
PROLOGUE: RESEARCH ON THE DEMOGRAPHY AND ECONOMICS OF AGING*

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It is estimated that within the next decade and for the first time in history, there will be more people over age 65 than under age 5 (United Nations 2009). In anticipation of this perhaps symbolic demographic watershed, this special issue of *Demography* provides an outstanding overview of many of the advances and accomplishments of the past several years as well as a description of some of the current research frontiers.

The RAND Summer Institute, started more than 16 years ago, was created to fill a number of serious gaps in the field of population aging. In addition, in the early 1990s and with cooperation from Wendy Baldwin at the National Institute of Child Health and Human Development, the Behavioral and Social Research program (BSR) created a number of centers and training programs for the demography of aging. At that time, each center and training program was so small and specialized that students and faculty at the various institutions were exposed to only fragments of the research field; there was clearly a need for greater integration of the many perspectives and traditions.

The same set of concerns applied to the BSR at the National Institute of Aging (NIA). Some forum, akin to the Gordon Conferences in biology and related fields, was needed to bring together the players in the fields of demography and the economics of aging. The initial focus was on providing faculty and students with the kinds of overviews that appear in annual review compilations, coupled with current research. This endeavor has succeeded far beyond our initial expectations, and significant appreciation is due to RAND and the Demography and Economics of Aging Centers.

The *15th Anniversary Conference* special issue provides an occasion to review progress in the field since the 10th anniversary, as well as a chance to consider future directions. Six years ago, in “Research on Population Aging at NIA: Retrospect and Prospect,” I traced some of the history of population aging within the Behavioral and Social Research Program and speculated on its future (Suzman 2004). The epilogue discussed the influence of organizational structures, individuals, scientific currents in the disciplines, and perhaps lucky happenstance.

Throughout the history of the population program in BSR, there has been a constant interplay between BSR staff and members of the scientific community to help chart BSR’s future. In some notable cases, this endeavor was assisted by efforts made by the Population Association of America. This fertile set of interchanges has continued. The basic two-branch (population- and individual-level) organizational structure of the BSR division (formerly a program) did not change, except that the boundaries between the branches became noticeably more fluid and permeable as psychology, cognitive science, and genetics became more incorporated into demography and economics. For example, psychologists in the individual branches led initiatives in behavioral economics and neuroeconomics and were also at the forefront of helping to integrate genetics into our longitudinal studies.

It has been advantageous to BSR that its recent organizational structure and culture has encouraged fluid and dynamic interdisciplinary interactions. As central National Institutes of Health (NIH) funding, in what was initially called the Roadmap and is now known as the Common Fund, increased, several new NIH-wide initiatives were started in BSR and were

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led by BSR staff. These include the Science of Behavior Change (<http://commonfund.nih.gov/behaviorchange>), Health Economics relevant to health care reform (<http://commonfund.nih.gov/healthconomics>), and large behavioral economics components in the stimulus-funded comparative effectiveness initiative at NIH and at the Agency for Health Care Research and Quality.

In 2007, some 20 years after a seminal report by a committee chaired by James Smith on data needs in the area of health and retirement, a second committee, chaired by Lisa Berkman and James Smith and organized by John Haaga, considered the data priorities for behavioral and social research on aging. Several of the recommendations relate to the articles in this special issue. Among the recommendations of the report were that (1) NIA/BSR should enhance efforts to understand the life course and the role of cumulative exposures on late-life outcomes; and (2) it should consider starting data collection at early ages as well as collecting improved retrospective data. Partially in response, BSR has intensified efforts to find and follow up cohorts in which data collection had begun at early ages. Several cohort studies of this type have been newly funded, and additional prospects, including a very large cohort initially assessed some 50 years ago, are being evaluated.

As is well noted in this special issue, this trend (endorsed by the committee) toward incorporating physiological, biosocial, and cognitive data into surveys has continued at a rapid pace. Two additional and related aspects of data development that have implications for the future of data collection strategy will be discussed later in this prologue. The first aspect, which has already begun, is the incorporation of genetic information into longitudinal studies. The second is a decision to begin increasing the harmonization of the many funded longitudinal studies.

In 2008, the BSR Division underwent its quadrennial review by the National Advisory Council on Aging (NACA)—the body that makes recommendations to the Director regarding research conducted by the Institute. This review covered a wide range of topics, including genetics, demography, social epidemiology and sociology of aging, health disparities, behavioral economics and community interventions, cognitive interventions, Medicare, health services and long-term care, psychology of aging, satellite accounts, social neuroscience and neuroeconomics, and the economics of aging. As in the data report, several of the recommendations are quite relevant to the contents of this special issue. With regard to genetics, NACA recommended the development of valid, reliable, and well-defined phenotypic measures. They also recommended the promotion of studies with a life-course perspective, with an emphasis on epigenetic investigations.

Given the changing nature of kinship structures in our society, their report encouraged an intensified focus on family demography and sociology, as well as continued research on social networks and their influence on health behaviors. In the area of biodemography, they emphasized the importance of work on the evolutionary and genetic bases of social behavior. Economics was noted to have been at the core of BSR research for the last two decades, and was largely responsible for the development of the web of aging surveys on health and retirement that have developed around the globe. NACA also suggested that additional attention be paid to the macroeconomic-demographic aspects of population aging. In addition, the panel supported a continued emphasis on the development of “near-market” satellite accounts for health and well-being.

In response to these recommendations, BSR has continued to rely on the National Academy of Sciences to help identify and develop areas for research in several of these areas. BSR has commissioned the Committee on Population (CPOP) to launch a panel with the aim of developing a revitalized research agenda in social demography and the sociology of aging. In the international sphere, a report funded by the NIA, *Aging in Sub-Saharan Africa* (Cohen and Menken 2006), has had a significant impact on the demography of aging in Africa. Among the outcomes has been the addition of an aging module to four sites of the International Network for the Demographic Evaluation of Populations and Their Health in

Africa (INDEPTH) (in addition to four in Asia). This has been coupled with a remarkable public sharing of data on the occasion of the first publication focused on data derived from these sites. Further, this occurred only a few months after the data became available to the investigators (Suzman 2010). In addition, NIA has funded a report on the epidemiological transition, with a strong emphasis on sub-Saharan Africa.

In response to the continued lag in life expectancy in the United States compared with other high-income countries, coupled with the finding that the health of those aged 55–64 in the United States is significantly inferior to the health of those in that age group in England and Europe, BSR has commissioned a report from CPOP on International Differences in Mortality at Older Ages (Crimmins, Preston, and Cohen 2010). In order to continue tracking the old-age disability decline and to understand its determinants, the National Academy of Sciences (NAS) held a series of meetings on the topic. This resulted in an NIA competition and the funding of a new disability study called the National Health and Aging Trends Study (NHATS).

Attracted by the idea of nonmarket satellite national accounts that might complement the GNP as an index of progress and that could be used as analytic tools, NIA contracted for a report on *Accounting for Health and Health Care: Approaches to Measuring the Sources and Costs of Their Improvement*. The ambitious and very long-term goal of this endeavor is the development of tools that will enable us to measure a country's output of health, as well as the medical and nonmedical factors that produce that health output. We have asked the NAS to follow this project with a parallel report, focusing on the measurement of subjective well-being and an exploration of potential use as a policy tool. BSR has pursued this topic for well over a decade, with a special interest in the experienced or momentary subjective sense of well-being. We are curious to learn how this aspect of well-being may differ from the more commonly measured evaluation of life satisfaction.

Several articles in this special issue discuss the development of longitudinal data collection, including the remarkable spread of the Health and Retirement Study model to England, Mexico, Europe, and Asia, coupled with the increased biological, cognitive, and psychological components of many of the studies and the growth of comparative analytic studies. Many of these longitudinal surveys were designed to assess both the economic transitions related to retirement and the trajectory of physical and cognitive functioning associated with aging.

Well over a decade after the discovery of the decline in disability of the older U.S. population, evidence remains fragmentary as to the course of disability in other industrialized countries. The discovery of the decline, which ran counter to expectations, underlined the potential plasticity of aging and was even the focus of a presidential briefing by staff of the Office of Management and Budget. Indeed, it might be argued that the demographic analysis of the trend in disability was one of the factors (including an earlier focus on the oldest-old) that placed the demography of aging on the map at NIA and NIH. Some saw the decline as evidence of the success of medical practice in old age, and a few proclaimed that the decline heralded potential economic savings of health costs.

The future course of disability, including the impact of obesity on the trend, remains of great interest (Cutler and Wise 2009). The course of aging-associated disability in low-income countries remains virtually unknown.

Integrating behavioral and social sciences with the life sciences has been a key principle in BSR's strategic thinking. Incorporating appropriate elements of the rapidly moving genetic revolution into BSR's thinking and science has become one of the field's central long-term challenges. In order to meet this challenge, BSR has recruited new staff with significant expertise in genetics. The addition of biological measures to the longitudinal surveys funded by BSR has had a relatively short and modest history, assisted by such NAS publications as *Biosocial Surveys* (Weinstein, Vaupel, and Wachter 2008) and *Conducting Biosocial Surveys* (Hauser et al. 2010).

Potentially the most revolutionary element of the addition of biological data in large-scale surveys has been the collection of DNA in some studies. The few analyses of DNA that have been collected in BSR-funded studies have focused on candidate genes. Recently, however, as part of the recent bolus of stimulus funding, NIA/NIH funded the Health and Retirement Study to conduct a Genome Wide Association Study (GWAS) on its respondents.

In the decade after the sequencing of the human genome, the genetic code has been painfully slow to give up its secrets, and much of the inheritability that can be observed in, for example, twin studies has not been found using a GWAS approach. An added complication in considering any association with behavioral phenotypes is that many of these phenotypes appear to have multiple determinants. There is great uncertainty about the degree of granularity in the behavioral phenotypes that will be needed for this enterprise. It might very well be that, for significant progress to be made, initial efforts might have to focus on phenotypes that are connected to known and well-characterized biological pathways.

At this point, there is enormous uncertainty about what will be discovered in this high-risk venture. Some studies seem to be best for gene finding, while others will likely benefit from being able to make use of genetic associations discovered and replicated in other studies. New thinking about how the incorporation of genetic information might change social and behavioral models is emerging. It is also becoming increasingly clear that very large samples will be needed, both for discovery as well as for the essential replication in multiple studies.

One consequence of this is becoming evident—there is a growing need to harmonize key variables, especially outcome phenotypes, across the many longitudinal studies funded by BSR. Achieving this harmonization across multiple investigator-led studies has become a high priority and is the subject of current planning. Additionally, behavioral scientists will need to become better trained in genetics, if only to permit fluent interactions with geneticists.

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