

sampling techniques to research on population. One of the first non-military computers was ordered for use in the 1950 count.

Perhaps the most important conclusion that emerges from this book is that numbers are not neutral. The process of counting is subject to errors; decisions must be made about what and what not to count. Then the process of deciding what the figures mean and what action they suggest begins. Anderson reminds us that we must always be sensitive to the process by which statistics came into being. Categories reflect conscious choices of the time about what is important. Those who ignore this lesson use the records of the past at their own peril. Those who assume that the records of today are free of bias are equally foolish.

This book is worth reading not only for those who work with census data but also for anyone concerned with the history of the United States or the development of modern social science. It does, however, leave room for additional studies. No mention is made of the lengthy experience Americans had in taking censuses in the colonial period. Some of the early counts were more sophisticated than the first federal census. Many states took censuses of their own in the 19th century, and there is a need to trace the connections between those counts and the national enumerations. Finally, Anderson has focused on the development of the decennial census, touching on other activities of the Census Bureau, such as agricultural or manufacturing censuses, only when immediately relevant. This is another important part of the history of statistics that has gradually been emerging over the last decade.

ROBERT V. WELLS
*Department of History,
Union College,
Schenectady, NY 12308*

Playful Conceptions

The Child's Construction of Economics.
ANNA EMILIA BERTI and ANNA SILVIA BOMBI.
Cambridge University Press, New York, and Editions de la Maison des Sciences de l'Homme, Paris, 1988. xii, 236 pp. \$44.50. European Monographs in Social Psychology. Translated from the Italian edition (Florence, 1981) by Gerard Duveen.

In this book we are given an opportunity to enter the world of children and explore their incipient knowledge of some rudimentary economic principles that adults in our society take for granted. There is no ques-

tion that without some degree of understanding in this area life in a modern society cannot begin to be comprehensible. How then do children acquire this necessary social knowledge? Here, for the first time, is a full-length empirical investigation that records children's thinking on economic topics and provides some tentative answers to this question.

This book is a highly readable translation of the original Italian edition with some added material that draws on recent research both in the United States and abroad. It is a rich collection of studies based on interviews with 916 Italian children, ages 3 to 14, of middle-class background. The children were asked questions about the following topics, each of which formed the basis of a separate study: (i) work and remuneration; (ii) how one becomes a worker or owner; (iii) the concept of "the boss"; (iv) how one gets money; (v) the concepts of "rich" and "poor"; (vi) the bank and interest; (vii) production and distribution of goods; (viii) buying and selling; (ix) differences in the price of goods; (x) determinants of price; and (xi) ownership of factory, farmland, and bus. Three additional studies complete the empirical section: replications of study iv with children of factory workers and of merchants, and a replication of study vii in a region where the children could observe the entire production cycle of merchandise.

In all these studies the investigators categorized the responses into three to five levels according to cognitive criteria of adequacy and complexity. Invariably they obtained highly significant correlations with age in the distribution of response levels. In a summary chapter the authors present what they call a developmental synthesis of children's conceptions of economics. Following a Piagetian framework they suggest a sequence of four periods: pre-operatory (ages 3 to 6), intuitive (ages 6 to 7), concrete operatory (ages 7 to 10), and formal operatory (ages 11 to 14). Unfortunately these periods are not aligned with the response levels of the studies; moreover, in each study both levels and age groups are different. Using a best estimate from the available tables and dividing the children into four age groups, I obtained the following response distribution: for the 218 children age 3 to 5, 66% of responses were pre-operatory, 30% intuitive, and 4% concrete; for the 253 children age 6 to 7, 24% of responses were pre-operatory, 51% intuitive, 24% concrete, and 1% formal; for the 349 children age 8 to 11, 4% of responses were pre-operatory, 25% intuitive, 53% concrete, and 18% formal; for the 96 children age 12 to 14, 1% of responses were intuitive, 28% concrete, and 71% formal.

These results are in close quantitative agreement with studies reported in other Western countries and thus are a valuable contribution to and extension of the developmental literature. The direct application of Piagetian stages to levels of economic understanding is not altogether convincing, however, particularly the concrete-formal distinction and the suggestion that the understanding of profit and interest by itself indicates formal operations. What these levels or stages actually represent and how they can be explained are not adequately elucidated by mere age differences and, as is shown above, age overlap. They depend on a number of factors, such as general logical development (studied by Piaget and stressed by the authors), exposure to environmental models (probed by the replication studies with no clear results), and specific learning (briefly discussed by the authors, who present some positive results). Other factors, not usually mentioned, are attitude, interest, and affect.

What is striking about children's responses is their "childish" quality, even at ages 10 to 12, that is, several years after the development of the first mature logical operations around ages 6 to 7. For example, a 12-year-old girl thinks the money a factory owner makes is not enough to pay the workers "because . . . he gets very little, not much for so many workers, the plastic bags which they make don't cost very much at all" (p. 148). Is it farfetched to suggest that these children do not yet *want* to give up their childish, playful conceptions of a human society where personal desire determines an action and fulfillment of desire is unproblematic? Consider these comments of preschool children concerning bus drivers: they come to be driving "because the mummies have to go out" (p. 159); they could not stop being drivers "because when someone has to get on a bus . . . they couldn't and so they'd have to get off" (p. 62). It is not surprising that it takes some years for these children to accept the impersonal qualities of monetary exchange and commodity production—just as it took a long historical development to reach the present economic situation. How would children in economically developing or in socialist countries respond to these questions? I think this is an area in which only genuine cross-cultural studies of the development of both cognition and attitudes can shed light on the various factors contributing to the acquisition of socially mature economic conceptions.

H. G. FURTH
*Department of Psychology,
Catholic University of America,
Washington, DC 20064*