New Research From Psychological Science

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The Insula and Evaluative Processes

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The insula has been implicated in evaluative and affective processes. New findings indicate that the insula may be broadly involved in integrating affective and cognitive processes. Participants rated the positivity and negativity of picture stimuli and how emotionally arousing they found the pictures to be. Volunteers with lesions of the insula exhibited progressively reduced arousal ratings for progressively more pleasant or unpleasant pictures than did volunteers with lesions of other brain regions. Volunteers with amygdala lesions showed reduced ratings for unpleasant stimuli.

Wouter van den Bos, Eric van Dijk, Michiel Westenberg, Serge A.R.B. Rombouts, and Eveline A. Crone

Young adolescents tend to be selfish, mainly thinking about themselves. Luckily, most of them grow out of this and eventually start thinking more about others. How does this shift take place? Volunteers ranging in age from 12 to 22 underwent fMRI scans while participating in the Trust Game (i.e., they were given money from a hypothetical partner and decided whether to share with the partner or keep everything). The results showed that with age, adolescents were increasingly sensitive to the perspective of the other player, as indicated by sharing more money with the partner, and this was associated with increased involvement of the left temporo-parietal junction, an area involved in social perspective-taking. In contrast, young adolescents showed more activity in the anterior medial prefrontal cortex, a region associated with self-oriented thought. These findings suggest that the asynchronous development of these neural systems may underlie the shift from thinking about the self to thinking about others.

Early- and Late-Onset Blindness Both Curb Audiotactile Integration on the Parchment-Skin Illusion

François Champoux, Olivier Collignon, Benoit A. Bacon, Franco Lepore, Robert J. Zatorre, and Hugo Théoret

Presenting a single somatosensory stimulus with two successive sounds can result in perception of two distinct touch sensations. This observation is the basis of the parchment-skin illusion, in which the sound generated by hands rubbing together results in a change in how dry or moist the palms feel, depending on how the original sound is altered (e.g., change frequency). Congenitally blind individuals are better at

ignoring irrelevant auditory or tactile stimuli while completing an auditory or tactile task. In the current experiment, volunteers with normal vision experienced a robust parchment-skin illusion, while the majority of early- and late-onset blind volunteers did not report changes in their perception of how dry or moist their palms were. These findings suggest that vision may play an important role in developing and maintaining the integration of auditory and touch information.

Escalating Slant: Increasing Physiological Potential Does Not Reduce Slant Overestimates

Dennis M. Shaffer and Mariagrace Flint

People are not very good at estimating the degree a hill is sloped: Research has shown that people overestimate the slant of hills by between 15 and 20 degrees. Studies have suggested that people's perception of the slant of hills is related to how much motor effort the hills would require to climb–the more difficult the climb, the greater the overestimation of the slope. However, new findings contradict this explanation. Volunteers were asked to verbally estimate the slant of a flight of stairs and an escalator from the top or bottom. There was no difference between overestimation of the stairs' slope and the escalators' slope, even though stairs require more effort to climb than escalators.

Direct Electrophysiological Measurement of Attentional Templates in Visual Working Memory

Geoffrey F. Woodman and Jason T. Arita

How do we find something we are looking for? New data support the hypothesis that when we want to find something, we hold an image of it in our visual working memory. Volunteers' brain activity was measured as they looked for an object in a complex scene. Results indicate that visual working memory mechanisms may be involved in maintaining attention for a specific target during a search task. These findings have important clinical implications–for example, working memory problems may be mistaken for attentional deficits.