



BOOK REVIEWS

Cognitive Processes in Maturity and Old Age

by Jack Botwinick, Ph.D., 212 pp., Springer
Publishing Co., New York, 1967. \$5.75

The role of maintenance and decline of cognitive behavior is so important in gerontology that most other psychological and social phenomena of aging must be seen in this context. The author therefore attempts to clarify the general theoretical problems involved in the study of cognitive functioning as they apply to aging. He approaches the problem by reviewing methodological problems in the study of intelligence and problem solving and focuses upon the research literature on response acquisition and loss to assess the extent of current information on intellectual functioning in the elderly.

The first three chapters are concerned with the concept of intelligence and its modifiers as well as the methodology used for the study of intelligence and learning. The author is most knowledgeable on the latter topic and the chapter on measuring learning is a must for anyone studying learning in the adult. His treatment of intelligence and general methodology, however, reflects ignorance of the more recent developments in multivariate studies and methodology. Botwinick hints at the problem of nonequivalence of age changes and age differences, but he curiously does not fully discuss available models and experimental strategies which bear upon the resolution of differential findings from cross-sectional and longitudinal studies.

The next three chapters contain a full discussion of the status of work on

learning, memory, and forgetting in the aged. Performance is seen to show marked decline, but the evidence thus far is unclear whether such decline is due to intellectual or motivational factors. Indeed, there is doubt whether learning ability *per se* shows more than minimal decrement. Some authors (notably Harry Kay in Great Britain) would argue that in the aged the study of learning should really be seen as that of memory and forgetting. Botwinick differs on this point and sees value in separate treatment. Nevertheless, retention is closely linked to acquisition. Botwinick concludes that the elderly need to have information paced more slowly in order to have time to register it. Once acquired, moreover, memory decay appears to be more rapid in the elderly. Botwinick also discusses the interference and neurochemical theories of forgetting, emphasizing the close interaction of behavioral and biologic approaches to the study of basic learning processes.

The last substantive chapter deals with thinking, problem solving, and creativity. Here the evidence suggests that older people produce fewer abstract concepts. However, the well-educated elderly tend to maintain their ability to conceptualize. It seems clear that creativity tends to decline with age. Botwinick argues that just as noncognitive factors seem to mediate lowered learning ability, so do factors involving poor physical health and lowered motivation interfere with creative performance.

Botwinick's final chapter is a mas-
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terly job of summarizing the evidence on age changes in cognitive functioning. He concludes that "the general trend in cognitive functioning is downhill" but that "when decline does begin, it most often is gradual, with severe incapacity not setting in until very late, if at all." Moreover, he reminds us that "the elements of wisdom and sagacity are not represented in scientific data" even though "older people may develop a degree of wisdom and sagacity not likely to be found in young people."

In spite of Botwinick's conclusions, the evidence on age changes in intellectual functions seems at best inconclusive. While the data reviewed may suggest marked age decrement, the evidence thus far is clear primarily on the decrement in speed of response and on marked differences in level of ability between generations. But Botwinick does yeoman's work in pointing to the many methodological problems, even though the quality of his account varies considerably according to his familiarity with the specific subject matter.

Professor Botwinick is one of the central members of the small group of psychologists who focus their attention primarily upon the phenomena of aging, and he has spent most of his professional life investigating learning and memory in the aged. No serious student of aging can afford to miss this concise but authoritative presentation of the current state of the scientific evidence on cognitive functioning in the mature and aged.

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Ferment in Medicine

by Richard M. Magraw, M.D., 272 pp., W. B. Saunders Co., Philadelphia, 1966. \$6.50

This is a book by a thoughtful physician who is puzzling about the changes

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no other digoxin



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Contraindications: There are no absolute contraindications to digitalis. However, in ventricular paroxysmal tachycardia or ventricular fibrillation, it should be used *only* in refractory cases not induced by digitalis intoxication and if heart failure has developed.

Precautions: If the patient has been given digoxin during the previous week, or any other less rapidly excreted drug of the digitalis group during the previous two weeks, the dose of 'Lanoxin' brand Digoxin must be reduced accordingly. Because of impaired renal function and excretion in elderly patients, they frequently require lower than recommended doses. Potassium loss in patients sensitizes the heart to digitalis intoxication even with recommended doses. The diuretic agents as well as electrolyte manipulations by the physician are major causes of potassium depletion in cardiac patients. Under these conditions it may be necessary to reduce the usual dosages of 'Lanoxin' brand Digoxin during digitalization and maintenance. Digoxin is usually ineffective in cases of cardiac failure due to mechanical causes which are independent of myocardial diseases, e.g., cardiac tamponade, or to disorders not primarily of cardiac origin,