Multi-site collaboration that includes Georgia State and Georgia Institute of Technology

Neuroimaging of reading, language, and cognition

Gwen Frishkoff (GSU Psychology) & Kate P. Revill have been collaborating with researchers at the Medical College of Wisconsin on a combined fMRI/ERP/MEG study of semantic comprehension.

Participants read sentence fragments and then performed a lexical decision task on a visually presented item that was either a non-word or a word that best completed the sentence context (“expected” words), made sense in the sentence context but wasn’t the most likely ending (“unexpected” word) or didn’t fit the sentence context at all (“anomalous” words). Using identical materials and an identical paradigm, Dr. Frishkoff and colleagues have collected data using all three methodologies.

They are now looking at the underlying correlates of semantic integration by comparing meaningful completions (“expected” and “unexpected” words) with nonmeaningful completions (“anomalous” words) and of semantic expectedness (“expected” words vs. “unexpected” and “anomalous” words). Each neuroimaging technique has its own particular sets of advantages and tradeoffs- fMRI, for example, provides high spatial resolution but relatively low temporal resolution, while ERP and MEG have excellent temporal resolution- but this study can take advantage of the benefits of each technique to form the most complete picture yet of the neural correlates of semantic comprehension. They are also looking at whether individual differences in verbal abilities relate to activation or brain structure differences.

TRIVIA QUESTION

Q: How much blood flows through the brain per minute?

The correct answer will be posted in the next newsletter!
Recent & Upcoming Events

CABI Users Meetings are on the 1st Monday of each month from 8:30 - 10am

February: During this meeting we discussed appropriate methods for ROI selection & avoiding circularity. (Referenced Kriegeskorte et al, 2009).

March: Speaker: Mukesh Dhamala, Ph.D
Professor in Physics and Astronomy at GSU
http://www.phy-astr.gsu.edu/dhamala/dhamala.html

April: Speaker: Audrey Duarte, Ph.D
Professor in Psychology at GT
http://www.psychology.gatech.edu/duiartelab

Technologist's Update

In order to continue to the latest technological advances in functional Magnetic Resonance Imaging, CABI has purchased a foot press that can be used to collect response data during functional studies. The foot press can be used as an alternative to the finger/button press.

Lastly, it it time for many of you to attend MRI Safety Training and to update your Cardiopulmonary Resuscitation Certification. Both courses will be offered at various times throughout March and April.