

E2s used in conditioning experiments are multifaceted events and that their sensory and affective qualities may be represented independently. Whether an E1 or signal forms an excitatory link with one or both of these sorts of representations depends on several parameters of the conditioning situation and has important implications for the way in which the animal integrates distinct conditioning episodes. In E1 – no E2 learning, the author argues that only the affective character of the “no E2” is encoded, e.g., a signal for “no food” is said to acquire the capacity to evoke only the representation of an aversive state. When reinforcement is response-dependent, unless there is considerable overtraining, the acquired associative structures are said to be like those formed in the response-independent case (e.g., an excitatory link between the representations of lever-pressing and food), but response production is a more complex process because the associative representation has to be integrated with a motivational proposition and command (“I want food, so I should perform an action that produces food”) in order to produce a response.

Chapter 4 discusses mechanisms of learning: how the appropriate – and only the appropriate – conditions lead to the formation and strengthening of the representations discussed earlier. Recent theories are placed within an information-processing framework, in which joint processing of E1 and E2 is said to be necessary for the formation of an association between them. A distinction is made between accounts that posit that the processing of an event on a conditioning trial depends upon the extent to which it is already predicted and those that posit that processing of an event depends on the extent to which it predicts other events.

Theory-building in the area of simple associative learning has boomed in the last 10 years. Dickinson has been able to describe the host of developments in this area so effectively in a short book because he keeps the important theoretical questions in the foreground and only draws on experimental outcomes that lead us towards answers to these questions. The careful reader who takes the time to work through Dickinson’s arguments will be rewarded with a clear picture of the present state of our understanding of simple associative learning.

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### **Freud versus Adler and Jung. Discovering the Mind (Vol. 3)**

By Walter Kaufmann. New York: McGraw-Hill, 1981. 512 pp. \$17.95.

Walter Kaufmann, late Stuart Professor of Philosophy at Princeton University, was well known as an interpreter and translator of German thought. Among his many books is the trilogy entitled *Discovering the Mind*. The first two volumes dealt with Goethe, Kant, and Hegel; Nietzsche, Heidegger, and Buber. For each man, Kaufmann judged whether or not he advanced our knowledge of the mind. Some did, but others, despite their fame, did not, in Kaufmann’s opinion. His conclusions were based on exhaustive

reading and analysis of each man's writings in the original language of publication, not translations.

Kaufmann also read the original publications for the current volume. He found that he could not always agree with the so-called standard translations, and he notes that in some cases translations were made by people known to be pro or anti the author being translated. As he states clearly, he has his own bias—for Freud, against Adler and Jung (note the *versus* in the title)—based on his carefully reasoned interpretations of the original books, articles, letters, etc.

It is impossible to review this scholarly book briefly. Kaufmann argues strongly that Freud, though not always right, was one of the outstanding contributors to our knowledge of the mind. He provides a list of what he thinks are Freud's major contributions, 10 in all. He finds little originality in either Adler or Jung. Much of their reputations are based on their opposition to Freud.

Whether or not one agrees with Kaufmann, his analysis is a contribution to history. The book also includes a number of illustrations, photographs, letters, etc., several not reproduced before.

C.P.D.

### **Image and Mind**

By Stephen M. Kosslyn. Cambridge, Mass: Harvard University Press, 1980. 500 pp. \$20.00.

In tracing the history of the study of cognitive processes in experimental psychology, we find two epochs that are separated by a sizable gap. The concerns of psychologists in these two periods were similar, but their methodologies very different. The early cognitivists, who go back at least as far as Wundt's laboratory, produced introspective self-reports of their cognitive processes. The interpretability of these data relied on the soundness of the assumptions underlying the introspective technique. When the assumptions were shown to be untenable, the old cognitive psychology faltered, and an anticognitive behaviorism took root. A new cognitive psychology, having overcome the behaviorists' objections to theories of internal processes by adopting the electronic digital computer as a guiding metaphor, emerged in the last 20 years. Intelligent organisms were viewed as information processors that could be analyzed and understood with the same constructs and terminology that were found useful in designing a computer. Introspection was inessential to the new cognitivists, for just as a computer could be studied or measured without any introspective help from the machine, so too—presumably—could a human be studied without any special assistance. The subjectivity of introspection, then, gave way to the objectivity of reaction time.

There are several senses in which Stephen Kosslyn's *Image and Mind* represents a blend of the new and old cognitive psychologies. Kosslyn pro-