In This Issue

An Uncus Amuncus

We tend to remember unusual things. Amanda Parker and colleagues (p. 691) first introduce a task to test this tendency and then remove pieces of monkeys' brains to extinguish it. The task is to view a succession of images, one of which is distinct from the others in some way, and to determine which of the subsequent test images have previously been presented and which of them are decoys. Both monkeys and humans reliably recognize the single abnormal image better than its conformist peers. Parker et al. find that bilateral ablations of both the amygdala and fornix barely diminish the effect, whereas lesions disconnecting the perirhinal cortex from either the prefrontal cortex or the magnocellular mediodorsal thalamus obliterate it. Their results contribute to an increasing appreciation of the subtleties of the temporal lobe.

Read My Lips

William Smith on p. 663 reports that the faces of humanities faculty tend to be larger on the right than on the left, while those of math and physics faculty exhibit the opposite pattern. He interprets his finding in terms of cerebral hemispheric dominance.

In Vino Veritas?

The story of amnesics' susceptibility to manufactured memories continues on p. 668, where Schacter et al. report the results of presentation of lists of related words on subsequent recognition. Normal subjects often fill in the blanks and misfire on novel related lures. This tendency decreases with repeated presentations of the same list, presumably as the subjects develop a more accurate memory for the details of the list rather than its general theme. The authors find that Korsakoff patients, by contrast, although starting off at low levels for both true and false recognition, tend to increase both with repetition, apparently relying mostly on a sense of gist unchecked by memory for the specifics. Non-Korsakoff amnesics, on the other hand, display a more muddied picture; the differences between the two groups may address the mnemonic role of the PFC and its degradation in Korsakoff's.

The Basis of Neglect

Parietal patients exhibit a fascinating flexibility in their choice of reference frames, neglecting sometimes the contralesional half of egocentric space and sometimes the corresponding halves of objects or scenes in their own coordinate bases. A possible ambiguity in scene-based neglect—whether the "vertical" axis is derived from the scene properties themselves or from gravity—is addressed by Karnath et al. (p. 680). By tilting patients in the dark and recording their eye movements, the authors find ocular exploration to be unaffected by orientation and conclude that the gravitational axis is unlikely to play a role in neglect.

Marangolo et al. (p. 704) explore exactly what is being neglected with a color and location priming paradigm: patients viewed priming stimuli followed by probe stimuli, each in one of three colors and each in either hemisphere. Stimuli in the contralesional field could not be primed at all but were nonetheless able to themselves prime ipsilesional targets, shedding light on the parietal lobe's interaction with the ventral stream and beautifully illustrating a distinction between attentive and inattentive processing.

Syntax Errors

An ERP component correlated with detection of syntactic incongruities in sentences appears in a different context on p. 717: Patel et al. compare brain waves produced by musically trained subjects listening to unexpected structure in both linguistic and musical phrases. The elicitation of the "P600" in both conditions suggests a more general syntactic role than a purely linguistic one.

Aha

Dominey et al. (p. 734) propose that sequence learning operates by two largely independent mechanisms, one that brainlessly memorizes superficialities and another that discovers underlying rules. This insight is supported by two connectionist architectures operating on mutually exclusive principles and by human trials in which subjects exhibited qualitatively different performance

depending on whether or not they were explicitly clued in to the sequences' deep structures.

Central Time

The basal ganglia and cerebellum have both been implicated in the timing of motor and sensory events. Penhune et al. (p. 752) address this issue of a central timing generator in a PET study of subjects engaged in motor mimicry of both visual and auditory sequences, finding relatively constant ganglial activity with increasing sequence complexity and novelty but increased cerebellar involvement as the sequences become less familiar. They suggest that the basal ganglia may be most involved simply in response production rather than timing per se, whereas the cerebellum may be more explicitly responsible for timing in sensation and action.

It's What You Do With It That Counts

The controversial dissociation between lesion patients' cognitive capacities for living and nonliving things is targeted by Mummery et al.'s PET study of normals (p. 766). Presented with written names of exemplars of both living things and artifacts, subjects assessed similarities of either the objects' colors or their typical locations. The authors report a pronounced activity difference between color and location consideration but only minor differences based on the objects' domains, arguing for a dissociation based primarily on the way the objects are processed rather than on their categories themselves.

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