

POSTER SESSION I
Grand Ballroom, Convention Center
Thursday Evening, 6:00-7:30

• INFERENCES •

(1001)

Motor Priming As a Result of Inferences in Sentence Comprehension. CHRISTOPHER M. WARREN, MICHAEL E. J. MASSON, & DANIEL N. BUB, *University of Victoria* (sponsored by A. A. J. Marley)—The role of action representations in language comprehension was examined. Subjects listened to sentences and were cued to make a gesture related or unrelated to a manipulable object mentioned in the sentence. Gesture production was faster when the gesture was related to the object. Variations in sentence context showed dissociable priming effects between functional gestures (associated with an object's use) and volumetric gestures (associated with an object's shape), even when manual interaction was not explicitly mentioned in the sentence. When the sentence described a nonphysical interaction (*the man looked at the calculator*), implying intention to use the object, only functional gestures were primed. When the sentence described a nonmanual physical interaction (*the man stepped on the calculator*), implying that the object should be moved, only volumetric gestures were primed. These results suggest that motor representations are activated as a result of inferential processes during sentence comprehension.

(1002)

Hemisphere Differences in Knowledge-Based Inferences: Domain Makes a Difference. CONNIE SHEARS, AMANDA HAWKINS, ANDRIA VARNER, LINDSEY LEWIS, & JENNIFER HEATLEY, *Chapman University*—Language comprehension emerges when the left hemisphere (LH), utilizing a fast mechanism based on strongly associated words, and the right hemisphere (RH), using a slower mechanism based on distant associations, share information derived from discourse (Beeman et al., 2000). This study investigates the role of knowledge domain across hemispheres, hypothesizing that the RH may demonstrate inference processes for planning knowledge whereas the LH may demonstrate inference processes for knowledge of physical cause and effect. Sixty-eight participants completed divided-visual-field reading tasks based on 2-sentence stimuli that relied on these knowledge areas. Inference processes were measured by probe word recognitions. The results showed that readers made more planning inferences from the RH and more physical inferences from the LH, indicating that inference processes occur from each hemisphere dependent upon the knowledge domain required to support it. These data extend previous findings, specifying that hemispheric differences in language processes are also based on knowledge domains.

(1003)

Influences on the Generation of Instrumental Inferences During Text Comprehension. JOEL A. HAGAMAN & WILLIAM H. LEVINE, *University of Arkansas*—Relationships between visual, verbal, and general working memory (measured with a variety of instruments) and the propensity to generate instrumental inferences during text comprehension were examined. Inferencing was measured with a lexical decision task. In an inference condition, participants read about a character performing an action (e.g., *The cook was slicing vegetables . . .*) and were required to make a lexical decision on a related noun (e.g., *knife*). In the control condition, the text was not as strongly related to the probe word (e.g., *The cook was steaming vegetables . . . knife*). It was predicted that individuals scoring high on the working memory measures would show the largest differences between these conditions. The results indicated that, whereas inferences were generated, their relation to working memory was opposite from predictions. The results are discussed in terms of individual differences in attentional control.

(1004)

Do Readers' Trait Inferences Influence the Generation of Predictive

Inferences? MARK A. CASTEEL, *Pennsylvania State University, York*—Previous research has shown that readers can construct trait inferences about narrative characters. These trait inferences have been shown to influence the processing of later text that is either consistent or inconsistent with the narrative. Other research has shown that readers can generate predicted outcomes of highly likely events, even when they are not needed for comprehension. The present research expands upon these two areas by examining whether trait inferences mediate the likelihood that readers will generate predictive inferences. Participants read narratives that suggested a likely character trait. Later, the narratives suggested a likely predictive inference that either was or was not relevant to the character trait. Reading latencies to a critical target sentence about the inference were recorded. The results help to delineate the influence of trait inferences on later discourse comprehension. Implications for theories of discourse processing will be discussed.

(1005)

Separable Electrophysiological Effects Underlie N400s Elicited by New Versus Inferred Information During Comprehension. VAUGHN R. STEELE, EDWARD M. BERNAT, PAUL F. COLLINS, PAUL VAN DEN BROEK, CHRISTOPHER J. PATRICK, & CHAD J. MARSOLEK, *University of Minnesota*—Successful comprehension of scenarios requires inferring information that is not explicitly presented in the text. After an inference is generated, how is inferred/expected information processed differently from new information? We used event-related potentials (ERPs) and time-frequency analysis to investigate neural correlates of the processes that occur after a causal coherence inference has been made during comprehension. Participants read short inference-promoting texts and performed a lexical decision after each text. Target words were either unrelated or inference-related to the preceding text. Consistent with previous N400 reports, unrelated words elicited greater negativity than did inference-related words. Using time-frequency analysis of the N400, we found evidence for dissociable neural processes. Early theta activation was associated with detecting a lack of coherence between expected and incoming information (greater for unrelated than for inference-related words), but later delta activation was associated with integrating incoming information with the text representation (greater for inference-related than for unrelated words).

(1006)

Bilingual Resonance: Reactivating Text Elements Between L1 and L2. BROOKE LEA, *Macalester College*, PAUL VAN DEN BROEK & JAZMIN CEVASCO, *University of Minnesota*, & AARON MITCHEL, *Pennsylvania State University*—Memory-based text processing research has focused on how distal text concepts are reactivated by an automatic resonance process. In a typical experiment, an adjective-noun pair such as "leather couch" is presented as a contextual cue early in a passage, and then repeated later in the passage. Concepts associated with the first instance of the cue are reactivated upon presentation of the second instance of the cue. Researchers agree that feature overlap is fundamental to triggering resonance, but little is known about how overlap is defined psychologically. We gave English-Spanish bilinguals passages that were partly in English and partly in Spanish, and crossed L1 and L2 with the beginning and end of each passage to determine the effect that cue encoding in one language has on the translated counterpart encoded in the other language. The results showed robust resonance effects both within and between languages, and a modest L2 proficiency effect.

• SPEECH PERCEPTION •

(1007)

A Model of Discrimination Change Due to Unsupervised Category Learning. BRENDEN M. LAKE, GAUTAM K. VALLABHA, & JAMES L. MCCLELLAND, *Stanford University* (sponsored by James L. McClelland)—The learning of perceptual categories often leads to