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1982. 496 pp. \$32.50

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The central question of the book is, of course, What is motivation? It is Epstein's chapter that gives the most rigorous (and refreshing) answer. In comparing instinct and motivation Epstein notes several similarities between the two constructs. Both use innate patterns for reaction and action, as well as acquired components. Both are organized sequentially into appetitive and consummatory phases. Both are drive induced and (may) contribute to homeostasis. The conjunction of three other characteristics, however, is appropriate only to motivation: (a) The behavior can be individuated rather than being uniform within a species; (b) it is anticipatory of goals; and (c) it is accompanied by the expression of affect. These characteristics can occur singly in simpler behavior; it is the clustering of the three that differentiates motivated behavior. Pfaff's introductory chapter, which purports to provide definitions and distinctions among motivational concepts, refers to a single criterion for labeling motivation: a change in behavior in the face of a constant stimulus situation. According to Epstein, however, such a criterion is appropriate to both motivation and instinct. Also, it would

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The importance of affective elements in motivated behavior is emphasized not only in discussions of the ingestive, reproductive, and thermoregulatory behavior patterns themselves but also in a section of the book on approach versus avoidance. Here we find theoretical discussions of opponent motivational mechanisms, the behavioral situations in which these can be observed, and the physiological mechanisms that appear to mediate them (Solomon; Halperin and Pfaff; and Stellar). Some of the recurrent questions that are addressed are the following: (a) Is there a final common pathway for reward and/or for aversiveness shared by diverse motivated behavior? (b) Are the various measures of a presumed single construct in fact highly correlated (Miller)? and (c) What is the relation between "pure" discriminative aspects and affective aspects of sensory processing (Mayer and Price)?

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Childhood Temperament Research Reaches Its Adolescence

Ciba Foundation
Temperamental Differences in Infants and Young Children: Ciba Foundation Symposium 89

London: Pitman, 1982. 320 pp.
\$35.00 (£22.50)

Review by

H. Hill Goldsmith

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Activity, impulsivity, attention span, distractibility, emotionality, intensity, irritability, persistence, reactivity, soothability, and timidity—these, among others, are the elements of "temperament," one of the topics that has most recently captured the imagination of interdisciplinary researchers who are concerned with developmental processes. Although the concept has ancient roots and had other pre-1960s proponents such as Gesell and Diamond, most of the current flurry of interest may be traced to the studies by Alexander Thomas and Stella Chess, principals at the symposium that yielded the book under review. It seems that temperament research is on the upswing because the construct has been implicated (by persuasive argument if not always by rigorous empirical findings) in such important applied areas as caregiver-infant social interaction, childhood behavioral disorders, and early educational adjustment. The 18 contributions to this 1981 Ciba Foundation symposium afford us a glimpse at the state

of developmental research on temperament; some of the contributors attempt to clarify the role of temperament in the aforementioned applied areas, and the rest of them ask, "Just what is temperament, anyway?"

The issue of definition is a prime source of dispute. My nominee for the best definition offered is that by Bell and Waldrop, who deem that temperament is "behavior involving regulation of arousal, and its expression through qualities of emotion, that shows cross-time and situational predictability" (p. 206). Note that *predictability* of behavior, not rigid consistency, is postulated. Stevenson and Graham hold that temperament "represents the part of personality that tends to be manifested in infancy, and which is assumed to have a moderately high degree of stability and to be largely genetically determined (p. 37), a definition reminiscent of that by Buss and Plomin (1975). It is, however, Thomas and Chess's definition of temperament as behavioral *style* that enjoys the widest

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