

In This Issue

A Deafening Silence

The potentially paradoxical priming-produced decrease in extrastriate blood flow during visual word stem completion is well documented. Various easy explanations for this effect suggest themselves. The Harvard team of Badgaiyan et al. (p. 337) throws a serious wrench in the works with the news that this decrease occurs even when the task involves no obviously visual processing at all. Word stem completion, with both study and test items presented solely auditorily, decreased blood flow in extrastriate visual cortex on previously seen stems—apparently precisely the same priming effect observed with visually presented stems. Perhaps another manifestation of visual imagery, so notoriously elusive when compared with a simple fixation "baseline"? The authors think not, speculating instead on a possible role for nonvisual processing in, specifically, V3A. Predictably, though, the story may not be simple. Badgaiyan et al. further report that a crossmodal version of the same experiment, in which study items were presented visually and test items auditorily, induced no such decrease in extrastriate flow. The authors observe that an explanation for this strange omission, and for the effect itself, must await additional study.

You Sheep All Look The Same

The beleaguered hypothesis of a category-specific deficit for face recognition takes another beating in this issue, in a crisp paper by Gauthier et al. (p. 349). To stave off swarming confounds, the authors do not directly compare prosopagnosic subjects' recognition performance across categories. Instead they manipulate the level of subordinate categorization within each domain. By monitoring response times, they reveal a speed/accuracy tradeoff; by use of signal detection measures, they reveal a significant bias effect. Their results point to a critical role for both categorization level and expertise in producing the "selective deficit" of prosopagnosia.

Won't Be Needing This Other Stuff, Then

By PET-scanning a stroke victim, Price et al. (p. 371) examined what brain regions might be responsible for his preserved semantic processing. They present their

findings in the context of determining which cortical areas are necessary for performance of a task and which areas are sufficient.

"Impossible" Ist Nicht Ein Deutsches Wort

Hagoort et al. (p. 383) extend previous imaging studies of word reading by, first, using German, a more orderly language than English, and, second, judiciously matching words with sublexically legal pseudowords. They find that German and English pseudowords activate similar cortical areas and that pseudowords activate the left inferior frontal gyrus more than do words. The latter finding is proposed to expose this region's role in orthographic-phonological conversion.

Pet Names

Murtha et al. (p. 399) PET-scanned subjects engaged in naming pictures of animals. They suggest that their results reveal, among other things, the fusiform's primary role in "perceptual semantics" rather than in lower-level processing.

Medial Temporal Motor Magnetism

Tesche and Karhu (p. 424) examine the hippocampus' motor role with a MEG study: subjects performed simple oddball tasks requiring manual responses. Triggering their signal averages off either the stimuli or the responses, they find a hippocampal signature to be equally synchronized with each, and speculate on a timing role for theta rhythms.

ERPs Elucidate Multiple Memory Mechanisms

Repeated exposure speeds subsequent recognition, and many other processes besides. The sources of this "repetition effect" are unclear. Converging evidence points to at least two mechanisms: a short term "semantic" activation that does not depend on explicit memory for the original stimulus, and a longer lasting, less pronounced episodic facilitation that does. Behavioral explorations of these are mirrored by myriad ERP studies. Guillem et al. (p. 437) take things deeper with intracranial recordings

in presurgical epileptics, in an effort to better assess the contributions of various brain regions. They find their results to be in good agreement with neuropsychological literature.

Those Pacmen Make You Look Fat

The left hemisphere's overweening analyticity is brought home by the news that it can't even spot a nice gestalt. In an elegantly simple experiment, Corballis et al. (p. 459) presented split-brain patients' hemispheres with displays that typically induce perception of illusory contours, or of grouped shapes without illusory contours ("amodal

completion"). They find that, in contrast to previous reports, both hemispheres seem to perceive illusory contours, but that amodal completion appears to be more pronounced in the right hemisphere.

Summary Summary

Fitzpatrick and Rothman (p. 467) summarize the Functional Neuroenergetics meeting; many interesting developments are reported.

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