SDSU / UCSD Joint Doctoral Program in Language & Communicative Disorders

18TH Annual Doctoral Student Colloquium

Friday, October 3, 2014

9:00 am, UCSD, CSB 003

Christopher Brozdowski

Co-Thought Gestures in Bimodal Bilinguals

Irina Potapova

Comparing Cognate Effects in Child and Adult Spanish-English Bilinguals

Natalie Sullivan

The curious case of unaccusative verbs in aphasia

Refreshments will be served

Host: UCSD Center for Research in Language

For information or directions, please email:
Janet Park (jpark@mail.sdsu.edu) or Janet Shin (jshin@ucsd.edu)

Co-Thought Gestures in Bimodal Bilinguals

Christopher Brozdowski
Advisor: Karen Emmorey, Ph.D.

Use of a sign language provides both experience manually encoding information and opportunities to iconically represent spatial information. Recent work has shown that hearing ASL-English bilinguals produce more iconic co-speech gestures than nonsigners (Casey & Emmorey, 2009; Casey, Emmorey & Larrabee, 2012), but little is known about "co-thought" gestures in these "bimodal bilinguals." Co-thought gestures are produced for the speaker's benefit, e.g., they are produced while thinking, rather than conversing. Such gestures can lighten cognitive load and improve memory for spatial layouts by providing an embodied representation of spatial environments (Cook, Yip & Goldin-Meadow, 2012; Jamalian, Giardino & Tversky, 2013). We asked bimodal bilingual and nonsigning participants to memorize spatial descriptions (e.g., the layout of a town) and to respond vocally to true/false statements. Participants were alone in the room, and their performance was videotaped. Bimodal bilinguals were more likely to produce co-thought gestures than non-signers, and they also exhibited better memory for the spatial layouts. Better memory for spatial environments was not linked to better spatial abilities (as assessed by mental rotation or mental imagery tasks). These results indicate that acquiring a sign language increases co-thought gesture production and may improve cognitive processes that are supported by gesture.

Comparing Cognate Effects in Child and Adult Spanish-English Bilinguals

Irina Potapova
Advisor: Sonja Pruitt, Ph.D.

Cognates are translational equivalents that are similar in sound and spelling across two languages (e.g., *triangle* in English and *triángulo* in Spanish). Cognates contrast with non-cognates—translation equivalents that are dissimilar in sound and spelling (e.g., *apple* in English and *manzana* in Spanish). Adult bilinguals have been shown to respond more quickly and accurately to cognate than non-cognate prompts on a variety of linguistic tasks (e.g., Van Assche, Duyck & Brysbaert, 2013). This difference is known as the "cognate advantage" and is consistently reported for adult bilinguals (see Sánchez-Casas & García-Albea, 2005, for a review). In contrast, work on the cognate advantage in young bilinguals is limited and much is left to be understood. Investigating the cognate advantage across different stages of developmental is important given the role cognates have already played in models of adult bilingual lexical processing (e.g., BIA+; Dijkstra & Van Heuven, 2002).

In this study, child (mean age = 54 months; n = 73) and adult (mean age = 21.77 years; n = 26) Spanish-English bilinguals' performance on the *Peabody Picture Vocabulary Test-Third Edition* was analyzed for cognate and non-cognate accuracy rates. Both speaker groups were found to have significantly higher cognate than non-cognate accuracy rates (i.e., demonstrated a cognate advantage). However, while nearly all adult participants showed this trend, the effect was less consistent for child speakers. Correlational analyses indicate that for typically developing preschool-aged Spanish-English bilinguals, the cognate advantage is associated with higher Spanish exposure and weaker English language performance.

The Curious Case of Unaccusative Verbs in Aphasia

Natalie Sullivan
Advisors: Tracy Love, Ph.D. & Lewis Shapiro, Ph.D.

People with Broca's aphasia (PWBA) have difficulty understanding sentences that are presented in non-canonical word order, relative to 'simple' sentences with canonical (S-V-O) word order. These complex constructions result from the movement or displacement of an NP, for example, to a position earlier in the sentence, yielding O-S-V word order. Consider (1), a sentence with an object-extracted relative clause:

(1) The man saw *the boy* that **the gir**l kissed <~~the boy~~> behind the bleachers.

The NP *the boy* has been displaced from its direct object position to a position ahead of the subject NP, *the girl*, leaving behind an unpronounced copy or trace of the NP. In psycholinguistic terminology, the displaced NP is the 'antecedent' and the position from where it was base-generated and displaced is called the 'gap'. These two positions are said to form a dependency chain.

There are several accounts of why such structures are problematic in aphasia, but almost all either have conceptual shortcomings or fall short in explaining the range of sentence types affected by the deficit. One account I have been investigating is the Intervener Hypothesis (IH). The IH posits that the difficulty in comprehending sentences that have syntactic dependencies is based on whether a displaced element crosses another constituent, or intervening noun phrase. In example (1), the displaced NP, *the boy*, crosses over another argument, the subject NP *the girl*. According to the IH, this intervening NP potentially interrupts the formation of the dependency chain. The basic idea underlying the IH is **similarity-based interference**. In (1), the NP that has been displaced and the intervening NP have similar properties - both are structured as DET N. The patient with aphasia, confronted with such structures, become confused as to "who did what to whom" because they may be particularly sensitive to similarity-based interference.

The purpose of the current study is to test the Intervener Hypothesis in an offline comprehension task with sentences containing unaccusative verbs:

(2) The man disappeared <~~the man~~>.

There is strong linguistic and psycholinguistic evidence that the single argument of unaccusative verbs (e.g., *the man* in (2)) are base-generated in object position and displaced to the surface subject position, forming a dependency chain between the two positions. In my study I used a sentence-picture matching task to determine if individuals with Broca's aphasia (n=6) have difficulty comprehending sentences containing unaccusative verbs when there is (3a) or isn't (3b) an intervening NP.

3a. The firefighter that observed **the policeman** disappeared ___ through the door.
3b. The firefighter observed that the policeman disappeared ___ through the door.

Sentence (3a) contains an unaccusative verb, *disappear*, and its single argument, *the fireman* (underlined). The relative clause in (3a) contains another NP, *the policeman*, which intervenes between the displaced NP and its gap. Sentence (3b), on the other hand, does not contain an intervener. Results showed that only in sentences like (3a) was comprehension impaired. It is argued that these results, combined with others in the literature, provide support for the Intervener Hypothesis.