Prologue:

The Demographer's Ken: 50 Years of Growth and Change[1]

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INTRODUCTION

The field of demography (also referred to as population studies) has evolved significantly since the mid-twentieth Century. A useful benchmark for gauging the nature and extent of change of the field is Hauser and Duncan's landmark work, *The Study of Population: An Inventory and Appraisal*, published in 1959. The 33 chapters contained in that volume were grouped into four sections. Part I, *Demography as a Science*, contained four chapters laying out the substantive, methodological, epistemological, and organizational foundations of the discipline (Hauser and Duncan 1959a, 1959b, 1959c, 1959d). Part II, *Development and Current Status of Demography*, offered eight chapters portraying the origins and practice of demography in selected nations, along with an insightful overview of disciplinary history (Lorimer 1959). Part III, *Elements of Demography*, included a dozen chapters covering elements of the demographic equation[2] (structure and components of change), as well as assessments of demographic data. Finally, Part IV, *Population Studies in Various Disciplines*, contained seven chapters discussing common interests of demography and selected disciplines, including

[1] The notion of the demographer's ken is borrowed from Ryder (1964).
[2] See Davis (1948, pp. 551–594) for the original elaboration of this concept.

sociology (Moore 1959), economics (Spengler 1959), and human ecology (Duncan 1959). See the Epilogue to this *Handbook* by Poston, Baumle, and Micklin for more discussion.

Not surprisingly, this *Handbook* covers many of the same topics as *The Study of Population*, but they are organized a little differently to reflect the evolution of population studies. This Prologue highlights the principal developments in the field during the past 45 years and thus serves at least three purposes. First, it provides an account, albeit abbreviated, of the significant ways in which the demography of today differs from the field on which *The Study of Population* was based—substantively, methodologically, and in terms of its use for public policy guidance. Second, it illustrates how demographic science has expanded to incorporate portions of heretofore peripheral disciplines, resulting in much wider recognition of the significance and impacts of demographic phenomena. Third, it shows how changes in population studies over the past five decades have been influenced by the expansion of the infrastructure on which modern scientific disciplines depend, namely, information, technology, and organizational structures.

THE EVOLUTION OF DEMOGRAPHY: CA. 1950–2000

A commonly recognized definition of *demography* is "the study of the size, territorial distribution, and composition of population, changes therein, and the components of such changes, . . . [namely], natality, mortality, territorial movement, and social mobility [change of status]" (Hauser and Duncan 1959d).[3] How this activity, the study of population, is carried out, and the results it produces, depend on a set of disciplinary resources.[4]

Demographic theories and models are statements of the evident or hypothesized course, causes, and/or consequences of these phenomena at varying levels of aggregation (Coale and Trussell 1996; Coleman and Schofield 1986; Hauser and Duncan 1959b).

Demographic methods comprise a body of procedures and techniques for collecting, evaluating, adjusting, estimating, and analyzing demographic data, while d*emographic materials* consist of the sources of raw data such as censuses, vital registration systems, population registers, and sample surveys (Hauser and Duncan 1959a; also see Siegel and Swanson 2004).

The *infrastructure of demography* consists of the professional organizations, modes of disseminating ideas and research findings, and institutional sources of research support that influence the kinds of work done under the banner of the discipline and how the results are portrayed and received.

Finally, *demographic praxis* refers to the use of demographic data and research findings by governments, businesses, and other organizations for predicting, planning, monitoring, and evaluating a wide range of demographic and nondemographic conditions, events, and trends (Siegel 2002).

[3] As of 2004, the front cover of the journal *Demography*, the official journal of the Population Association of America, offers a concise definition: "the statistical study of human populations."

[4] The resources listed are probably important for the operation of most, if not all, disciplines, but do not exhaust the class of resources that might be mentioned. For an interesting discussion of the context and social structure of scientific disciplines see Abbott, 2001, Chapter 5, though he is more interested in relations among disciplines than in the kinds of resources that make disciplinary activity possible.

The Trend of Population Parameters

One approach to understanding the changes that have taken place in the field of demography over the past half century is to consider the differences in major demographic indicators between then and now. This strategy is based on the assumption that one factor underlying shifts of disciplinary research emphasis is the evolution of important population parameters. Selected demographic indicators for the world, the more developed and less developed regions, and the least developed nations, are shown in Table 1.

Several conclusions may be drawn. Over the past five decades the population of the world increased by about 150%. The bulk of the change was concentrated in the less developed regions, with the greatest proportional increase in the poorest nations. Nonetheless, there was a significant reduction in the annual rate of population growth, particularly in the more developed regions. Only the least developed countries showed an increase in the population growth rate during this period, surpassing that for the less developed regions as a whole.

These changes in population size and growth parameters were due largely to shifts in the two principal components of growth, i.e., fertility and mortality. Between 1950 and the turn of the century the total fertility rate showed a marked decrease at the global level and for both the more and less developed regions, and a decrease of about half that amount in the least developed countries. The infant mortality rate, often used as a key indicator of the well-being of a population, showed a sizeable decline in all the major regions, though the more developed region versus less developed region differential remains substantial. Life expectancy at birth, another commonly used index of social well-being, showed substantial progress, particularly in the less developed regions. These trends in fertility and mortality combined to produce a clear trend of population aging. The median age increased in all but the least developed countries, with a sharp increase evident in the more developed regions.

Finally, significant changes are evident in two indicators of population distribution. The percentage of population living in urban localities increased considerably, especially in the less developed regions, though the overall proportion of population that is urban is still substantially higher in the more developed regions. Not surprisingly, population density also increased, with the proportional increase and the absolute level highest in the less developed regions.

These trends and differentials suggest that while some contemporary demographers have continued to focus on the issues that concerned their predecessors in the 1950s, namely, the description and explanation of fertility, mortality, and migration differentials, between and within population aggregates, the contours of demographic science have probably shifted as a consequence of emerging population patterns. One would expect that concerns related to population conditions and trends in the developing world, particularly in the least developed nations, grew over the past half century. Increased size, density, and urban concentration constitute population problems that require increased demographic understanding and, moreover, call for the use of demographic knowledge to formulate remedial actions. The observed demographic trends in the more developed regions also point to emerging topics for demographic research, e.g., population aging and its consequences.

In short, global, regional, and national demographic conditions have changed substantially since the publication of *The Study of Population*. A reassessment of the

Table 1. Selected Demographic Indicators by Aggregated Areas, Ca. 1950 and 2003[1]

Indicators and Areas	Ca. 1950	Ca. 2003	Percent Change, Ca. 1950–2003
Total Population[2]			
World	2519	6301	150
MDRs[3]	813	1203	48
LDRs[4]	1706	5098	199
Least DCs[5]	200	851	326
Population Growth[6]			
World	1.8	1.2	−22
MDRs	1.2	0.2	−83
LDRs	2.0	1.5	−25
Least DCs	1.9	2.4	26
TFR[7]			
World	5.0	2.7	−46
MDRs	2.8	1.6	−43
LDRs	6.1	2.9	−52
Least DCs	6.6	5.1	−23
IMR[8]			
World	156	55	−65
MDRs	59	7	−88
LDRs	179	61	−66
Least DCs	194	**[9]	**
Life Expectancy[10]			
World	46	65	41
MDRs	66	76	15
LDRs	41	63	54
Least DCs	36	50	39
Median Age			
World	24	26	8
MDRs	29	37	28
LDRs	21	24	14
Least DCs	19	18	−5
Percent Urban[11]			
World	30	47	57
MDRs	55	75	36
LDRs	18	40	122
Least DCs	**	**	**
Population Density[12]			
World	19	46	142
MDRs	15	23	53
LDRs	21	62	195
Least DCs	10	35	250

[1] *Sources*: United Nations, *World Population Prospects: The 1994 Revision*, Appendix II; United Nations, *World Population Prospects: The 2002 Revision*, Annex Tables; United Nations, *World Urbanization Prospects: The 2001 Revision*, Annex Tables; Population Reference Bureau, *2003 World Population Data Sheet*.
[2] In thousands.
[3] More Developed Regions.
[4] Less Developed Regions.
[5] Least Developed Countries.
[6] Annual percent change, 1950–1955 and 2000–2003.
[7] Total fertility rate per woman, 1950–1955 and 2000–2003.
[8] Infant mortality rate, 1950–1955 and 2000–2005.
[9] Not reported.
[10] Life expectancy at birth, both sexes, 1950–1955 and 2000–2003.
[11] 1950 and 2000.
[12] Per square kilometer.

state of demographic knowledge and research trends is long overdue. This a principal objective of the chapters that follow in this *Handbook*.

The Development of Disciplinary Resources

The progress of any scientific discipline depends on the adequacy of its fundamental resources: theories, methods, and data.[5] Theories provide the basis for selection of research topics and statement of hypotheses to be tested. Methods encompass a set of standardized procedures for the collection and analysis of data, thus increasing confidence in the validity and reliability of research findings. Data are the raw materials of scientific inquiry, the observations and indicators of conditions, trends, and differentials in the empirical world. The past 50 years of demographic science show significant, though probably uneven, progress in each of these basic disciplinary resources.

DEMOGRAPHIC THEORIES AND MODELS. The period surrounding the publication of *The Study of Population* produced a variety of views on the status of population theory. In 1952 Rupert Vance, in his presidential address to the Population Association of America, lamented the "poverty" of high theory in demography (Vance 1952). Only a decade later Robert Gutman wrote "in defense" of population theory, contending that "demography ... continues to offer illuminating theoretical statements which organize knowledge, lead to the acquisition of new knowledge, and help in the solution of population problems" (Gutman 1960). Hauser and Duncan (1959b: 89–102) identified several important population theories, including those derived from Malthus, optimum population theory, demographic transition theory, and psychosocial theories of fertility. Nonetheless, they concluded their discussion by stating that "demographers in general may have much to gain from additional allocation of energy to deliberate efforts directed toward theory-construction in conjunction with the conduct of empirical research (1959b: 104).

Recent assessments of the discipline of demography show similar ambivalence about the adequacy of population theories. Writing in 1979, Charles Nam argued "the issues of demographic journals today are replete with theoretically based articles, in stark contrast to those of the past. We no longer fall behind our fellow disciplines in theoretical development, and a merging of lower-order propositions into a theoretical whole is now as conceivable in demography as in any of the social sciences."

Yet, a decade and a half later Eileen Crimmins (1993: 587) stated that "although our theoretical approaches are considerably more complex now than in the past, demography still has highly developed theories in only a few areas. Fertility behavior is the exception."[6] Other population scientists point to demographic transition theory as the theoretical staple of the discipline (Caldwell 1997; Kirk 1996; Lee 2003).

It is the opinion of the authors of this Prologue that on the one hand, although a variety of new or reformulated population theories have been proposed over the past half century, their clarification and evaluation remain a challenge for the field. On the

[5] Dudley Kirk (1960, p. 309) wrote that "The study of population is at once a body of data, a methodology, and a bundle of generalizations concerning the causes and consequences of demographic phenomena."

[6] Note, however, that there is no consensus on the adequacy of fertility theory. See, for example, Stolnitz, 1983; Mason, 1993; Hirschman, 1994; Szreter, 1994; van de Kaa, 1996; and Caldwell, 1997.

other hand, demography has such an abundance of both formal theory and discursive theory that its theoretical accomplishments rival those of any of the other social sciences. Regarding formal theory, one need only consider, for instance, the richness and precision of stable population theory. Regarding discursive theory, there are few social sciences that may claim as much discursive theory as one finds in, say, the demographic study of fertility. Prominent theories to explain fertility behavior include demographic transition theory, wealth flows theory, human ecological theory, political economic theory, feminist theory, proximate determinants theory, biosocial theory, relative income theory, and diffusion theory. The view among nondemographers 50 years ago that demography is void of theory was incorrect then and is incorrect today.

DEMOGRAPHIC METHODS. There is agreement among demographers about the significant advances that have occurred in the past 50 years in methods of data collection and analysis. Hauser and Duncan (1959a) covered standard census procedures, vital registration systems, the sample survey, rudimentary data processing, and several types of administrative record systems. They also discussed techniques for evaluating, adjusting, estimating, and analyzing demographic data.

Each of the techniques covered in *The Study of Population* has been improved, partly through the application of advances in electronic information systems. National census taking is increasingly based on statistical sampling theory and techniques, particularly in the more developed nations, resulting in more efficient and accurate data collection. Perhaps due to the importance of demographic data for administrative decisions, there have also been improvements in collection procedures in the less developed countries (Cleland 1996).

Over the past five decades the uncertain quality and availability of demographic data have led to development of a variety of techniques for evaluating, adjusting, estimating, and projecting population parameters (Ahlburg and Lutz 1998; Ahlburg, Lutz, and Vaupel 1998; Brass 1996; Coale and Demeny 1968; Keyfitz 1975; Keyfitz 1981; Siegel and Swanson 2004). Although the results of many of these exercises, particularly population forecasts, are notoriously inaccurate, their use continues. As an example, one need only to recall that in 2003 the United Nations issued to significant acclaim a set of global and regional population projections to the year 2300.

DEMOGRAPHIC MATERIALS. This set of basic disciplinary resources can be divided into *primary data sources* and *data compendia*, e.g., data banks. The most comprehensive and generalizable primary data source is the national population census. National census coverage has improved considerably since the end of World War II, largely through assistance provided to developing country governments by the United Nations and a few other organizations such as the U.S. Census Bureau. Among 94 developing countries with a population of at least one million, only 49 conducted a national population census in the decade of the 1950s; by the 1990s that figure had risen to 71 countries (Cleland 1996).[7]

[7] The decade with the largest number of censuses conducted in these countries was the 1980s, with a total of 79.

The content, completeness, and accuracy of information collected through the census method continue to vary widely from one country to the next. Overall, however, the situation has surely improved worldwide.

Another important source of information is the civil registration system, which typically collects information on demographic events such as births, deaths, and changes of civil status as they occur. Though not 100% accurate and complete, vital registration in the more developed nations is far better than in the poor nations. Cleland (1996: 435) contends that although civil registration systems in developing countries are "seriously defective, it would not be correct that the data are of little value to demographers." Techniques have been developed for data adjustment and analysis, yielding a rough notion of trends and differentials in vital events.

Beginning in the 1970s, coordinated cross-national surveys emerged as an important source of demographic information. Between 1974 and 1986 sample surveys of reproductive behavior and related social and psychological indicators were conducted in 62 countries, representing 40 percent of the world's population, under the auspices of the World Fertility Survey (Cleland and Hobcroft 1985; Cleland and Scott 1987). This effort was succeeded by another coordinated international program of research, the Demographic and Health Surveys, with 170 sample surveys carried out in 69 developing countries between 1986 and 2003. The obvious advantage of these survey programs was the opportunity for comparative analysis and generalization of findings beyond a single population.

Less ambitious demographic surveys, typically focusing on a single country or community, have been a part of the demographer's repertoire for many decades. Early studies included the Indianapolis study (Kiser 1953; Kiser and Whelpton 1953), the Princeton study (Westoff, Potter, and Sagi 1963; Westoff et al. 1961), and surveys of family and reproductive behavior carried out in Puerto Rico (Hill, Stycos, and Back 1959; Stycos 1955). The number of demographic surveys has grown steadily over the years. Examples in the United States include the monthly Current Population Survey, the weekly health interview survey, and the various rounds of the National Survey of Family Growth carried out by the National Center for Health Statistics. Another important source of demographic information is the Adolescent Health Survey, begun in the early 1990s by the Carolina Population Center.

In short, over the past 50 years there has been an enormous increase in the availability of primary demographic data. The data quality of various sources differs somewhat, but the trend has been toward better coverage and reduced error in census enumeration and collection of survey data. Moreover, the development of techniques to estimate missing values or reduce measurement error has increased the utility of these sources of demographic information.

Another welcome addition to the disciplinary resources of demography is the growing availability of repositories for demographic data. Some of these collections are long-standing, such as the *Demographic Yearbook* published by the United Nations since 1948. Over the years the U.N. Population Division has increased its publication and distribution of very useful demographic information. The currently recurring population publications include *World Population Prospects, World Urbanization Prospects, World Contraceptive Use, The State of World Population,* and *National Population Policies*. A variety of other organizations, some part of the U.N., also provide recurring population-related data sets, including *HIV/AIDS Epidemic Update* (UNAIDS), *Human Development Report* (United Nations Development Programme), *Global Environmental*

Outlook (United Nations Environment Programme), *State of the World's Children* (UNICEF), *The State of Food and Agriculture* (Food and Agriculture Organization), the *Yearbook of Labour Statistics* (International Labour Organization), *World Development Report* (World Bank), and *World Health Report* (World Health Organization). Collectively, these publications offer a wide range of global, regional, and national demographic and population-related statistics covering at least several decades. Of course, the user must pay close attention to definitions, units of coverage, and specific measures, and the fact that they frequently vary from one publication to another.

In addition, there are a number of other organizations that provide comparable data sets. The International Division of the U.S. Bureau of the Census offers the International Data Base, an on-line data bank of country-level demographic information covering a range of years. The Population Reference Bureau publishes an annual *World Population Data Sheet*. And the World Resources Institute issues a biennial *World Resources* report containing a wealth of global, regional, and national environmental data.

A very important source of national census microsurveys via the Internet is the Integrated Public Use Microdata Series (IPUMS), created at the University of Minnesota in October 1997. As of the writing of this Prologue (June 2004), the U.S.–IPUMS consists of 27 high-precision samples of the American population drawn from 14 U.S. censuses that span the censuses of 1850 to 2000. U.S. American Community Survey microfiles and U.S. Current Population Survey microfiles are also accessible. In 2002 the IPUMS was expanded to include census microfiles from other countries. Currently available are data from censuses from many countries of the world for several census rounds. The U.S. and international microsurveys are easily accessible on the Internet via the IPUMS web page. The ease and speed with which the census microdata are available from IPUMS have truly revolutionized demographic research, particularly for researchers not located in the half dozen or so large demography centers. IPUMS has provided virtually all demographers the opportunity to participate in "big science" demographic research.

Overall, the volume of demographic and population-related information resources has grown dramatically during the past half century, particularly over the last two decades. The research-oriented demographer has virtually unlimited access to multiple data banks and statistical yearbooks, many of them via the Internet (see below). Used judiciously, this rapidly increasing set of resources provides a means of examining linkages between population conditions and trends and a wide range of societal phenomena.

The Infrastructure of Demography

Development of any scientific discipline depends to an increasing extent on its organizational infrastructure, which includes several components. In the case of demography these are the following: (1) professional and affiliated organizations, (2) professional journals that serve as outlets for results of demographic research; and, most recently, (3) Internet sites that facilitate communication among demographers, access to research ideas and reports, and retrieval of demographic data; and (4) the application of knowledge produced to resolve societal problems. Each of these infrastructure components has shown dramatic development since the publication 45 years ago of *The Study of Population*.

PROFESSIONAL ORGANIZATIONS. The oldest professional association of population scientists is the International Union for the Study of Population (IUSSP).[8] The Union was founded officially in Paris in 1928, following the 1927 International Population Conference in Geneva. In 1947 the IUSSP was reorganized as an association of 147 individual members representing 32 countries. By 1994 the IUSSP had grown to more than 2,000 members, an increasing number of them from developing nations. The IUSSP represents itself as a purely scientific organization; it does not hold particular points of view on population issues and does not lobby on behalf of specific population policies (Mertens 1994: 1). The basic organizational unit of the IUSSP is the research committee, of which there may be 10 to 15 at a given time, each devoted to a substantive demographic research topic. The IUSSP publishes a set of monographs covering diverse topics related to population; many are the result of scientific meetings sponsored by the IUSSP. The full meetings of the IUSSP are held every four years.

Shortly after the launch of the IUSSP, the Population Association of America (PAA) was organized in 1931 with 38 original members.[9] By 1955 membership numbered 430, and at the date of the 68th annual meeting in 2003 the organization had nearly 3,000 members. Annual meetings of the PAA are devoted to presentation and discussion of research reports and theoretical papers, some of which are published in the PAA's official quarterly journal, *Demography*.

In 1983 the European Association for Population Studies (EAPS) was founded.[10] EAPS is an international, interdisciplinary forum for population studies, with a special focus on Europe's population, and is affiliated with the IUSSP and the Committee for International Cooperation in National Research in Demography (CICRED). It organizes conferences, seminars, and workshops, and disseminates population-related information. EAPS publishes the *European Journal of Population*.

The Southern Demographic Association is a scientific and educational corporation of the Commonwealth of Virginia.[11] Organized in 1971 as the Southern Regional Demographic Group, the SDA has approximately 200 members. The group's research interests are national and international in scope. The SDA also encourages the demographic study of the Southern United States and also provides a forum for the discussion and presentation of issues of state and local demography. The SDA publishes a journal, *Population Research and Policy Review*.

The professional associations listed above certainly do not exhaust those that exist worldwide. These descriptions are intended to illustrate the variety of activities undertaken by such organizations and to suggest that while not as large as many scientific disciplines, demography is a viable and flourishing profession.

AFFILIATED ORGANIZATIONS. More or less loosely linked with the professional demographic organizations, and with the discipline as a whole, are various organizations that perform one or more functions that contribute to the activities of demographers. These functions include (1) funding demographic research, (2) public advocacy of important demographic and population-related issues and/or policy concerns, (3) dissemination of

[8] This information is taken from Mertens, 1994.
[9] Information about the PAA is provided on the organization's website.
[10] Information about the EAPS is provided on the organization's website.
[11] Information about the SDA is provided on the organization's website.

demographic data and research findings, (4) population education, and (5) delivery of services to address population problems and improve population health.

For nearly 75 years the Population Reference Bureau (PRB) in Washington, D.C. has been providing information and support for population activities.[12] Currently, PRB's principal efforts include (1) publishing, disseminating, and promoting print and electronic materials on population issues, (2) collaborating with other organizations to develop and implement strategies for communicating with policy makers, (3) conducting training on policy communications and Internet use, and (4) collaborating with journalists to expand the coverage of population, health, and environmental subjects. The PRB quarterly *Population Bulletin* has been published for nearly 60 years, with each issue devoted to the analysis of a timely demographic issue.

The Population Council in New York City was established in 1952 with the objective of developing a better understanding of population problems.[13] The Council contains three research divisions: the Center for Biomedical Research, the International Programs Division, and the Policy Research Division. Branch offices are located in 19 countries, and Council research is conducted in another 51 countries. The Council's research efforts are concentrated in three areas: biomedical science, social science, and public health. In 1975 the organization launched a new journal, the *Population and Development Review*, now recognized as the premier periodical in the field of population studies. The Population Council also publishes the quarterly *Studies in Family Planning*.

The International Planned Parenthood Federation (IPPF) in London is an umbrella organization, founded in Bombay in 1952, linking autonomous national family planning associations in more than 180 countries.[14] IPPF activities focus on (1) meeting the family planning service needs of families around the world, (2) promoting sexual and reproductive health, (3) eliminating unsafe abortion, (4) promoting equality and empowerment for women, (5) helping youth understand their sexuality and providing them with needed services, and (6) maintaining high standards of care throughout the Federation.

Another organization, the Alan Guttmacher Institute (AGI) in Washington, D.C., focuses on research on sexual and reproductive health in the United States and other countries.[15] Founded in 1968, AGI's programs encompass social science research, policy analysis, and public education. AGI publishes two widely circulated journals, *Perspectives on Sexual and Reproductive Health* (formerly *Family Planning Perspectives*) and *International Family Planning Perspectives*.

An alternative type of population-affiliated organization is seen in Population Action International (PAI), an independent policy advocacy group working to strengthen public awareness of population issues and promote political and financial support worldwide for population programs.[16] PAI activities concentrate on advancing universal access to family planning programs through an integrated program of research, advocacy, and communications.

There are many other organizations that fit this category. The number has increased substantially over the past three decades. The information provided on the small sample described above illustrates the variety of functions they provide to

[12] Information about PRB is provided at the organization's website.
[13] Information about the Population Council is provided at the organization's website.
[14] Information about the IPPF is provided at the organization's website.
[15] Information about AGI is provided at the organization's website.
[16] Information about PAI is provided at the organization's website.

demographers and the discipline of demography. In short, these affiliated organizations constitute a significant portion of the social infrastructure of demography, which is much more obvious today than 50 years ago.

DEMOGRAPHIC PERIODICALS. In the 1950s demographers had few specialized periodical outlets for their work. Most demographic research was published in journals of sociology and economics. The only demographic journals available were the Italian journal *Genus* (1934), the *Population Index* (1935)[17] (which was devoted primarily to bibliographic references), the Population Reference Bureau's *Population Bulletin* (1945), the British journal *Population Studies* (1947), and the Indian journal *Population Review* (1957). There was a slow but steady increase in the 1960s in periodicals devoted to population studies. *Studies in Family Planning*, published by the Population Council, made its appearance in 1963. A year later the first issue of the official journal of the Population Association of America, *Demography*, appeared along with initial publication of the *International Migration Review*. In 1969 the Alan Guttmacher Institute issued the first volume of *Family Planning Perspectives* and followed it in 1975 with the *International Family Planning Digest* (which would soon be called *International Family Planning Perspectives*). The Population Council's creation of the *Population and Development Review* in 1975 was a major addition to demography's journal repertoire. Later debuts of demographic journals included *Population and Environment* (1978), *Population Research and Policy Review* (1981), the *European Journal of Population* (1985), *Journal of Population* Economics (1987), the English edition of the French journal *Population* (1989), *Demographic Research* (1999) and *Applied Population and Policy* (2004). Clearly, demographers of today have more opportunities to publish results of their research in discipline-friendly periodicals.

DEMOGRAPHY AND THE INTERNET. A recent review of the social implications of the Internet overlooks its effects on the evolution of scientific disciplines (DiMaggio et al. 2001). Considering the case of demography, one cannot help but be impressed with changes in the infrastructure of the discipline resulting from Internet access. A recent article by Thomas Gryn (1997) reviews Internet resources available to demographers. However, given the rate of change of web addresses and the addition of new sites, the sources listed cannot be up-to-date. Accordingly, it would be futile to devote a great deal of space here to site reference[18]—except for the following useful sites, which are likely to remain stable.

The United Nations operates a Population Information Network (POPIN) at *http://www.un.org/popin/*. POPIN includes a list of relevant publications from UN and affiliated organizations, as well as a list of journals and newsletters that contain population content. The Population Reference Bureau operates a site (POPNET) *http://www.popnet.org/* that includes links to a wealth of organizational sources (international, nongovernmental, university centers, associations, directories, listservs, and databases). The Office of Population Research of Princeton University provides access

[17] The figure in parentheses is the year of initial publication. The *Population Index* was known as *Population Literature* until 1937.

[18] However, Gryn mentions a supplementary web site for the paper at http://members.tripod.com/~tgryn/demog.html.

to its *Population Index site (http://popindex.princeton.edu/index.html)* with regular coverage of 400 journals. Finally, the Committee for International Cooperation in National Research in Demography (CICRED) offers access to a wide range of information.

Demographic Praxis

The Study of Population makes little reference to applications of demographic knowledge. Over the past half century, however, circumstances have changed dramatically. Applied demography is a thriving enterprise, providing employment for a sizeable number of demographers (Micklin 1992; Siegel 2002). Three varieties of applied demographic activity will be mentioned here.

First, demographers have served as advisors, witnesses, and technicians on matters of political redistricting. Over time, populations become redistributed within political jurisdictions. Periodically, the decision is made to reassess the correspondence between population distribution and voting districts. In such cases, demographic expertise is invaluable.

Second, increased size and rate of population growth as well as population density have been linked to environmental deterioration, particularly in less developed nations. Demographers are frequently called to participate in multidisciplinary teams and given the responsibility of developing a plan to halt the environmental damage.

Third, demographers are often asked to provide various types of population forecasts in conjunction with community development programs. Large-scale expansion of transportation facilities and construction of residential structures are likely to change patterns of population growth, distribution, and perhaps composition. Officials need research to estimate the extent of disruption that will occur.

AN ASSESSMENT OF THE PROGRESS OF DEMOGRAPHY

There can be little doubt that the field of demography has changed since *The Study of Population* was published 45 years ago. One difference, and not a trivial one, is that many more people are trained in, and practicing, demography than there were in 1959. That fact, combined with the significant increase in opportunities to offer demographic conclusions and advice, means that people generally are more familiar with demographic issues and presumed problems.

Second, demographic issues are found today in a much wider range of disciplines. In 1959, demographic training was largely limited to sociologists and economists. Today, demographic expertise is found among many social and behavioral science disciplines, e.g., political science, anthropology, urban planning, psychology, public health, and environmental science. The 10 chapters in Part III of this *Handbook* on "Population and the Social Sciences" are a testament to the diffusion of demography throughout the social sciences in the past half century.

Third, the tools of the discipline, namely, the techniques for collecting and analyzing data, are much more precise, complex, and powerful than in the past. Before the 1970s, demographers were restricted to a few focused demographic methods texts,

including Cox's *Demography*, first published 1950 with a fifth and final edition published in 1976 (Cox 1976), Spiegelman's *Introduction to Demography*, first published in 1955 with a revised edition published in 1968 (Spiegelman 1968), and Barclay's *Techniques of Population Analysis* (Barclay 1958). The publication in 1971 of the comprehensive two-volume edition of *The Methods and Materials of Demography* (Shryock and Siegel and Associates 1971) was heralded by demographers and social scientists. A one-volume condensed edition of "*M&M*" was published in 1976 (Shryock and Siegel and Associates 1976). Almost 30 years later the second edition of this masterpiece was published (Siegel and Swanson 2004). In the meanwhile, in 1981, Pollard, Yusuf, and Pollard's (1981) *Demographic Techniques* was published, followed by two editions, with the third published in 1990. Important demographic methods texts published in the 1990s and later include Smith's (1992) *Formal Demography*, Halli and Rao's (1992) *Advanced Techniques of Population Analysis*, Hinde's (1998) *Demographic Methods*, Preston, Heuveline, and Guillot's (2001) *Demography: Measuring and Modeling Population Processes*, and Rowland's (2003) *Demographic Methods*.

Fourth, the volume and variety of demographic and related data available are far greater than ever before. This situation is both an opportunity and a danger, calling for the careful assessment of data quality. Finally, the principal issues calling for demographic analysis have changed. Population aging, effects of population change on the natural environment, and persisting social and economic inequalities related to population size and growth are the demographic issues of import for today. Many of these are addressed in various chapters in this *Handbook*.

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