

sumed to be outside its realm. These include motivational issues, resistance to extinction in animals, biologically based motives, personality processes, and such practical concerns as marketing, personnel relations, and politics. However, many of the extensions consist of demonstrations that usual responses are modified and often reversed when dissonance is presumed to be operating. For instance, it has been shown that procedures designed to arouse dissonance can alter a motivational state like hunger or thirst. Thus, dissonance theory often is not shown to be an alternative explanation of commonly observed psychological phenomena; instead, it is shown that dissonance-like processes alter the more usual kinds of behavioral patterns.

Perspectives on Cognitive Dissonance is clearly partisan; the authors quite obviously believe in the validity of the theory of cognitive dissonance. As "true believers," perhaps they can be excused for an overemphasis upon the confirmatory aspects of dissonance research, but the reader should be alert to certain tendencies on their part. First, there is a strong tendency to dismiss disconfirmatory or nonconfirmatory (negative) findings on the grounds that dissonance must have been reduced by some method other than the one examined in the research. Second, the methodologies employed by researchers obtaining negative results are analyzed much more critically than the methodologies that produce confirmatory (positive) results. In fact, the criticisms of "negative" studies are sometimes so devastating that the reader may also find it difficult to accept the results from studies that yield positive results. Finally, competing theories, with the exception of Bem's self-perception theory, are given only cursory treatment. No serious consideration is given to the possibility that dissonance-like effects may be produced by some process other than dissonance.

All in all, however, *Perspectives on Cognitive Dissonance* is a moderately good book. It is comprehensive, clearly written, and relatively free of error. Although the book will undoubtedly be of greatest interest to those who have a strong interest in dissonance theory and research, it can be read with profit by most psychologists and by persons in related disciplines such as sociology, political science, and marketing. It is a major statement concerning the theory of cognitive dissonance that few persons interested in the theory will want to miss.

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Composites

Mammalian Chimaeras. ANNE McLAREN. Cambridge University Press, New York, 1976. vi, 154 pp., illus. \$19.95. Development and Cell Biology Series, 4.

Just 20 years ago I observed that, in the absence of calcium, the blastomeres of mouse embryos failed to compact together in the essential prelude to the formation of a morula and, subsequently, a blastocoel. Compaction promptly followed when calcium ions were added, so I wondered if blastomeres from two mouse zygotes could be combined to form a composite individual. Mangold's experience with newt embryos suggested that monsters would be the likely outcome unless strict spatial relations were maintained, but in 1961 Tarkowski produced several normal, clearly marked chimaeras by simply aggregating two whole morulae. This finding was soon confirmed by Mintz, using a simplified technique in which the zona was dissolved with pronase.

These experiments revealed that mammalian embryos were much more malleable than those of lower animals. No doubt this is due to the absence of a burden of yolk, allowing greater mobility, and to the bypassing of the restrictive process of gastrulation by invagination. These experiments also opened a new era of purely mammalian (mouse) embryology in which many of the recently cataloged pigment, protein, and chromosome markers were exploited. Progress in this fascinating and expanding field has been critically and accurately summarized by a major contributor, Anne McLaren.

McLaren introduces chimaeras by their mythology and then gives current definitions. The term "allophenic," which was coined by Mintz, is rejected on two counts of priority, Tarkowski's earlier use of "chimera" and Hadorn's use in 1945 of "allophenic" for an entirely different purpose. To this may be added the objection that spontaneous or induced chimaeras of the same phenotype should, by the same logic, be called "homophenes." Thus Mintz's wish that the term chimera should rest in peace like its mythological forbear when slain by Belerophon will probably not come to pass.

The book includes chapters on techniques, early development, sexual development, pigment patterns, other morphological characters, blood and immunology, tumors, chimaeras versus mosaics, distribution of cell populations, spontaneous chimaeras and, finally, some "perspectives." The presentation is

clear, and I frequently read McLaren's account with greater understanding than I had the original papers. The number of personal communications quoted indicates the high regard many workers have for the author, but it does not convey the generous encouragement she has frequently given. The only blemish I found, and in both copies to which I had access, was the omission of the last page of references, which, unfortunately, contained the authors beginning with W.

McLaren puts forward some interesting suggestions for future uses of chimaeras, but she did not anticipate the spectacular report, by Mintz and Illmense, of effective colonization of the gonads of a chimera by germ cells derived from Stevens's teratocarcinoma. The way is now open to propagate mammals after DNA modification and cloning (see R. Pollack, *Science* **194**, 1272 [1976]). For those who are interested in this prospect, the book will be an essential guide to the methods and interpretation of research with chimaeras. It should also be a handbook for those who wish to use chimaeras and other appropriate methods to unravel the fascinating processes of mammalian development.

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Solution Chemistry

The Hydrolysis of Cations. CHARLES F. BAES, JR., and ROBERT E. MESMER. Wiley-Interscience, New York, 1976. xxii, 490 pp., illus. \$29.95.

The formulas of and charges on hydrolyzed species affect coagulation, adsorption, solubility, complex formation, and redox potentials. The subject of this book is therefore of interest or potential interest to scientists ranging from physical chemists specializing in ionic solutions to environmental scientists concerned with the chemical fate of metals in natural waters and biologists concerned with the transport of metals in living systems.

The authors' objectives were to assemble data on water-soluble cationic hydroxides and oxides into a convenient form and to "gain some understanding of why metal ions produce such a wide variety of hydrolysis products." The book succeeds in the first objective and takes an important step toward the second. It also provides a review of the methods for obtaining and interpreting data on hydrolysis reactions.