ANNOTATIONS

INTRODUCTION TO DEMOGRAPHY[1]

WRITTEN primarily "to introduce students who are preparing for the examinations of the Society of Actuaries to the methods of demography," this volume is certain to have a wide audience among population students and research workers, in view of the pressing need for a comprehensive textbook on methods of demographic research. Lacking competence to assess its usefulness to actuaries and their students, I propose to consider the book from the standpoint of this more general interest—not, however, with the intention of criticizing its appropriately limited objective.

To begin with, INTRODUCTION TO DEMOGRAPHY will not, by itself, serve to introduce anyone to demography who lacks a knowledge of the life table, since the chapters on the life table and mortality projections presuppose some knowledge of actuarial technique. Other materials presented in advanced rather than elementary language include the mathematics of stable population theory and the logistic growth curve. The remainder of the book, however, is on a level appropriate for students with a rudimentary background in population and statistics, and an instructor could, of course, substitute readings in other works for the difficult parts. The exposition throughout is highly condensed, but lucid even where it is not elementary. There are few examples of computational procedures. Evidently these are presumed to be self-evident from the formulas or verbal outlines of techniques, but in many cases one must consult original sources—which are referred to in abundance—for the necessary

[1] Spiegelman, Mortimer: INTRODUCTION TO DEMOGRAPHY. Chicago: The Society of Actuaries, 1955. Pp. xxi + 309. $6.00.

details of procedure. The instructor using this book for a text must be prepared with a liberal supply of examples.

In scope of coverage and balance of treatment Spiegelman's book is more satisfactory than the recent texts on demographic methods by Cox, Jaffe, and Wolfenden. Each of these authors, on the other hand, develops certain topics much more fully than does Spiegelman. Referring principally to statistics of the United States, incidentally to those of Canada, the twelve chapters cover the historical background of demographic statistics, collection of census statistics and vital statistics, errors in these statistics, measures of mortality, construction of life tables from general population statistics, mortality projections, morbidity data, statistics of families (formation, composition, dissolution), measures of fertility and reproduction, population distribution (including internal and international migration), population and establishment data on the labor force, and population estimates and projections. There are numerous, up-to-date illustrative tables on population trends and characteristics in the United States, many of them drawn from post-1950 Current Population Survey reports. Interpretations of these data, however, are sketchy, where offered at all.

The book does little to clarify the proper scope of demography. Spiegelman states at the outset that "Demographic statistics deal with the quantitative aspects of the distribution, characteristics, and growth of the population of a community, whether a village, a nation, or the entire world." But later he restricts his treatment of the working population to "demographic statistics" to the neglect of "economic features," without explaining why statistics of family or personal income are less "demographic" than, say, statistics of unemployment. One would think that actuaries concerned with the money value of a man would find uses for the new census data on income. Again, one can rationalize only in terms of the special interest of the actuary the inclusion of an excellent treatment of morbidity as contrasted to the exclusion of any treatment of population composition by educational attainment, religious affiliation, and those biological and psychometric characteristics that figure in discussions of so-called population quality.

The discussion strays into socio-economic theory but rarely.

There is, however, one paragraph on optimum population, strangely placed at the end of a section on "national estimates and projections." Here Spiegelman poses as a barrier to the measurement of the optimum the circumstance that "most economic or social indicators that have been considered—such as the level of real wages and unemployment—are themselves dependent upon population size." If some such indicators were not "dependent upon population size," the idea of optimum population might well be relegated to "philosophic writings," where the author evidently feels it belongs. But the notion of an optimum has been a fruitful lead in scientific theory and research, precisely because it has stimulated students of population to investigate the ways in which social and economic indicators do vary with population size, considered either statically or dynamically.

For many problems the author describes alternative techniques and includes a statement of the major variations among them in assumption and procedure. The reader, therefore, gets an impression of the variety of tools at his disposal, but may sometimes feel a need for more guidance when faced with the necessity of determining for himself just which technique is best "adapted to the problem at hand." For example, several methods of constructing abridged life tables are listed, but with no information on their relative accuracy. By and large, an agnostic position is taken with respect to the relative merits of the many new measures of fertility and reproduction advocated in recent years.

Another illustration of the failure to sharpen issues as between alternative techniques is afforded by the treatment of standardized (Spiegelman prefers "adjusted") death rates. It is observed that "the choice of the standard population is subjective and may influence the comparison of the adjusted rates. However, this difficulty is not of great significance as long as the standard chosen is not too far removed in its population characteristics from the communities being compared." But the need for standardization arises, in part, from the very fact that at least some of the "communities being compared" are sufficiently "far removed" from the standard to make a difference in their crude rates. The treatment does nothing to dispel

the conventional misconception that the "indirect method" of standarization is merely a substitute for the intrinsically more desirable "direct method." It is noted that "the adjusted rate computed by the indirect method is dependent upon the age distribution of the community. This is not the case with the age-adjusted rate computed by the direct method." This statement, true as far as it goes, is misleading in its incompleteness. Bearing in mind that the purpose of standardization is to facilitate comparisons of two or more communities, one must recognize that, in general, the difference between the crude rates of two communities is a function of *both* the age distribution and the mortality schedule of *both* communities. (This point of view is developed in a forthcoming paper, "Components of a Difference Between Two Rates," by Evelyn M. Kitagawa.)

The discussion of standardization will gain in sophistication only when it has been identified as an *index number* problem. It has seldom, if ever, been noted in the population literature that there is a formal identity between standardization in demography and the construction of price indexes in economics. The identity is apparent if one considers not the standardized rates, discussed by Spiegelman, but the mortality indexes corresponding thereto: in Cox's terminology, the Comparative Mortality Figure (the direct-standardized rate divided by the crude death rate in the standard population) and the Standard Mortality Ratio (the ratio of actual to expected deaths, which is multiplied by the crude death rate in the standard population to obtain the indirect-standardized death rate). The CMF and SMR have the same algebraic formulas, respectively, as the well-known Laspeyres and Paasche price indexes, and the intrinsic ambiguities in comparisons of standardized rates or mortality indexes exactly parallel those involved in comparisons of aggregative price indexes (e.g. cost-of-living indexes for North vs. South). The economist's discussion of these ambiguities has been much more penetrating than the demographer's. Certainly the latter should not be content merely to recapitulate the historical confusion of the former.

Needless to say, there would be no point to the pointed remarks in this review if the target were not a work of overall excellence. The reader does not need to be reassured as to the

author's high competence, but he can be assured that the author has taken great pains to produce a text that will be invaluable to student and professional demographer alike.

OTIS DUDLEY DUNCAN

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ADAPTIVE HUMAN FERTILITY[1]

THE author of this book is a biologist with a broad interest in problems of population. His background includes a period of research with the Marine Biological Laboratory at Woods Hole, Massachusetts, work with the International Division of Health of the United States Public Health Service, and director of research for the Planned Parenthood Federation of America. He is currently executive director of the National Committee on Maternal Health. Within each of these jobs the author has maintained an interest in human population and in ways and means of developing rational means of population control.

Dr. Henshaw's book ADAPTIVE HUMAN FERTILITY begins with a description of the biological aspects of procreation. One has the feeling that the author is most completely "at home" in this area. By means of interesting charts and diagrams, he graphically describes the types of reproduction at various levels of life.

The first section of the book also contains two chapters on "inducements for fertility management." Here, the author seems to join the ranks of the pessimists in the "great debate" regarding future population in relation to resources.

In the second section of the book the author describes the various efforts at population control in primitive and more recent societies. He offers some opinions regarding future efforts at fertility control. The primitive practices include infanticide; feticide; castration; continence, chastity and celibacy; coitus interruptus, obstructus and reservatus; plant materials;

[1] Henshaw, Paul S.: ADAPTIVE HUMAN FERTILITY. New York, McGraw-Hill Book Co., 1955, 322 pp. $5.50.