size by religion and socioeconomic status; fecundity impairments; the control of fertility; family planning; methods and effectiveness of contraception; trends and differentials in the timing and spacing of births; white–nonwhite differences in fertility; and family size and population growth in future years. There are appendices on sampling and on technical aspects.

The findings should contribute to the more realistic projections of future populations that were the major goal; to the posing of questions for further research; and to the knowledge base for debate and decision on problem, approach, and program in population fields.

There is an approach to universality in the voluntary limitation of fertility through contraception or sterilization or the involuntary limitation through subfecundity. The diversities that were once so great are reduced, though there is no monotone. Catholics wish, expect, and have more children than Protestants, particularly Catholics with religious education at upper levels who currently participate in church rites. In all groups, the less educated control their fertility with less efficiency than the more educated; proportions with excess fertility and the amount of the excess are alike higher among the less educated. Differences according to the labor force status of the wife remain, whatever the religion or the educational level. Fecundity impairments show no group or class differences. Overall, differences by occupation, income, type of place, and region are reduced. The remaining differences are more in children expected than in children wanted, and they are linked to education.

The planning of births remained an arduous and not always successful attempt. Omitting couples with no births, 60 percent of the couples had had unwanted pregnancies or timing failures. Nearly half the Catholic couples conformed to the teaching of the church in the use of rhythm, but the use–effectiveness was low. Between 1955 and 1960 there were relative increases in the use of withdrawal, total abstinence, and condoms. In 1960, for all women surveyed, either the husband or the wife had been sterilized in 10 percent of the cases, and in more than half of these cases sterilization was contraceptive in intent. Incidence was related to high parities of births and to contraceptive failures.

In recent cohorts, the median age of wives at marriage and the median age at first and specific later order births have declined. These changes in timing and in spacing have reduced the length of generation and hence raised the intrinsic rate of population growth. Earlier marriage and earlier childbearing were responsible for more than half of the upsurge in the crude birth rate after World War II; increase in size of completed families was responsible for less than half.

Among nonwhites removed from the farms and rural areas of the South, the ideals and the desired numbers of births tend to be similar to, but less than, those of the whites. The explanations for the higher fertility lie in a more prevalent use of nonmedical means that are controlled by women, a less effective practice, and a low level of education.

The birth expectations of the currently married couples, projections of marriage rates, and additions of the widowed, divorced, and separated formed the basis for projections of the population from 1960 to 1980. The medium and presumably the most probable projection assumes a decline in the size of completed family from 3.45 for the cohorts of 1931 to 1935 to 3.0 for those of 1951 to 1955 and associated changes in spacing. In these circumstances, population would increase from 180.7 million in 1960 to 258.3 million in 1985. The range between the low and the high estimates, however, is some 50 million.

Given research and technologies that are relevant to a reduction of fertility impairments and to an increase in effective limitation, advancing levels of education that are related directly to the achievement of ideals, and the maturing of large families in a changing social and economic milieu, this study of 1960 is indeed a basis for, rather than predictive of, the future. Neither its scientific contributions nor its values for policy and program are reduced thereby.

IRENE B. TAEUBER
Office of Population Research, Princeton University

Foundations of Economic Geography Series

Recent studies of population are quite numerous, but studies of population geography are rather scarce. With refreshing enthusiasm and erudition Wilbur Zelinsky provides this book, **A Prologue to Population Geography** (Prentice-Hall, Englewood Cliffs, N.J., 1966. 160 pp., $1.95), which he calls a "prologue" for a book yet to be written; in it he refrains from offering a regional survey and remains at the entrance of a systematic exploration, fully conscious of the necessity for both. Population geography is defined here as the science that deals with "the spatial aspects of population in the context of the aggregate nature of places." The place denotes a territory of any extent. The definition is just one of many given in the book. Demographers use the locational identification of population complexes without emphasizing their territorial significance. The dividing line between demographic and geographic analysis of population becomes very tenuous in empirical regional studies so that it is not surprising that many of the references provided refer to works of demographers.

The macroscale of the presentation doesn't allow deep penetration into the problems. Instead it provides glances at the world and offers some insights into the mechanistic examination of the population. The study is a question-raising rather than a problem-solving review of culturally oriented population geography. The exploration of relationships and covariances of physical, economic, cultural, and political factors with demographic properties leaves many questions unanswered. The cultural-historical orientation permeates the attempts to seek for answers regarding the present population occupancy in history and culture rather than in economy and social physics. The core of the book consists of an attempt to correlate the demographic complexities of modern world population with the cultural, socioeconomic, resource, and world regional systems. The regional typology based on cultural systems, affected by socioeconomic variables, and conditioned by the resource availability presupposes the existence of close correlation between them. The acceptance of genetically related evolutionary stages of socioeconomic systems as developed by Hans Bobek, namely the progressive steps from the most primitive food gathering occupancy to the most advanced industrial economy, implies the existence of chain-like links between successive stages through which the population of a region is supposed to

pass; it also presupposes close dependence between these stages and the population types. Although valid on a macroscale, not all the empirical evidence supports the theory. Despite the strong emphasis on the cultural variables and evident historical overtones, the study accepts the ideas of geographical neodeterminism of the physical conditioning of human endeavor.

The volume is the first of a new series of geographical studies published by Prentice-Hall under the editorship of Norton Ginsburg; it is hoped that other studies of similar nature will contribute additional humanistic flavor to the examination of economic postulates of the modern science of geography and serve as a link with many fields of social science.

JOSEPH VELIKONJA
Department of Geography,
University of Washington, Seattle

Eskimo Life

In this volume, **The Nunamiut Eskimos: Hunters of Caribou** (Yale University Press, New Haven, Conn., 1965. 400 pp., $8.50), Nicholas J. Gubser presents a straightforward description of the Nunamiut Eskimos of inland Arctic Alaska. One cannot but be impressed with Gubser's wide aquaintance with the details of their lives and his appreciation of the problems posed by their environment. The monograph ranges through the standard categories of ethnographic reports—history, language, economic activities, social organization, values, and world outlook. In spite of his balanced and knowledgeable handling of his material, I feel that the author just misses the full potential of the rich data to contribute either to social science or to glimpse the "soul" of the Eskimo. Although the study clearly adds to our knowledge of an ethnic group about which relatively little is known, the presentation is essentially descriptive, with little attempt to derive generalizations about behavior or to probe the value of various theoretical approaches. For example, Gubser tells us that the introduction of the gun resulted in a decline in cooperative hunting patterns, but does not push beyond to explore the ramifications of this event with respect to other aspects of social organization and values. Also, the fine details of the belief system of these Eskimos are presented without examining their functional relationship to other aspects of their mode of life. There is an excellent chapter on "The world of nature" of the Nunamiut that cries for an ecological treatment, but again the author stops short of integrative efforts.

There is another aspect of this study that I would like to note. Gubser describes the past and present of these people; about their future he is noticeably silent. Where are the Nunamiut heading? What are their aspirations? How do their young people feel? How do they see their future? What are the major social changes they are experiencing, and how do they react to these? At times I felt that the picture of the Nunamiut was frozen, with little sense of change or tension. The book ends with an anticlimactic chapter entitled "The caribou."

In concluding this review, however, I do want to reiterate my initial statement that the reader comes away from this volume with the feeling that he has learned a great deal of the raw material of Eskimo life, material that was meticulously gathered and presented in a readable manner.

SEYMOUR PARKER
Department of Social Science,
Michigan State University,
East Lansing

BIOLOGICAL AND MEDICAL SCIENCES

Russian Contributions on Brain and Behavior

Josef Brožek

The three volumes under consideration in this review constitute a valuable contribution to the history of Russian scientific thought and accomplishment. Ivan M. Sechenov's **Reflexes of the Brain** (M.I.T. Press, Cambridge, Mass., 1965. 149 pp., $5) is an impressive though largely programmatic formulation of a neurophysiological psychology. His **Autobiographical Notes** (American Institute of Biological Sciences, Washington, D.C., 1965. 174 pp., $4), translated by Kristan Hanes, provides a unique, personalized account of the Russian scientific scene in the second part of the 19th century. Kh. S. Koshtoyants' **Essays On The History of Physiology in Russia** (American Institute of Biological Sciences, Washington, D.C., 1964. 321 pp., $4), translated by David P. Boder, Kristan Hanes, and Natalie O'Brien, is a systematic presentation.

It has been said that the continuing lack of adequate working knowledge of Russian on the part of the American scientific community is replacing the politically imposed curtain of yesteryear with a one-way viewing screen today: open to the West, all but impenetrable in the Eastward direction. In these days when the Soviet scientific output is steadily increasing both in volume and significance, the lack of a ready access to this body of literature constitutes a handicap and a potential threat. The difficulties in the East-West flow of scientific information are not new. They are more serious today.

Sechenov's work provides a dramatic documentation of the lag in the transmission of scientific information. His far-seeing essay "Reflexes of the Brain" was published, as a journal article, in 1863. It was the hundredth anniversary of that event which, eventually, resulted in the publication of this work in America, 102 years after its publication

The reviewer is research professor of Psychology at Lehigh University, Bethlehem, Pennsylvania.