

Cognitive Psychology: A Summary of the 45th Annual Meeting
of the
Psychonomic Society
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The Psychonomic Society (www.psychonomic.org) "promotes the communication of scientific research in psychology and allied sciences". Membership in the Psychonomic Society is international with approximately 2,500 members world-wide. To accomplish its goal, the Society publishes six journals including *Learning & Behavior*, *Perception & Psychophysics*, *Memory & Cognition*, *Cognitive, Affective, & Behavioral Neuroscience*, *Psychonomic Bulletin and Review*, and *Behavioral Research Methods, Instrumentation, & Computers*. An annual meeting is also held by the Society. The 45th Annual Meeting of the Psychonomic Society was held November 18th through the 21st in Minneapolis, Minnesota.

Conference Summary

There were 820 presentations made at the meeting. The majority (501) of those presentations were posters (Table 1). Poster presentations covered a wide range of specialty areas within cognitive psychology. Interestingly, language processing was the most frequently represented area followed by memory, perception, and attention.

Table 1. Number of poster presentations by general category of specialty areas.

<u>General Category</u>	<u>Number</u>	<u>Percentage</u>
Language	137	27.35
Memory	114	22.75
Perception	59	11.78
Attention	58	11.58
Reasoning and Decision Making	32	6.39
Learning	28	5.59
Cognitive Control	22	4.39
Metacognition	21	4.19
Spatial Cognition	16	3.19
Motor Control	8	1.60
Problem Solving	6	1.20
Total	501	100.00

The remaining 319 presentations consisted of one keynote address, six symposia, and paper presentations. Dr. Anne Treisman presented the keynote address entitled, "Broad and Narrow Attentional Focus: How It Determines What

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We See". During the address, Treisman discussed her research on attention which has spanned several decades. Treisman provided a variety of empirical examples to show that features of objects are processed as attention is focused narrowly while global processing occurs as attention is broadened.

The six symposia dealt with a variety of topics in cognitive research (Table 2). Cognitive modeling is a growing area. As this area continues to grow in interest, researchers must address several important questions concerning cognitive modeling. For instance, why should one style of cognitive modeling be chosen over another and how should the models be evaluated? The symposium "What Does It Mean to Model Cognition?" dealt with these types of questions. Logan argued that cognitive modeling allows researchers to progress from prediction to understanding to control by exposing causal factors underlying a particular phenomenon and provides a tool for measuring those factors even when they cannot be seen directly. Wallsten, however, suggested that cognitive models are only useful when they re-express data in terms of a theoretically meaningful construct, suggest how cognitive processing can or should be measured, or when they fit data in such a way that they lead to a new understanding of the cognitive process being investigated. Shiffrin also suggested that factors such as simplicity, elegance, fit, and predictive power should be considered when evaluating cognitive models. Plaut cautioned that cognitive models may not necessarily account for all aspects of the data or all the relevant principles associated with a given process. Batchelder further noted that cognitive models may actually be wrong in how they describe human cognitive processing but, nevertheless, provide a relatively simple way to understand factors that influence cognitive processing (e.g., individual differences). The second symposium, "Cognitive Time Travel in People and Animals", focused on recent animal and developmental research indicating that animals, contrary to previous assumptions, exhibit episodic-like memory and that episodic thinking in humans appears to emerge around age four. Although visual short-term memory (VSTM) has been important for theories of visual cognition for over 20 years, it has only been recently that researchers have focused on the capacity of this store and how information is represented and integrated within visual short-term memory. The symposium entitled "Visual Short-Term Memory for Features and Objects" examined recent findings related

to VSTM. Specifically, the capacity of VSTM is influenced by individual differences in memory capacity (low capacity individuals hold more irrelevant items in VSTM) and by the similarity, grouping, and spatial layout of objects along with the level of detail required for a particular task. "Representing and Using Words Referring to Events" examined the difference between object-related words and action or event-related words. There appear to be neurological differences between object-related items and event-related items but no differences between nouns and verbs when referring to actions or events (Vigliocco, Warren, Arciuli, Siri, & Wise and Tranel). However, actions require an actor. Additional research suggests that the actors are quickly identified within an hierarchical schema-based representation and paired with the action (McRae and Tversky, Zacks, Martin, & Lozano). Bilingualism is a significant area of study that has also informed our understanding of language and memory. The fifth symposium, "Contributions of Research on Bilingualism to Cognitive Psychology" emphasized how bilingualism research informs the development of theory and data in cognitive psychology. In particular, research suggests that there is a hierarchy of perceptual and lexical analyses (categorization, for example, is easier than lexical decisions), bilinguals parse sentences differently than monolinguals, bilinguals are more likely to commit subject-verb agreement errors, and that speech-speech bilinguals (e.g., Russian and English) switch between language codes while speech-sign bilinguals (e.g., Russian and International Sign Language) blend language codes. Finally, recent findings in spatial reasoning were summarized in "Putting Perspective in Things: The Role of Point of View in Spatial Reasoning." Research indicates that sensorimotor inputs, geometry, and landmarks

Table 2. Symposia titles and participants for the 45th Annual Meeting of the Psychonomic Society.

Symposium	Participants
What Does It Mean to Model Cognition?	Richard M. Shiffrin (Indiana University) David C. Plaut (Carnegie Mellon University) William Batchelder (University of California, Irvine) Gordon D. Logan (Vanderbilt University) Thomas A. Wallsten (University of Maryland)
Cognitive Time Travel in People and Animals	Nicola S. Clayton (University of Cambridge) Christina M. Atance (University of Ottawa) Stephanie J. Babb & Jonathan D. Crystal (University of Georgia) R. R. Hampton, B. M. Hampstead, & E. A. Murray (NIMH-NIH) William A. Roberts (University of Western Ontario) Thomas R. Zentall (University of Kentucky) & Tricia S. Clement (Stanford University)
Visual Short-Term Memory for Features and Objects	Edward K. Vogel & Maro G. Machizawa (University of Oregon) George A. Alvarez & Patrick Cavanagh (Harvard University) Yaoda Xu (Yale University) Yuhong Jiang & Arjun Kumar (Harvard University) Andrew Hollingworth (University of Iowa) Steven J. Luck (University of Iowa)
Representing and Using Words Referring to Events	Gabriella Vigliocco, Jane Warren, Joanne Arciuli (University College London) , Simona Siri (Universita Vita-Salute, San Raffaele), & Richard Wise (Imperial College London) Daniel Tranel (University of Iowa) Gail A. McKoon & Roger Ratcliff (Ohio State University) Ken McRae (University of Western Ontario) Jeffrey M. Zacks (Washington University), Bridgette Martin & Sandra Lozano (Stanford)

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Contributions of Research on
Bilingualism to Cognitive
Psychology

Nuria Sebastian-Galles & Laura Bosch (University of
Barcelona)
Paola Dussias & Chip Gerfen (Pennsylvania State
University)
Janet G. van Hell & Marijke Mensies (University of
Nijmegen)
Karen Emmorey (Salk Institute)
Tamar H. Gollan (University of California, San Diego)
Lera Boroditsky (Stanford University)

Putting Perspective in
Things: The Role of Point of
View in Spatial Reasoning

Jack Loomis (University of California, Santa Barbara) &
Roberta Klatzky (Carnegie Mellon University)
Barbara Tversky (Stanford University), Paul Lee (NASA Ames
Research Center) & Holly Taylor (Tufts University)
Jeffrey M. Zacks (Washington University)
Nora S. Newcombe (Temple University)

contribute to imagined spatial transformations and updating one's actual position in space highlighting the relationship between spatial reasoning and navigation. However, individual differences, psychophysical responses, and neurophysiological dissociations suggest that imagined transformations of one's own perspective are different from imagined transformations of objects.

There were also 284 paper presentations (Table 3). Similar to the poster presentations, language and reasoning and decision making were the most frequent paper presentations followed by perception, attention, and memory.

Table 3. Number of paper presentations by general category of specialty areas.

General Category	Number	Percentage
Language	52	18.31
Reasoning and Decision Making	52	18.31
Perception	47	16.55
Attention	43	15.14
Memory	35	12.32
Learning	26	9.15
Spatial Cognition	7	2.46
Metacognition	6	2.11
Motor Control	6	2.11
Cognitive Control	5	1.76
Individual Differences	5	1.76
Total	284	100.00

Membership Information and Future Meetings

Membership in the Psychonomic Society is awarded to professionals who are qualified to conduct and supervise scientific research in psychology or related sciences. Requirements for membership include a doctoral degree and significant publication beyond the dissertation. Associate membership status is granted to individuals with a Ph.D. or equivalent degree who have not yet had the opportunity to publish a significant amount of research in their area of specialty. Although the Psychonomic Society members are largely from the United States (approximately 76 percent), membership is world-wide with members from Canada, Europe (e.g., United Kingdom, Germany), Asia (e.g., Japan), the Middle East (e.g., Israel), and New Zealand.

Future meetings of the Psychonomic Society will be held in Toronto, Canada (2005) and Houston, Texas (2006). The submission deadline for the conference is in June. The

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annual meeting is held in November. Over the last seven years there has been an average of 798 submissions per year with 752 being accepted for presentation (94.20 % acceptance rate).