

The Behavioral and Brain Sciences

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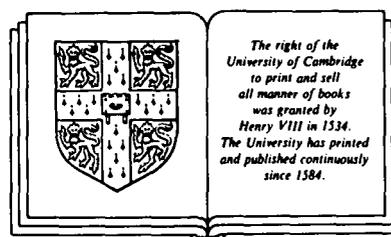
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Multiple Book Review of *The Modularity of Mind*

Jerry A. Fodor, Massachusetts Institute of Technology

The modularity of mind proposes an alternative to the "new look" or "interactionist" view of cognitive architecture that has dominated several decades of cognitive science. Whereas interactionism stresses the continuity of perceptual and cognitive processes, modularity theory argues for the "informational encapsulation" of perceptual processes from much of the background knowledge that is available to cognition. In this respect, the postulation of modular systems continues a historical tradition that has roots in faculty psychology and, particularly, in the work of Franz Joseph Gall.

With Commentary from D Caplan; CR Gallistel & K Cheng; H Gardner; S Glucksberg; C Glymour; S Grossberg; J Kagan; PR Killeen; J Morton; S Scarr; R Schank & L Hunter; MS Seidenberg; RJ Sternberg; and others.

Pain and behavior

Howard Rachlin, State University of New York

Three theories of pain – physiological, cognitive, and behavioral – each explain, in a different way, the existence of two types of pain, "sensory" and "psychological." According to physiological theory and cognitive theory, both types of pain are internal processes. According to behavioral theory, both types of pain are overt behaviors. Behavioral theory explains the phenomena of pain at least as well as the other two theories do. There is no basis for the argument that, because it cannot explain various aspects of pain, behaviorism cannot account for mental phenomena.

With Commentary from WE Fordyce; HM Genest; G Graham; J Jaynes; P Kitcher; H Lacey; WI Matson; R Melzack; H Merskey; G Pepeu; UT Place; CP Shimp; CD Turk & P Salovey; PD wall; and others.

The biology of bird-song dialects

Myron Charles Baker and Michael A. Cunningham, Colorado State University

We give an account of the principal issues in bird-song dialects: evolution of vocal learning, experimental findings on song ontogeny, dialect descriptions, female and male reactions to differences in dialect, and population biology. We present an integrative theory of the origin and maintenance of song dialects. The few data available suggest that large, regional dialect populations are genetically differentiated; this pattern is correlated with reduced dispersal between dialects, assortative mating by females, and male-male exclusion. "Subdialects" may be formed within regional dialects, are usually sung by a small number of individuals, and may represent vocal mimicry among adjacent territorial males. The relative importance of genetic and social adaptation may lead to the emergence of subdialects.

With Commentary from RJ Andrew; LF Baptista; EA Brenowitz; JK Chambers; RW Fasold; PJ Greenwood; AD Grimshaw; DE Kroodsmá; PK McGregor; F Nottebohm; L Petrinovich; W Shields; CT Snowdon; RM Zink; and others.

The organization of human postural movements: A formal basis and experimental synthesis

Lewis M. Nashner and Gin McCollum, Good Samaritan Hospital

A scheme for understanding the organization of human postural movements is developed. Neural organizational hypotheses constrain the number of combinations of muscle contractions and associated movement trajectories for performing postural corrections. It is predicted that postural movements are composed of muscle contractile strategies derived from a limited set of distinct contractile patterns. A complementary organization of postural movements into combinations of distinct strategies simplifies the interpretation of sensory inputs. Predictions are compared with observations on normal subjects and patients with known sensory and motor disorders. Discussion focuses on implications and on the areas needing further experimentation.

With Commentary from CC Boylls Jr; F Delcomyn; G Goldberg & HC Kwan; VS Gurfinkel & KE Popov; JM Hollerbach; R Jaeger; TDM Roberts; RA Schmidt; GE Stelmach & C Worringham; E Thelen; R Thom; and others.

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AR Jensen, "The nature of the black-white difference on various psychometric tests: Spearman's hypotheses"

D Holender, "Semantic activation without conscious identification in dichotic listening, parafoveal vision, and visual masking"

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