

Puzzles of Imagery

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There can be no doubt that we have mental images: at times I see my friend's face, hear the Julliard play Bartok's Fourth Quartet, taste a mustard-cream sauce on a lamb chop, smell the salt air at Cisco Beach, feel the pressure of a hand against mine, shiver from the cold of Wisconsin in February, run with the pack in the Falmouth Road Race, and my head spins from too much red wine all in the absence of any corresponding stimulus energy impinging on my sensory surfaces. Mental imagery is an important aspect of private experience, and of the life of the mind to which psychologists have devoted their lives as scientists. It is not surprising, then, that Professor Hilgard can document a continuous thread of concern with mental imagery throughout the century-plus of American psychology,

from the structuralists to the behaviorists and now to the cognitivists.

The question of mental imagery brings to the fore one of the central epistemological problems of psychology and philosophy: how do we obtain knowledge of other minds? Or, put more concretely, how do we know when a person "really" has a mental image, and what that image "really" looks like? The behavioral tradition in psychology, as epitomized by Skinner (1977), rejected imagery as a topic to study largely because images could not be publicly observed and, one might suppose, because in principle they could not be experimentally manipulated. But the advent of chronometric methods for the study of mental events has changed all that, and thanks to the efforts of Shepard (1978), Kosslyn (1981), Pinker (1980), and others, we now have a set of paradigms by which the nature of mental images can be inferred from overt behavior. Some important methodological problems remain unaddressed, the demand characteristics of imagery experiments being one (Orne, 1973); and the problem of the "reality" of mental images is still central to discussions of eidetic imagery (Haber, 1979) and hallucinations (Sarbin & Juhasz, 1978).

Imagery poses a number of challenges to cognitive psychology. Among the most prominent of these is the debate over whether mental images are represented in the store of permanent memories, a controversy which Anderson (1978) has plausibly argued may never be satisfactorily resolved. It is likely that rather than being directly represented *in* memory, images are constructed *from* memory, as anticipations of forthcoming stimulus input forming a portion of the perceptual cycle (Neisser, 1976). Eidetic images and associated phenomena such as screen and flashbulb memories (Freud, 1899; Brown & Kulik, 1977), however, because of their ostensibly veridical nature, appear to pose problems for a conceptualization of memory as the product of reconstructive activity.

Hallucinations pose problems of a different sort. Assume for the purposes of argument that all images, even eidetic ones, are the products of constructive perceptual activity. This proposition must apply to hallucinations as well: no external force thrusts a picture before the mind's eye. What appears to make hallucinations special is that *they are not perceived as images* (Jaynes, 1976). Phenomenologically, they are projected externally rather than internally; and unlike the sorts of images typically studied under laboratory conditions, those who experience them do not perceive themselves as engaged in active construction of the image. While it is certainly possible to conceptualize this perception of involuntariness in terms of attribution theory, another promising avenue for investigation is charted by the neodissociation theory of divided consciousness announced by Professor Hilgard (1977). Following earlier statements by Janet and Prince (Ellenberger, 1970), Hilgard proposes that under some circumstances the cognitive subsystems involved in such functions as forming images can be divorced from the control of a central executive system.

Hallucinations are commonly encountered in the clinical consulting room, as symptoms of organic brain syndrome or functional psychosis, but the conditions do not permit them to be studied under anything approaching rigorous experimental control. Such control may be achieved in studies of hypnotic hallucinations and other forms of imaginative involvement, giving these topics added relevance to contemporary cognitive science (Norman, 1980).

The functionalist tradition in American psychology represented by Professor Hilgard requires more than scientific study of the nature of mental images and the processes by which they are produced. It requires some attention to the adaptive significance of these mental phenomena. He has cited instances where a capacity for vivid mental imagery seems to underlie performance in hypnosis and on certain tasks involving memory. One is naturally led to wonder whether the findings of chronometric studies of imagery, or of nonverbal memory processes, would be changed significantly by the selection of subjects with appropriate imaginal abilities. Interestingly, few chronometric investigations of imagery have made any effort to select subjects on the basis of their scores on the Betts QMI or related individual-difference measures. Whatever the case may be, the capacity to produce and control vivid mental images would seem to be a cognitive-behavioral construction competency (Mischel, 1973) of considerable potential importance to such topics in personality as self-control and creativity. As such, imagery deserves the attention of cognitively oriented personality psychologists, as well those whose concerns lie strictly with cognition.

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Imagery and Imagination in American Psychology

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The sensationist psychology described images as revived sensations and in so doing stressed the passive nature of reproductive memory images to the neglect of the often more interesting productive use of imagination. The tendency has persisted, and has led to some controversy, for example, in the discussion of eidetic images. Several promising lines of development in the study of imagery and imagination have emerged with the cognitive revolution in psychology and the reduction of the behaviorist prejudice against subjective phenomena. The study of individual differences continues to be an important framework for work in various topical fields such as learning and memory, hypnotic performances, creativity, and eidetic imagery. The new work on these varied topics shows that within contemporary psychology a strictly scientific approach to imagery is both possible and rewarding.