelosi, Caroline Floccia</td>
<td></td>
</tr>
<tr>
<td><em>The Development of Context Use and Three Way Bindings in Episodic Memory</em></td>
<td>3040</td>
</tr>
<tr>
<td>Hyungwook Kim, Simon Dennis, Vladimir Sloutsky</td>
<td></td>
</tr>
<tr>
<td><em>Attractor Neural Networks as Models of Categorization Task and Word Reading</em></td>
<td>3046</td>
</tr>
<tr>
<td>Shin-ichi Asakawa</td>
<td></td>
</tr>
<tr>
<td><em>Incremental Information Mediates Visual Search</em></td>
<td>3047</td>
</tr>
<tr>
<td>Eric Chiu, Michael Spivey</td>
<td></td>
</tr>
<tr>
<td><em>User Profiling in Assistive Interface for Aged People Cognitive Assessment, Stimulation and Training</em></td>
<td>3048</td>
</tr>
<tr>
<td>Olga Vybornova</td>
<td></td>
</tr>
<tr>
<td><em>Speaking about software requirements using physical artifacts: A study from a situated cognition perspective</em></td>
<td>3049</td>
</tr>
<tr>
<td>Nik Nailah Binti Abdullah, Robert G.M Hausmann</td>
<td></td>
</tr>
<tr>
<td><em>Expressing intention through redundant action in a remote control task: A natural behavior approach</em></td>
<td>3050</td>
</tr>
<tr>
<td>Joseph Chisholm, Evan Risko, Alan Kingstone</td>
<td></td>
</tr>
<tr>
<td><em>The algorithmization of counterfactuals</em></td>
<td>3051</td>
</tr>
<tr>
<td>Judea Pearl</td>
<td></td>
</tr>
<tr>
<td><em>Motor Simulation and Verbal Association in Idiom-Idiom Verification: Effects of Imageability</em></td>
<td>3052</td>
</tr>
<tr>
<td>Galina Gradinarova, Armina Janyan</td>
<td></td>
</tr>
<tr>
<td><em>Estimating the Unknown by the Hot Hand Belief</em></td>
<td>3058</td>
</tr>
<tr>
<td>Yanlong Sun, Hongbin Wang</td>
<td></td>
</tr>
<tr>
<td><em>The formation of context in artificial object recognition</em></td>
<td>3064</td>
</tr>
<tr>
<td>Anthony Knittel</td>
<td></td>
</tr>
<tr>
<td><em>Phonological Encoding of Sentence Production</em></td>
<td>3070</td>
</tr>
<tr>
<td>Caitlin Hilliard, Katrina Furth, T. Florian Jaeger</td>
<td></td>
</tr>
<tr>
<td><em>To Go or to Stay: Age Differences in Cognitive Foraging</em></td>
<td>3076</td>
</tr>
<tr>
<td>Jessie Chin, Wai-Tat Fu, Elizabeth Stine-Morrow</td>
<td></td>
</tr>
<tr>
<td><em>Using a Model-Based fMRI Analysis Method to Locate the Neural Correlates of a Multitasking Bottleneck</em></td>
<td>3077</td>
</tr>
<tr>
<td>Jelmer Borst, Niels Taatgen, Hedderik Van Rijn</td>
<td></td>
</tr>
<tr>
<td><em>Explaining representational shifts by selective attention, selective memorization, and random chance</em></td>
<td>3078</td>
</tr>
<tr>
<td>Toshihiko Matsuoka, Hidetoko Honda, Sou Matsuura</td>
<td></td>
</tr>
</tbody>
</table>
Coordination of Attention to Local and Global Features: Fractal Patterns in a Speeded-Categorization Task ................................. 3084
Ramon D. Castillo, Heidi Kloos, Shana Vanderburgh, John G. Holden

Bridging the Micro-Macro Divide: Multi-Scale Modeling of Technology Adoption .................. 3090
Erica Briscoe, Ethan Trewhitt, Clayton Hutto

On the Use of Size Modifiers When Referring to Visible Objects ......................... 3091
Margaret Mitchell, Kees van Deemter, Ehud Reiter

Cause of the difference in the cognitive process between intervention and observation on causal induction - A study of the effect of ego-involvement- .......................... 3097
Yoshiko Arai

Children posit hidden causes to explain causal variability ........................................ 3098
David Buchanan, David Sobel

Unconscious vs. Conscious Thought in Causal Decision Making .......................... 3104
Stefan Mangold, York Hagmayer

Heuristics in Covariation-based Induction of Causal Models: Sufficiency and Necessity Priors . 3110
Ralf Mayrhofer, Michael Waldmann

Conceptual Combination versus Critical Combination: Devising Creative Solutions using the Sequential Application of Crowds .................................................. 3116
Yuko Tanaka, Yasuaki Sakamoto, Takashi Kusumi

Comics on the Brain: Structure and Meaning in Sequential Image Comprehension ............... 3122
Neil Cohn, Martin Paczynski, Phil Holcomb, Ray Jackendoff, Gina Kuperberg

How visual saliency affects referent accessibility .................................................. 3128
Jorrig Vogels, Emiel Krahmer, Alfons Maes

Adults Are Sensitive to Variance When Making Likelihood Judgments ......................... 3134
Dana L. Chesney, Natalie A. Obrecht

Experts’ Judgments of Likelihood: Fast but not Frugal? ......................................... 3140
Adrian Banks, Stefan Gershater

Characteristics of divergent mathematical thinking in eighth grade students .................... 3141
Donna Kotsopoulos, Joanne Lee, Annalise Clarkson

Introducing Chinese Characters to Beginners Through the Use of Embodied Animations ........ 3142
MingTsan Lu, John Black

The different effects of thinking aloud and writing on graph comprehension ...................... 3143
Nadia Ali, David Peebles

Action, Imagery, and the N400 ........................................................................... 3149
Michael Metzler

Slow to anger: Emergence of emotionally loaded words and faces from interocular suppression . 3155
David Vinson, Andrew Anderson, William Ratoff, Bahador Bahrami, Gabriella Vigliocco

Assessing Young Children’s Hierarchical Action Segmentation ...................................... 3156
Meredith Meyer, Dare A. Baldwin, Kara Sage
Determining the Representation of Sentences in Memory ...................................... 3235
    Stephen Smith, Simon Dennis

Cross-domain variation in children’s causal reasoning ........................................ 3236
    Elizabeth Seiver, Alison Gopnik

Gender, Spatial Ability, and High-Stakes Testing .................................................. 3237
    Teomara Rutherford, David Lee, Michael Martinez

The Relationship Between Gesture and Speech Predicts Who Will Learn to Solve a Chemistry Problem ........................................................................................................ 3243
    Raedy Ping, Elena Zinchenko, Samuel Larson, Mary-Anne Decatur, Susan Goldin-Meadow

Joint Action Theory and Pair Analytics: In-vivo Studies of Cognition and Social Interaction in Collaborative Visual Analytics ......................................................... 3244
    Arias-Hernandez Richard, Kaastra Linda T., Fisher Brian

GREEBLES Greeble greeb. On reduction in speech and gesture in repeated references. .... 3250
    Marieke Hoetjes, Rund Koolen, Martijn Goudbeek, Emiel Krahmer, Marc Swerts

Graphical Displays for Online Information Seeking ................................................. 3256
    Kirsten Butcher, Sarah Davies, Ashley Crockett, Robert Zheng, Aaron Dewald, Anne Cook

Spontaneous corporal coordination in empathic and non-empathic interactions .......... 3257
    Carlos Cornejo, Diego Cosmelli, Esteban Hurtado, Vladimir López

The Effects of Self-Explanation and Practice on Strategy Use .................................. 3258
    Katherine McEldoon, Kelley Durkin, Bethany Rittle-Johnson

Impedance Effects of Visual and Spatial Content upon Language-to-Logic Translation Accuracy ......................................................... 3259
    Dave Barker-Plummer, Robert Dale, Richard Cox

Holographic Reduced Representations and Vector Symbolic Architectures as Tools for Cognitive Modelling ................................................................. 3265
    Matthew A. Kelly, Robert L. West

Cross-modal effects in statistical learning: Evidence from the McGurk illusion ........... 3266
    Aaron Mitchel, Morten Christiansen, Daniel Weiss

Productivity and Reuse in Language: a Developmental Study ..................................... 3267
    Timothy O’Donnell, Jesse Snedeker, Joshua Tenenbaum, Noah Goodman

Generalization to Novel Consonants in Artificial Grammar Learning .......................... 3268
    Sara Finley

Memory limitations alone do not lead to over-regularization: An experimental and computational investigation ................................................................. 3274
    Amy Perfors

Learning individual words and learning about words simultaneously .......................... 3280
    Sylvia Yuan, Amy Perfors, Josh Tenenbaum, Fei Xu

Do motion and auditory metaphors have unique neural substrates? ............................. 3286
    Gwenda L Schmidt, Elizabeth Miller, Stephen Agauas
Trial-by-trial variance in visual working memory capacity estimates as a window into the architecture of working memory ................................................................. 3352
Timothy Brady

The Coexistence Theory: Support from an Activation-Based Memory Model ...................... 3353
Leamari Gordon, Amy Shapiro

The Impact of Musical Experience on Statistical Language Learning ............................... 3354
Anthony Shook, Viorica Marian, James Bartolotti, Scott Schroeder, Sarah Chabal

An electroencephalographic examination of the origin of cognitive decline in aging adults during the colour word Stroop task ................................................................. 3355
Clare Killikelly, Denes Szucs

Theory of Mind brain regions are sensitive to the content, not the structural complexity, of belief attributions ................................................................. 3356
Jorie Koster-Hale, Rebecca Saxe

Religious Belief Systems of Persons with High Functioning Autism ................................. 3362
Catherine Caldwell-Harris, Caitlin Fox Murphy, Tessa Velazquez, Patrick McNamara

The Science Assistments Project: Intelligent tutoring for scientific inquiry skills ............... 3367
Janice Gobert, Michael Sao Pedro, Orlando Montalvo, Ermal Toto, Matthew Bachmann, Ryan Baker

A Dynamical Systems Reformulation of the Normalized Recurrence Algorithm ................. 3368
Bo Pedersen

The effect of confidence hysteresis on number perception and decision making .................. 3369
Darko Odic, Howard Hock, Justin Halberda

Cognitive Bubbles and Firewalls: Epistemic Immunizations in Human Reasoning ............. 3370
Lorenzo Magnani, Tommaso Bertolotti

Transductionally Bounded Hierarchical Systems ............................................................... 3376
Sterling Somers, Francis Jeanson

Exploring Moral Reasoning in a Cognitive Architecture .................................................. 3381
Wayne Iba, Pat Langley

Representation Based on Goal-Achievement: Explaining Motor Intentionality ................. 3387
Hsi-wen Daniel Liu

Simultaneous Prediction and Reaction in Sequence Learning .......................................... 3388
Ronni Jupson, Rick Dale

Processing Scalar Inferences in Face-Threatening Contexts ........................................... 3389
Jean-François Bonnefon, Wim De Neys, Aidan Feeney

Learning Affects Strategic Processing on Raven’s Advanced Progressive Matrices ............. 3395
Alexander Petrov, Taylor Hayes, Per Sederberg

The contribution of cognitive style, cognitive abilities and expertise to the solving of complex problems ................................................................. 3396
Aline Sevenants, Niki Verschueren, Walter Schaeken
Distracting the Hands: The effect of visuospatial interference upon iconic gesture production and speech ................................................. 3402
Lisa Smithson, Elena Nicoladis

Simulating the Temporal Dynamics of Learning-Related Shifts in Generalization Gradients with a Single-Layer Perceptron ................................................. 3403
Matthew Wisniewski, Lauren Guillette, Milen Radell, Christopher Sturdy, Eduardo Mercado

Bilinguals Have Different Hemispheric Lateralization in Visual Word Processing from Monolinguals ................................................ 3409
Sze-Man Lam, Janet Hui-wen Hsiao

In search of the elusive Initial model ................................................. 3415
Hugues Lortie Forgues, Marie-Laurence Brunet, Henry Markovits

Inductive selectivity and integration of information from multiple sources ................. 3416
Nadya Vasilyeva, John Coley

Accidental Proximal Events of Teleological Scenarios Increase Counterfactual Reasoning ...... 3417
Jae Hyuk Choi, Kyung Soo Do

Individual Performance in Optimal Bayesian Inference ........................................... 3418
Rakesh Patel

An investigation of search strategies for hypothesis generation using eye movement data ...... 3424
Miki Matsumuro, Kazuhsa Miwa

Early Exposure to Pictures Facilitates Development of Referential Understanding ................. 3430
Caren Walker, Lisa Walker, Patricia Ganea

Effects of Grounded and Formal Representations on Combinatorics Learning .................. 3431
David Braithwaite, Robert Goldstone

A Linguistic Remark on SNARC: Language and Perceptual Processes in Spatial-Numerical Association .......................................................... 3437
Sterling Hutchinson, Sophia Johnson, Max Louwerse

Testing Cratylus’ Hypothesis: Aspectual Iconicity ................................................ 3443
Daniel Klenovsak, Dietmar Zaefferer

In Defense of Spatial Models of Lexical Semantics ................................................. 3444
Michael Jones, Thomas Gruenenfelder, Gabriel Recchia

Do Culture Related Factors Influence Students’ Critical Thinking Use? ......................... 3450
Emmanuel Manalo, Takashi Kusumi, Masuo Koyasu, Yasushi Michita, Yuko Tanaka

Having an Interdependent Self-Construal Leads to Greater Weighting of Data In Causal Judgment ................................................. 3451
Kelly M. Goedert, Lisa R. Grimm, Arthur B. Markman, Barbara A. Spellman

Top-down and Bottom-up Process of Animacy Perception: An ERP study ......................... 3452
Haruaki Fukuda, Kazuhiro Ueda

Expanding the Space of Cognition via Multi-scale Entrainment: A Medium for Education and Enculturation ................................................. 3453
J. Scott Jordan, Kris Ariyabuddhiphongs, Erica Ranade, Andrew Baker
Rolling Down South: A Topographical Heuristic Guiding Navigation ........................................... 3454
Stephanie A. Gagnon, Tad T. Brunye, Holly A. Taylor

Individual Differences in Mental Rotation: Piecemeal vs Holistic Processes ............................... 3455
Peter Khooshabeh, Mary Hegarty, Thomas F. Shipley

Decay of Information in Spatial Mental Images .......................................................... 3456
Don Lyon

Is location memory biased towards a spatial or a functional prototype? .................................. 3457
Paula Engelbrecht

Orientation Preferences for Photographed Objects: Effects of Handedness and Object Type ....... 3458
Rebecca Rhodes, Jyotsna Vaid, Eleazar Montes

The Influence of Conceptual Structure on Structural Priming ................................................. 3459
Ann Bunger, Anna Papafragou, John Trueswell

Spatial Thinking in Physics: Longitudinal Impacts of 3-D Spatial Training ............................. 3465
David I. Miller, Diane F. Halpern

Sequential Integration of Object Locations in a Spatial Updating and Reasoning Task ............... 3471
Sven Bertel, Hyunkyu Lee, Wai-Tat Fu

Cognitive processes underlying spatial belief revision ............................................................ 3477
Leandra Bucher, Antje Krumnack, Jelica Nejasmic, Markus Knauff

Is there any Need to Mention Induction? .............................................................. 3483
Chris Thornton

Modeling Performance Differences across Systems, Tasks, and Strategies ............................. 3489
Jessica Lee, Dorrit Billman

A hybrid cognitive architecture based on the relationship between consciousness, memory and attention .......................................................................................................................... 3495
Eunsook Kim, Hyunjung Shin

Interactive diagrams reduce the split-attention effect in geometry ......................................... 3496
Robert Hausmann, Daniel Dickison, John Connelly, Brendon Towle

Top down predictions moderate visual appearance of attended objects .................................... 3497
Lisa Bauer, Marjan Persuh, Mabel Gomez, Robert Melara

Category Learning From Alignable Examples: An Application to Structural Geology ............... 3498
Benjamin D. Jee, Chad Desharnais, Joanna V. Staley

What is more influential in idea generation for innovation: information or individual adoption category? .................................................................................................................. 3499
Kazuhiro Ueda, Yuichi Washida

Contingent Uncertainty, Strategic Uncertainty, and Coordination ........................................... 3500
Thomas Wisdom, Keigo Inukai, Kengo Kurosaka, Wataru Toyokawa, Yoichi Hizen, Tatsuya Kameda

Iconicity in language processing: What signed languages reveal .............................................. 3501
Robin L. Thompson, Robert Skinner, David P Vinson, Gabriella Vigliocco
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating the Divergent Auto-Encoder (DIVA) as a Machine Learning Algorithm</td>
<td>3502</td>
</tr>
<tr>
<td>Kenneth Kurtz, Xavier Oyarzabal</td>
<td></td>
</tr>
<tr>
<td>General Magnitude Representation and Mathematics: How Number and Area Acuity Relate to Math Ability</td>
<td>3503</td>
</tr>
<tr>
<td>Justin Bonny, Stella Lourenco</td>
<td></td>
</tr>
<tr>
<td>Going through the Motions: Skill Differences in the Representation of Arithmetic Operations</td>
<td>3504</td>
</tr>
<tr>
<td>Marcie Penner-Wilger, David H. Landy, Xiaoyu Zhang, Alison Weitzer</td>
<td></td>
</tr>
<tr>
<td>Context dependency and systematicity in connectionism</td>
<td>3505</td>
</tr>
<tr>
<td>Jordi Majà</td>
<td></td>
</tr>
<tr>
<td>Creative Interference and States of Potentiality in Analogy Problem Solving</td>
<td>3506</td>
</tr>
<tr>
<td>Liane Gabora, Adam Saab</td>
<td></td>
</tr>
<tr>
<td>Robust Language Acquisition – an Emergent Consequence of Language as a Complex Adaptive System</td>
<td>3512</td>
</tr>
<tr>
<td>Nick Ellis, Matthew Brook O’Donnell</td>
<td></td>
</tr>
<tr>
<td>When does provision of instruction promote learning?</td>
<td>3518</td>
</tr>
<tr>
<td>Hee Seung Lee, Abraham Anderson, Shawn Betts, John Anderson</td>
<td></td>
</tr>
<tr>
<td>The mirage of morphological complexity</td>
<td>3524</td>
</tr>
<tr>
<td>Fermín Moscoso del Prado</td>
<td></td>
</tr>
<tr>
<td>The Effects of Peer Tutoring and Teachable Agent on Interest and Task Performance</td>
<td>3530</td>
</tr>
<tr>
<td>Yeonhee So, Youngok Kim</td>
<td></td>
</tr>
<tr>
<td>Is Arithmetic Embodied? Differential Interference of Sequential Finger Tapping on Addition during a Dual Task Paradigm</td>
<td>3535</td>
</tr>
<tr>
<td>Firat Soylu, Sharlene Newman</td>
<td></td>
</tr>
<tr>
<td>Modeling the Effect of Lexico-Syntactic Gender on Spoken-Word Recognition</td>
<td>3541</td>
</tr>
<tr>
<td>Garance PARIS, Matthew CROCKER, Marshall MAYBERRY</td>
<td></td>
</tr>
<tr>
<td>A Developmental Trend in the Structure of Time-Estimation Performance</td>
<td>3547</td>
</tr>
<tr>
<td>Lori Gresham, Sebastian Wallot, Heidi Kloos, Guy Van Orden</td>
<td></td>
</tr>
<tr>
<td>Impact of emotion on numerical estimation</td>
<td>3552</td>
</tr>
<tr>
<td>Katrina Rodzon, Joesphe Baker, Kerry Jordan</td>
<td></td>
</tr>
<tr>
<td>Is Insight Always the Same? An fMRI Study of Insight</td>
<td>3558</td>
</tr>
<tr>
<td>Edward Cranford, Jarrod Moss</td>
<td></td>
</tr>
<tr>
<td>Pitch Structure of Melodic Lines: An Interface between Physics and Perception</td>
<td>3564</td>
</tr>
<tr>
<td>Jorge Eduardo Useche, Rafael Germán Hurtado</td>
<td></td>
</tr>
<tr>
<td>It’s all about the game: Infants’ action strategies during imitation are influenced by their prior expectations</td>
<td>3570</td>
</tr>
<tr>
<td>Yue Yu, Tamar Kushnir</td>
<td></td>
</tr>
<tr>
<td>The integration of frequency and phonetic variation in the perception of accented speech</td>
<td>3575</td>
</tr>
<tr>
<td>Marie-Catherine de Marneffe, John Tomlinson, Marisa Tice, Meghan Sumner</td>
<td></td>
</tr>
</tbody>
</table>
Towards Computational Guessing of Unknown Word Meanings: The Ontological Semantic Approach ................................................................. 3581
Julia M. Taylor, Victor Raskin, Christian F. Hempelmann

The cognitive impact of chronic low back pain: positive effect of multidisciplinary pain therapy . 3587
Haili Wang, Simone Gantz, Marcus Schiltenwolf

Recommendation Systems that Establish New Forms of Representational Reality through Journalistic Content ........................................... 3588
Walter Teixeira Lima Junior

(How) Are features Inherited? ................................................................. 3589
Sandeep Prasada, Samuel Pitt-Stoller

Author Index .......................................................................................... 3590

Reviewers List ....................................................................................... 3612