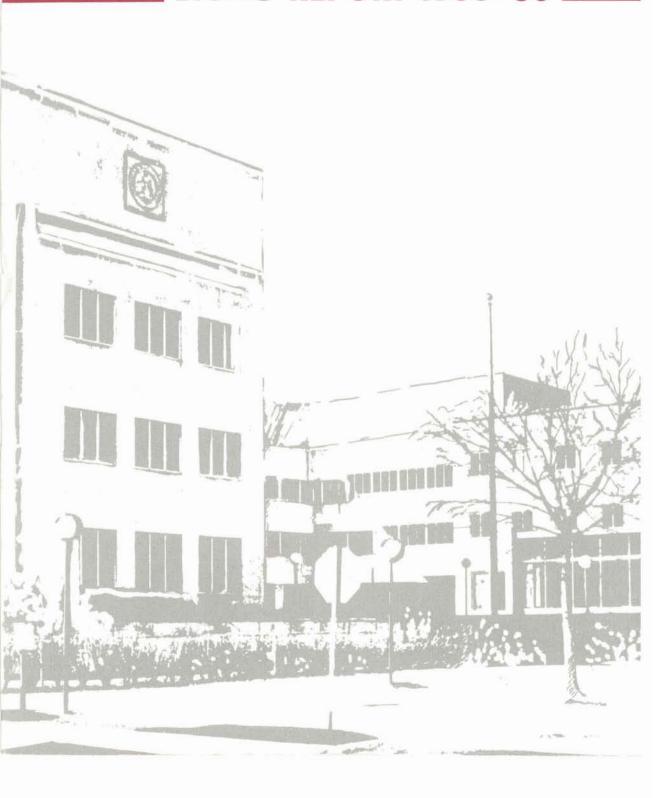
## NORC REPORT 1985-86



NORC, A Social Science Research Center, was founded in 1941 and has been affiliated with the University of Chicago since 1947. NORC is committed to conducting and promoting social science, social policy, and survey research on topics of importance. The collection, analysis, and dissemination of data on such central subjects as education, the labor force, the family, health, and society are the means by which NORC accomplishes its mission.

## NORC REPORT 1985-86

A SOCIAL SCIENCE RESEARCH CENTER . UNIVERSITY OF CHICAGO

This report, published in the summer of 1987, covers a period of just over two years, from the start of NORC's fiscal year 1985 (September 1984) through the end of calendar 1986.

On the cover: NORC's new headquarters, the University of Chicago's 1155 Building.

# Contents

Report from the Director
Report on Recent and Current Activities
Education 9
The Labor Force
The Family
The Social Fabric
Methods
The Corporate Report
The Director's Office
The Survey Group 69
The Research Group
The Economics Research Center
The Methodology Research Center 80
Chapin Hall Center for Children
The Center for the Study of Politics and Society
The Center for Computing and Information Systems 91
The Administrative Group
NORC Staff: 1985-86101
NORC Projects: 1985-86111
NORC Publications: 1985-86

# Report from the Director

ORC research focuses on six substantive areas: education, the labor force, the family, health and health care, the social fabric, and methodology. Our research agenda in these six areas is central to the social sciences and to social policy research.

It is NORC's goal to contribute to understanding in each of these six areas, and by so doing to encourage the use of empirical research as a strategy for acquiring knowledge in the social sciences and for addressing social issues. We pursue our goal in many ways: by collecting basic data on such phenomena as the life course developments of thousands of mobile young adults and the trends in social attitudes; by conducting interdisciplinary basic social science research; and by applying empirical findings to a wide range of policy issues.

Over the past two years the pursuit of this goal has been manifest in work on a number of projects designed to meet new or pressing social issues with innovative research methods. To address the rising concern about homelessness in U.S. cities, NORC designed a sampling strategy and survey procedures that produced reliable estimates of the size of the homeless population in Chicago and permitted analyses of the causes and consequences of homelessness. Responsive to the concern about adolescent and non-marital childbearing, and the rising tendency for mothers of young children to be employed, NORC has been a partner in an innovative survey on the cognitive and social development of nearly 5,000 children, linked to detailed data collected over several years on the behavior of their mothers. The Chapin Hall Center for Children, one of NORC's four research centers, has undertaken the task of monitoring the wellbeing of children in the state of Illinois, including close collaboration with state government to identify and create new types of data needed for a more thorough understanding of child welfare. As child support is primarily a state function in our federalist system, working with state government on this vital area of social concern creates a most effective partnership. By contrast, it is the federal government that is most involved in assessing medical care and its cost containment, and so in several studies NORC is gathering data for federal agencies that will allow assessment of the medical care received by segments of the American public and the effectiveness of measures designed to control costs.

In these and similar endeavors, we are convinced of the value of an integrative approach to inquiry. Over the two years covered by this report, we have attempted to strengthen and vitalize integration between our data collection and data analysis efforts, among our social scientists from several disciplines, and between ourselves and others in the social science research community.

Integrating data collection and data analysis. One of NORC's long-term internal challenges is the integration of its social science research activities with its survey operations. These two distinct activities, of necessity, are organized and administered very differently. As one example of that difference, consider how each typically secures funding for its projects.

In NORC's research centers, projects are typically initiated by a research associate who identifies, plans, and secures financial support for a project on the basis of his or her own research ideas. These projects may be motivated by some new social development that generates interest or needs attention, by a development in a theoretical model, by a newly available dataset, or by a new strategy for a study.



Robert T. Michael

Investigator-initiated studies differ markedly from the projects in our Survey Group, where projects are most often initiated in response to an announcement by the federal government that a survey is needed on a specific subject. NORC's decision to respond to the government's announcement about a particular survey is made by weighing several factors, including our judgment of the inherent social value of the study, the intellectual interest it presents for our staff, the complementarity between the study's needs and our strengths, and our corporate capacity to staff and schedule the study appropriately.

The decision-making dynamic and the keen competition involved in securing project funds in each of these two different structures does not necessarily promote complementarity between the two groups—one the producers of data and the other the analyzers of data. We believe, however, that each of these groups is made stronger and more effective in performing its task by interac-

tion with the other.

We have had substantial success in promoting integration of project effort across these two groups over the past two years. We can now point to instances of joint projects between research group staff and survey group staff in each of our six substantive areas. Readers of the chapters that follow will find in the education area, for example, that pioneering work on assessment of student achievement and the performance of school systems, developed in NORC's research group, has had a field trial in schools in two states under the management of NORC's survey group. In the labor force area a major effort to assess the impact of the federal government's Job Training Partnership Act (JTPA), which has potential for offering greater insight than ever before into the impact of job training programs, has been designed in large part by a team of NORC research associates and will be fielded by NORC's survey managers. In the methodology area, investigations into cognitive processes in question answering designed by members of NORC's research group have yielded experimental projects fielded through the survey group, reflecting an integrated research effort there as well.

Integrating the disciplines. I believe that NORC is one of the nation's most successful "think tanks" in terms of its integration of scientists from many disciplines. Among the 72 social scientists listed as research or faculty associates of our four research centers, we have demographers, economists, historians, political scientists, cognitive and educational psychologists, social policy analysts, and statisticians. The focus on a well-defined set of six substantive areas and the strong commitment by our scientists to the use of survey data in their inquiries facilitates the collaborative interdisciplinary research environment.

Because the various disciplines each have something important to offer to an understanding of human behavior and of social organization and none has a monopoly on insights, we are well served by the highly interactive, complementary give-and-take of a research environment that encourages exchange and fosters joint effort.

Integrating the efforts of NORC and those of others in the research community. NORC's corporate mission includes promoting and facilitating social science research outside of our organization as well as within. This work often begins, appropriately, close to home. NORC has frequently worked with University of Chicago social scientists who do not make their research homes at NORC. A project on active life expectancy is soon to get underway, led by Bruce Spencer, Director of our Methodology Research Center, and Dr. Christine Cassel from the Department of Medicine; University of Chicago medical sociologist Ronald Andersen plans to initiate two new data collection projects with NORC's survey group; and University of Chicago sociologist William Wilson heads a team conducting a major study of urban family life in low-income areas in Chicago, including a two-hour structured interview fielded by NORC.

Beyond this, NORC's staff regularly works with social scientists at other institutions. For the National Longitudinal Survey of Labor Force Behavior/Youth Cohort, for example, NORC's Survey Group has conducted annual interviews with thousands of young adults since 1979 for the study's principal investigators at the Center for Human Resource Research at Ohio State University. During 1985-86, as in the past, we worked with principal investigators from various universities. These included Columbia University, the University of Houston, Northwestern University, the University of Massachusetts, New York University, the University of Illinois, and the University of North Dakota. We also worked with scholars from various research organizations, including the RAND Corporation, the Graduate Management Admission Council, Memorial Sloan-Kettering Cancer Center, the National Research Council of the National Academy of Sciences, the Human Relations Research Organization, the Scripps Clinic, the Urban Institute, Systems Research and Application, and the Fred Hutchinison Cancer Research Center.

Beyond these individual integrative efforts, NORC is committed to thoroughgoing interaction between its efforts and others in the research community through its policy on data dissemination. NORC collects no proprietary data. That is, all NORC datasets are made available for scientific purposes by the research community at large, subject only to the assurances of confidentiality we offer respondents and to a reasonable delay designed to allow the investigators and sponsors who plan and carry out the studies some time for their initial analyses. This corporate commitment to public access to data is essential to ensuring the scientific nature of an inquiry: scientific studies must be replicable, and the basic data on which a scientific finding is based must be available for scrutiny and reanalysis.

Rather than maintain a large program of its own for disseminating data to users individually, NORC has adopted the strategy of placing its datasets in one of the national data archives and of relying on governmental agencies or their agents to disseminate data. NORC's librarian, Patrick Bova, has served countless scholars by responding to inquiries about how to obtain data from one or another of NORC's more than a thousand surveys, and readers are encouraged to contact Mr. Bova for information about datasets.

In addition to providing data, NORC disseminates research findings through its research center discussion paper series, its newsletter, *The Reporter*, the *Journal of Labor Economics*, and the many conferences, seminars, and workshops that are an integral part of NORC's research and survey environment. Of course, researchers affiliated with NORC also independently present and publish the results of their work in a wide variety of places.

An area of outreach in which renewed interest has been generated of late is formal training in survey methods and research. NORC offers courses in survey methods annually through the University of Chicago. One of these, the NORC practicum, permits graduate students to work on existing survey projects while attending lectures on various aspects of surveys including sampling, questionnaire design, field management, data processing, and data tape documentation. NORC also has a small summertime program of internships for undergraduates in the social sciences who wish to see what basic research and survey data collection are all about. In conjunction with the University of Chicago, NORC annually houses a number of postdoctoral fellows.

The years 1985 and 1986 were marked by innovation and growth at NORC, both occurring at a remarkable pace. No member of the staff sits in the same office he or she did two years ago; none of NORC's research centers operates with the structure and leadership it had two years ago; no survey operations project is managed with support of the same computer information systems in use two years ago. Moreover, over the past two years our non–interviewer staff has grown by 50 percent, and our annual revenue by over 30 percent.

NORC's Chicago headquarters and its New York office both changed locations during the past two years. The relocation of the Chicago office brought NORC into cotenancy with the University of Chicago's Computation Center. In the near future, NORC will be joined at 1155 East Sixtieth Street by two other members of the University community, research centers from the Social Science Division and the University's newly established School of Public Policy Studies. When plans for the building are fully operationalized, I expect it to house one of the most stimulating environments for empirical social science and social policy in the nation.

Some changes, if less welcome, still deserve special note. D. Gale Johnson stepped down as President of NORC's Board of Trustees after many years of selfless and wise leadership. Fortunately, NORC will retain his counsel as a Life Trustee. Paul B. Sheatsley retired after a career that paralleled and substantially enhanced the progress of survey research over the past half century. Celia E. Homans, NORC's Associate Director for Survey Operations, has left NORC after leading our survey operations group with energy, loyalty, and extraordinary

skill. The combined years of service to NORC of Gale Johnson, Paul Sheatsley, and Celia Homans equals about twice the years of NORC's existence. Much of the fine reputation NORC currently enjoys is testament to their skill, dedication, and effort. We are fortunate that each continues to serve NORC in a consultative capacity.

Despite all the changes in our structure, location, staff, and volume, there is considerable stability at NORC. The staff itself, though it has undergone both addition and loss, continues to be at the heart of all of NORC's achievements. It is the creativity, skill, and commitment of NORC's staff that make it possible for the organization to take considerable risks on behalf of important scientific goals. Similarly, though the volume of NORC's work has increased greatly, the next section of this report focuses on the same six substantive areas as were featured in our previous biennial report. Many of our studies entail longitudinal or repeated cross-sectional data collection efforts that create continuity from year to year. Most of our projects fit within longer term programs of research on issues not likely to pass soon from public concern. Finally, and fundamentally, NORC was established to do social research in the public interest, and now in its forty-seventh year, it is energetically engaged in that pursuit.

## Report on Recent and Current Activities

#### EDUCATION

n 1972 the U.S. Department of Education, through its National Center for Education Statistics, began a longitudinal studies program with a national sample survey of 23,000 members of the high school graduating class of that year. At the start of the current decade, a study of 58,000 members of the high school graduating classes of 1980 and 1982 was added to the program. Preparations are now underway to begin interviewing 26,200 young people who will graduate from high school in 1992, two decades after the original subjects of this research program. In 1985-86, NORC worked on all three of these studies, which together compose the most far-reaching effort ever undertaken to provide basic data about education in American society. These projects, because of their size and scope, constitute the core of NORC's survey work in education research, a core that was supplemented in 1985-86 by projects concerned with educational testing and measurement and financial aid for postsecondary education, as well as studies of such diverse topics as the impact of a junior high school textbook on students and the education of professionals in business and medicine.

#### Providing Basic Data on American Education

NORC's involvement with the Department of Education's longitudinal studies program began with the inception of High School and Beyond: A National Longitudinal Study for the 1980s (HS&B). NORC participated in the study from design through analysis and conducted in-

person interviews with 85 percent of the sample of 58,000 high school sophomores and seniors in 1980. NORC implemented the study's biennial followup design, collecting data from subsamples of the original 58,000 in 1982 and 1984, with response rates of 94 and 91 percent in those two years. In 1985, NORC assumed responsibility for the National Longitudinal Study of the High School Graduating Class of 1972 (NLS-72), whose respondents had been interviewed five times, most recently in 1979. These developments set the stage for a combined survev of all three cohorts from the two studies in 1985-86, led by NORC Senior Survey Director Barbara Campbell, under the aegis of the Center for Education Statistics (CES, successor to NCES).

The HS&B third followup (fourth round of interviews) and the NLS-72 fifth followup (sixth round of interviews) were fielded simultaneously in 1986. The HS&B interview focused on collecting information on education, personal development, family formation, and other life experiences from subsamples of 12,200 members of the high school graduating class of 1980 and 15,000 members of the class of 1982. In addition, college transcripts were collected for members of the class of 1982, and information on financial aid for postsecondary education was collected from members of both classes.

The NLS-72 interview sought an update on the experiences of 14,500 members of the high school class of 1972, after a seven-year hiatus in data collection from them. The questionnaire included a spe-



Barbara Campbell (right) and Survey Director Penny Sebring

cial supplement concerning the respondents' histories in the areas of cohabitation, marriage, and fertility. The supplement also includes items designed to elicit information on the allocation of resources within households, including the flow of money and time from the respondents to their children, with special attention to divorced noncustodial parents. This supplement was designed by NORC Research Associates Robert Michael and Robert Willis and funded by the National Institute of Child Health and Human Development. (Additional information on this component is included in the Family section of this report.)

In addition to the economies to be derived from conducting the two studies simultaneously, the combined approach facilitated an attempt to make the studies more comparable, thus allowing more, and more precise, comparisons of trends between the cohort from the seventies

and the two from the eighties. In keeping with this goal, the NLS-72 fifth followup questionnaire was designed with an eye toward increased similarity to the HS&B questionnaire. Another significant development in the conduct of the combined study was the application of a stateof-the-art processing system to the data reduction task for all three cohorts. NORC's CADE (computer-assisted data entry) system was used to produce cleaner data, and to produce it more efficiently, than was possible with the use of optical scanning alone, the system previously used for HS&B data reduction at NORC.

Advances in technology were also used to increase the project management role of NORC's senior field staff for the study. Responsibility for management of the national data collection effort was divided among four of NORC's twelve Divisional Field Managers. These senior field managers are regularly responsible for management of field efforts in their divisions. The combined 1986 HS&B/NLS-72 data collection effort was able to take advantage of their field management experience at a higher level by equipping them with in-home microcomputers. This allowed them to do on-site analysis of field performance and problems at an aggregate level-for roughly one-fourth of the country in each case-that could formerly be done only in the central office.

The response rates for the two studies in the 1986 followups demonstrate that the advantages of the combined data collection approach were obtained without cost in the area of participation: 90 percent of the 27,200 HS&B participants responded in what was their fourth interview in six years, and 89 percent of the 14,500 NLS-72 participants responded to their sixth interview after a seven-year period without contact.

These response rates contribute to the precision of the estimates that can be derived from the data. Special supplements like that funded by NICHD, as well as other add-ons to the core studies, increase the value of the database for research and policy. In particular, earlier rounds of HS&B included the administration of cognitive tests, the collection of high school and college transcripts, and the collection of data from schools, teachers, and parents associated with the respondents.

Because of the breadth of the surveys' coverage, data can be used to examine such issues as school effects, bilingual education, dropouts, vocational education, academic growth, access to postsecondary education, student financial aid, and life goals. A few examples will illustrate the range of uses to which data from High School and Beyond have been put: HS&B data have been used extensively by scholars, including NORC Research Associate James Coleman, to examine the differences between public and private schools in environment and educational outcomes: HS&B data on home language and exposure to bilingual services have been employed by both proponents and opponents of bilingual education to model effects of various

changes in the regulations governing these programs; HS&B transcript data have been used by Department of Education analysts to document the discrepancies between the recommendations of the National Commission on Excellence in Education and the actual course-taking patterns of American high school students. An Annotated Bibliography of Studies Using Data from High School and Beyond, published in July of 1985, cited 276 published reports—papers, journal articles, and books—that were known at that time to have used HS&B data.

Continuing Development of a Major Data Resource: NELS:88. The National Education Longitudinal Study of 1988 (NELS:88) is the third study in the program of longitudinal research on education undertaken by the U.S. Department of Education's Center for Education Statistics. NELS:88 will be based on a nationally representative sample of 1,000 elementary schools (800 public schools and 200 private schools, including parochial schools). Within the school sample, 26,200 eighth grade students will be selected at random for participation in the study. Followup surveys are planned at two-year intervals to allow long-term trend analyses.

This study, like its predecessors HS&B and NLS-72, participates in the CES program goal of providing trend data about critical transitions experienced by young people as they develop, attend school, and embark on careers and other life courses. NELS:88 will complement the earlier studies in two ways. First, it will



Calvin Jones

extend the age range of respondents covered by the program and the period in which respondents were socialized and educated by focusing on eighth grade students. This focus will also allow greater coverage of the student population as a whole, since some students drop out before the tenth grade, the earliest point at which data were collected in the prior studies. Second, though NELS:88 will include topic areas new to the program, such as students' transitions to secondary school environments, the questionnaire for the study is being designed to allow comparisons with the older cohorts of HS&B and NLS-72.

Like HS&B, NELS:88 will include the administration of cognitive tests to participating students. The curriculumsensitive test battery will use item-overlap methods to measure cognitive growth between the eighth and twelfth grades in

four achievement areas: reading and vocabulary, mathematics, science, and social studies. And, to allow better understanding of the context within which student development occurs, NELS:88 will supplement student data with information collected from school administrators, teachers, and parents.

In addition to these core components of the study, several special supplements are planned: oversampling of students of both Hispanic and Asian-Pacific backgrounds, to allow adequate study of issues of special concern for languageminority students (sponsored by the Office of Bilingual Education and Minority Language Affairs); a Mathematics and Science Supplement, which will add items allowing for analysis of science and mathematics curriculum issues, and for investigation of the relationships among the characteristics of learners, their school science and mathematics environment. and actual achievement in these areas; and the Gifted and Talented Program Supplement, which will add items allowing comparisons of gifted and talented students with other student groups and analyses of issues related to the nature and nurturance of giftedness. Finally, several states have funded sample supplements in order to obtain staterepresentative data.

NORC Senior Survey Director Calvin Jones, who formerly served as Project Director for High School and Beyond, now serves in the same capacity for NELS:88.

#### Improving Methods of Educational Measurement

The testing requirements and data needs of state departments of education are a longstanding focus of the work of NORC Research Associate Darrell Bock and his colleague Robert Mislevy of the Educational Testing Service. In 1985-86, Bock and Mislevy worked on both the development of a single powerful and efficient method for meeting the many and various state needs for test data and on the administration and development of the psychometric activities associated with the California Assessment Program.

In an investigation supported by the Center for Student Testing, Evaluation and Standards at the UCLA School of Education, Bock and Mislevy continued work on a system of comprehensive educational assessment for the states, called "the duplex design for educational assessment."

From a 1985 survey, Bock and Mislevy learned that 47 of the 50 states mandate some form of statewide testing of student attainment. These testing programs vary widely in design: some employ traditional every-pupil achievement testing, others are limited to minimum-competency testing, still others make use of matrix-sampled assessment at benchmark grade levels.

The most widespread program is minimum-competency testing: 23 states have centrally directed programs, and another 16 allow local options of test content and administration; in 23 of these 39 states, satisfactory performance on the test is a requirement for high school graduation. Standards for passing are set variously by state legislatures, state boards of education, and local education authorities.

Many states have multiple programs, usually some combination of outcome assessment and individual achievement testing. States that have achievement-measurement or minimum-competency programs test every pupil at selected grade levels, but some of those using matrix-sampled assessment test pupils in only a sample of schools. Others, such as California, use matrix sampling methods but test in all schools.

Considering that the information needed to assess educational productivity must be much the same in all states, the variety of these programs is at first glance surprising. Closer examination reveals, however, that they arise from different emphases on outcomes for which schools should be held responsible. Where the main concern is certification of essential skills and knowledge, minimumcompetency testing is emphasized. Where the focus is on student attainment at all levels, especially when student guidance is involved, a commercial achievement testing program is usually employed. Where progress toward detailed curricular objectives is monitored, a matrix-sampling assessment program is the only practical approach. To the extent that mandated testing is committed to these disparate goals, the multiplicity of the existing state programs,



R. Darrell Bock

with limited comparability of the resulting data, would seem to be inevitable.

The duplex design, Bock and Mislevy argue, allows states to have a single comprehensive assessment program that can serve all of these purposes directly and efficiently. They base this view on an analysis of the information needs of the main users of educational test results within the states. The duplex design provides measures of achievement suitable for certifying attainment, for counseling students and parents, and for monitoring the effectiveness of schools and school districts. At the same time, it offers the detail and precision necessary for the evaluation of instructional methods and materials, and for basic educational research. Bock and Mislevy have also begun to develop ways in which results from independent state assessments based on the duplex design can be referred to a common scale to allow comparisons among states.

In an application of some of their theoretical work, Bock and Mislevy have since 1979 performed psychometric research in item calibration and scale-score evaluation for the California Assessment Program of the state's Department of Education. The approach of Bock and Mislevy employs a unique system of school-level scoring, which enables the Program to work with school-level summary data from its multiple-matrix sample of item responses, rather than with pupil-level data. This approach has been applied to third-grade, sixth-grade, and eighth-grade level data. In the autumn of 1984, ninth graders in eighteen California schools were tested using an experimental eighth grade science and mathematics knowledge test. Members of NORC's Survey Group, under the direction of Senior Survey Director Miriam Clarke, worked with Bock and Mislevy to implement the study. Survey staff contacted the schools to secure their cooperation and schedule testing sessions. They also wrote the specifications for test administration. These were used first by NORC senior field managers, who conducted a pretest in one school, and later by teachers in the selected schools, who were trained by NORC field staff to administer the tests in the other seventeen schools.

In another application of the duplex design, Bock designed a field trial of a duplex design instrument in the area of mathematics, to be conducted under the

auspices of the Program Evaluation and Assessment Section of the Illinois Office of Education. Under the direction of Senior Survey Director Eve Weinberg, school personnel were trained by NORC field staff to administer the test to about 3,000 eighth grade students in 32 schools throughout Illinois. Students will receive reports of their test results, and principals and teachers will receive reports on their students' performances. Analysis of the trial, by Bock and Research Analyst Michelle Zimowski, is in progress. (Other developments in testing and measurement are noted in the Methods section of this report.)

#### Additional Work in Education Research

In 1986 NORC began work on a project designed to establish a reliable, nationally representative database on postsecondary financial aid from the perspective of students and former students. The National Postsecondary Student Aid Study, funded by the Center for Education Statistics, is the first attempt in the history of education research to accomplish this purpose. A sample of 60,000 students enrolled in some form of postsecondary education will be surveyed by Westat, Inc. (the study's prime contractor), and the high school transcripts of about 10,000 of these students who are enrolled in their first year of postsecondary school will be collected by NORC under the direction of Senior Survey Director Calvin Jones.

In addition, NORC will collect data from a sample of about 12,000 former students who paid for some of their post-secondary schooling with Guaranteed Student Loans. Loan defaulters, as well as those who have fully repaid their loans, will be oversampled to permit comparative analyses of repayment patterns and the impact of educational debt.

Additional information on this study and others—an analysis of the school as a social unit using HS&B data; a study of teacher supply, demand, and turnover; an assessment of the impact of a textbook on the economics attitudes of junior high school students; and surveys concerning the education of professionals in business and medicine—is presented in "NORC Projects: 1985-86," later in this report.

## THE LABOR FORCE

The labor force participation of Americans has been a topic of continuing research interest at NORC since the 1940s, when the organization contracted with the Office of War Information to survey the population on labor problems, absenteeism, morale, and the role of women in the war effort. Currently, NORC is engaged in a wide range of basic data collection and applied policy research on labor force participation and its relationship to other broad areas of interest such as education, family formation and childbearing, and the economy. At one end of the spectrum, scholars at NORC are examining the dynamics of competition for jobs and power among senior executives. At the other, they are collecting and analyzing data on persons who are at particular risk of unemployment or underemployment-such as young persons just embarking on their careers, the hard-core unemployed, and women with or without children.

#### A Basic Data Source: The NLS/Y

An issue of major concern over the past decade has been the extent to which the large "baby boom" cohorts of the 1950s and 1960s have been able to find work and adapt to the constantly changing demands of the work force, in years of both high and low unemployment. Policymakers have found the National Longitudinal Survey of Labor Force Behavior/Youth Cohort (NLS/Y), an annual study that NORC has conducted since the survey's inception in 1979, to be an important source of basic information on issues such as this one.

The NLS/Y is one component of an ambitious 21-year-old project, funded by the U.S. Department of Labor with Ohio State University's Center for Human Resource Research as prime contractor, that follows five nationally representative cohorts totaling 33,000 individuals. These five cohorts are now aged 20 to 80. Data on the four older cohorts, which were first surveyed in the 1960s, are collected by the U.S. Census. Through the NLS/Y, NORC collects information from the voungest cohort on such topics as employment and unemployment, education and training, income, socioeconomic status, and family structure, and about their health, work attitudes, fertility, alcohol and drug use, and experience with military service.

The NLS/Y respondents, who were first interviewed in 1979 when they were 14 to 21 years old, constitute a nationally representative sample of 12,000 youth, with oversamples of blacks, Hispanics, and disadvantaged whites, and a special sample serving in the military as of 1978. The database from the NLS/Y is exceptionally rich. For example, it includes the respondents' scores on the Armed Services Vocational Aptitude Battery (ASVAB), an entrance examination for the military that they took as part of a Department of Defense-funded project designed to establish national norms for the test. Besides DoD, other agencies have used the survey to ask questions relevant to their own policy areas, including the National Institute of Child Health and Human Development, the National Center for Research in Vocational Education, the

National Institute on Alcoholism and Alcohol Abuse, and the National Institute on Drug Abuse.

Hundreds of researchers in academic and private institutions across the country make use of NLS/Y data. Recent analyses have addressed such diverse questions as:

Does employment during high school impair academic progress?

Can the all-volunteer military compete with the opportunities offered in the civilian job market?

How do women fare in traditionally "male" jobs, both in the military and in the private sector?

Does early career unemployment have a destructive effect on later economic and occupational success?

What are the different kinds of stresses associated with combining motherhood with work and/or education for blacks, for Hispanics, and for whites?

Books and articles that draw on NLS data, which number in the hundreds, are listed in *National Longitudinal Surveys of Labor Market Experience: An Annotated Bibliography of Research*, by Kezia V. Sproat, Helene Churchill, and Carol Sheets (Lexington, MA: Lexington Books, D.C. Heath and Company).

Congress, the Department of Labor, and the Minimum Wage Study Commission have all used NLS/Y data to study the effects of the minimum wage on employment and education. Data from the survey have also been used by Congress in deciding whether and how to allocate



NLS/Y staff: Senior Survey Director Woody Carter and Survey Directors Alisu Schoua-Glusberg and Ruth Kellam

funding for youth employment training programs, and in considering legislation that would require the development of a national program to promote economic recovery and full employment.

The NLS/Y interview is conducted in person and lasts an average of one hour. In 1987, NORC will conduct the ninth annual round of data collection with the original respondents, who will be 22 to 29 years old. Despite the locating challenges involved in maintaining contact with a young and highly mobile population, annual response rates have averaged 94 percent since the study began.

In 1986, a special Child Supplement to the NLS/Y collected cognitive and other data from all of the biological children of the mothers in the NLS sample. This study, and the exceptional database that it has produced, are described in the section on *The Family*.

## Entry and Success in the Labor Force

Scholars in NORC's Economics Research Center are using survey data to examine such issues as the dynamics of entry into the labor force and competition for chief executive positions.

ERC Research Associate Sherwin Rosen is performing an empirical study of entry dynamics in professional labor markets, using a conceptual framework that focuses on the role of expectations about future income in decisions to enter the labor force. Rosen is also completing a book on the spatial approach to labor markets. His plan for further analysis in this area includes a study of the relationship between specialization, the division of labor, and the organization of production and its connection with economic progress. The interaction between incentives for investment in skills, degree of specialization, and division of labor-a classical problem that has been ignored in recent years-will be a focal point of this research. This work is funded by the National Science Foundation.

Other NSF-funded research by Rosen explores the distribution of prizes in a match play tournament with single eliminations. In certain sports, such as professional tennis, the prize structure interacts with the design of the game in providing incentives for the best players to survive to the finals and win the top prizes. Rosen views the tournament structure as

a statistical experimental design problem, but also sees the general framework of such competitions as having application to certain "career games"—including competition among senior executives for the top position in a firm.

A longstanding issue in economics concerns how the behavior of economic aggregates-such as the number of person-hours of labor supplied to the economy-is related to the micro-level decisions of individual households or firms. Research Associate Thomas MaCurdy is bringing new econometric methods to bear on this old issue in his analysis of the relationship between aggregate labor supply-the number of person-hours of labor supplied to the entire economy and underlying household market decisions. He points out that conventional macroeconomic estimates of aggregate labor supply functions can be related to the behavior of individual households and firms at the microeconomic level only under highly restrictive and empirically untenable assumptions. He demonstrates, for example, that assumptions about labor force participation that fail to distinguish between those already in the labor force and those entering it will undermine efforts to predict the effect of an increase in the average wage rate on aggregate hours; these changes can be predicted accurately only if the two groups are distinguished. This research is funded by the National Science Foundation.

ERC Research Associate James Heckman is conducting an NSF-supported

project-Earnings, Data Evaluation, and Economic Duration Analysis-that comprises three major topics in microeconomics and microeconometrics, and also has an applied research component that is of particular policy interest to students of affirmative action. The first topic of his project is the formulation and estimation of structural models of labor earnings that test for, and incorporate, self-selection and comparative advantage in the labor market. The goal of this part of the research is to specify an earnings function with clearly interpretable economic parameters in which demand and supply play an explicit, identifiable role.

Heckman's second topic is an evaluation of the benefits of longitudinal data for estimating models of market earnings. A major goal of this part of the research is to assess the optimal length of longitudinal studies. Heckman will consider the assumptions that can be relaxed, and the benefits that accrue from having access to panel data as contrasted with crosssection and repeated cross-sections of unrelated individuals.

His third topic involves estimating structural models of nonrandom duration data (that is, data on the length of time until a particular event occurs). Such data are frequently used in studying the spacing of births, the risk of divorce, the duration of a job, or the length of an illness. Duration data may reflect prior individual decisions as well as the outcome of dynamic processes, and for many purposes it is important to be able to distinguish these two forces. As part of this research,

Heckman and Ricardo Barros, an ERC postdoctoral fellow, are estimating economic models of job matching—that is, how well individual workers are suited to their particular jobs—and turnover.

#### Research on Special Populations: Minorities, the Jobless, and Women

The applied research component of Heckman's project includes a continuing study of changes in wage rates of southern blacks in the twentieth centuryspecifically, in the South Carolina industrial labor market between 1910 and 1978. Long depressed, these wages rose substantially in the latter half of the 1960s. Heckman is studying three alternative explanations for this event: the Equal Opportunity Employment Act of 1964, improved educational opportunity, and tight labor markets in this textileproducing state due to increased demand for cloth by the military during the Vietnam War. The outcome of his research will have policy implications for affirmative action and other equal opportunity legislation.

After two decades of nonexperimental research and evaluation, great uncertainty remains about the effects of federally sponsored job training programs on their participants. To reduce this uncertainty, the Department of Labor is sponsoring a project in which a classical experiment will be designed and implemented in order to evaluate programs funded under Title IIA of the Job Training Partnership Act (JTPA)—the successor



V. Joseph Hotz and Eve Weinberg

to the now-defunct Comprehensive Employment and Training Act (CETA).

The JTPA enabling legislation mandates that the U.S. Department of Labor periodically evaluate the effectiveness of JTPA programs, but past evaluations of federal job training programs have used quasiexperimental methods that did not yield valid estimates of program impact. The JTPA Evaluation strategy is to provide valid data by conducting a classical, randomized experiment over a five-year period in up to twenty sites, with approximately 30,000 persons randomly assigned to receive JTPA services or to serve as controls. A sample of approximately 7,500 persons who are eligible for JTPA but have not applied to participate in any of its programs will also be selected and studied to determine who participates and who chooses not to.

Abt Associates is taking the lead in designing the experiment; NORC and

Manpower Demonstration Research Corporation will implement it; and NORC and Abt will analyze the results. As subcontractor to Abt, NORC is collecting baseline and followup data from the program participants and the control group, while Abt Associates is collecting data from the sample of 7,500 who have chosen not to apply. Senior Survey Director Eve Weinberg is NORC project director for the survey component of the study. NORC Senior Methodologist Roger Tourangeau is helping to design the main experiment, and is assisting NORC Technical Director Martin Frankel in the design and selection of the sample of eligible nonparticipants.

As part of NORC's work on the ITPA Evaluation, coprincipal investigators Heckman and ERC Research Associate Joseph Hotz are conducting a study that will model the process whereby lowincome individuals are selected into training programs. This study will address such questions as, Which applicants are selected into programs by program administrators and which are rejected? Of those who are selected, who stays and who drops out? The study of the JTPA selection process will enable economists to learn how the whole population eligible for ITPA differs from those who are actually served by the program, in terms of age, sex, ethnic background, welfare recipiency status, prior earnings and labor force experience, and the like.

Heckman and Hotz will also conduct a study to evaluate alternative methods for assessing the impact of training programs on the subsequent earnings of trainees, to see whether it is in fact possible to obtain reliable data from training programs using non-experimental methods. This aspect of the study is treated in the *Methods* section of this report.

The wage differential between men and women is a subject of considerable and continuing public debate. Theorists and empiricists alike are currently endeavoring to explain the persistence of this wage gap in a competitive environment and to identify the factors that explain it. Research Associate Reuben Gronau analyzed two explanations sometimes offered for the wage gap, using data from the Panel Study of Income Dynamics, a longitudinal survey conducted by the Institute for Social Research at the University of Michigan. Some have argued that women expect to drop out of the labor force when they have children, and therefore invest less than men in their own human capital (e.g., on-the-job training, job-specific education), and thus get paid less. Others have argued that the wage gap results from employers denying women access to jobs that would require some employer investment in training, on the assumption that female staff will drop out of the labor force before such training can pay off.

Gronau concluded that both explanations oversimplify the problem. He found, for example, that women's labor force participation decisions are indeed more sensitive than men's to demographic changes such as marriage, childbirth, and relocation of spouse's job, but he also found that in assigning workers to jobs, employers seem to place much more weight on the past work experience of men than on that of women. This project was sponsored by the National Institute of Child Health and Human Development, as part of a broader program of research into the relationship between job turnover and optimal investment in job training.

In another NICHD-funded project, Hotz and ERC Research Associate Robert Miller examined the dynamic relationship between fertility and women's labor force participation over the lifecycle. Hotz and Miller began by developing theoretical models of the timing and spacing of births and the timing of women's movement in and out of the labor force. Neoclassical economic analysis has espoused the view that family size is the result of parental choice tempered by financial and time constraints, and has ignored the fact that even with contraception, the timing of births is not, in fact, perfectly controllable. Hotz and Miller's model took into account the important random component influencing the arrival-or delay-of births. Hotz and Miller analyzed these models empirically, using data on households from the Panel Study of Income Dynamics. A particular focus of their analysis was the impact of demographic and background characteristics of women upon their conception and labor force participation decisions over the lifecycle.  $\square$ 

### THE FAMILY

ociety's most basic institution-the family-has recently undergone significant change after centuries of relative stability. Having weathered even the shocks of urbanization and the Industrial Revolution, the institution of the family may have changed more, and more rapidly, in the past thirty years than in any other thirty-year period in American history. Until the mid-1950s, the nuclear family generally remained intact, and extended family obligations continued to be respected and maintained even though economic change loosened some family ties, through increasing geographical mobility and the demands of the workplace. Marriage was the norm soon after completion of education; women were encouraged to engage in childcare and household activities; divorce was aberrant and frowned upon; help and intervention from outside sources were discouraged.

The waves of modern social change that first came to public attention only about twenty years ago have fundamentally altered the structure and behavior of the American family. The model family of the fifties-working father, housewife mother, and two or three children-is now in the minority. There is a record number of one-person families, people living alone through choice or necessity. There is a record number of single household heads, mostly women, caring for children. A majority of women are now part of the workforce. Marriages are fewer and later, divorce more frequent, remarriages common. These changes have had their economic as well as social consequences. The most impoverished age group today is no longer the elderly, who were formerly the group most dependent on public and private charity, but children, almost one-fifth of whom now live below the poverty line.

Such conditions provide a fertile opportunity for the contributions of social research. The changes that have occurred in the structure and role of the family represent the sum of millions of individual changes in motivation and behavior in response to events over the years. Ideology and anecdotal evidence are inadequate for achieving a reasoned understanding of the issues and problems involved. What is needed are data that will accurately describe the facts of the situation (within scientific limits of precision) and careful analysis of these facts in order to identify the causes and consequences of these changes. No less important for understanding is reliable data on the attitudes and motivations of representative samples of the relevant populations. Without such data, public debate about policy alternatives lacks a vital element.

It is not surprising, therefore, that in 1985 and 1986 research on problems and issues of the family occupied a major place in NORC activity. NORC is singularly equipped to contribute to public discussion of such major social issues because it is one of a very few institutions that can study them in broad focus. NORC does not just "do surveys"; it does not just analyze data; it does not just convene meetings to talk about social

problems. It does all three in an ideologically diverse and interdisciplinary environment.

The following paragraphs describe some of the precursors of NORC's current projects in the area of the family as well as its present research agenda. That agenda illustrates the variety of research methods that NORC employs—large-scale data collection, economic analysis, application to public policy—and the synergy that results as the work of one project influences and is influenced by the work of others.

#### Using Surveys to Study the Family

The family has been an object of social science research for at least one hundred years, but not until the development of sample survey techniques in the 1930s and 1940s was it possible to examine large and representative samples of families using standardized personal interviews. Before that time, researchers were dependent upon anthropological techniques among small groups, self-administered questionnaires addressed to college students, magazine subscribers, or other special groups, or secondary analysis of statistics collected by the U.S. Census or other sources.

Even when sample surveys became accepted as a conventional research tool, family life and family problems were an infrequent object of attention. The Cantril-Strunk compendium, *Public Opinion*, 1935-1946, lists only seven questions under the rubric "Family" asked in the

United States during the period. One of these asked people what they considered to be the "ideal size of family," and this question, frequently repeated over the years, is one of the few for which it is possible to chart trends in national opinion over a 50-year period. Other questions dealt with number and relationships of persons in the home and with the availability and interest of married women in taking on outside employment.

Given the origins of survey research, it is not surprising that survey methodology was not immediately applied to family issues. The advertising and market research agencies who were among the first to interview samples of consumers were a long way from their present sophisticated interest in "lifestyle" and "market segmentation," and their questions focused on simple consumer preferences and reports of behavior. The Gallup Poll and other published national surveys were attuned to public issues and political preferences. Until NORC began activity in 1941, to be followed by the Survey Research Center at the University of Michigan in 1947, there was no academically affiliated research group capable of carrying out nationwide surveys.

Additionally, the early survey researchers were disposed to tread gingerly in areas that people might consider "private" or "personal." Family income, for example, does not seem to have been asked in any national survey until 1942, and then only when preceded by an elaborate explanation of the need for the data "for statistical purposes." Sexual at-

titudes and behavior, use of alcohol and drugs, "dread" diseases, family violence and disputes, divorce—all of these were generally regarded as unsuitable subjects to raise in a survey interview. It was assumed that if the respondent did not break off the interview at that point, he or she would refuse to answer the question or would answer untruthfully. And it was, of course, in the area of family life that these "personal" questions assumed the most relevance.

Though it was not directly targeted for study, the importance of the family as an independent variable affecting attitudes and behavior on many other issues was often obvious. Two surveys conducted by NORC for the Office of War Information in 1942-43 provide examples. By 1943, for the first time since the Civil War, the United States faced a shortage of labor. If wartime needs were to be met, it was estimated that almost two million women would have to be recruited to the civilian labor force. But NORC's national survey of 2,000 women at that time revealed widespread resistance among nonemployed women to entering the labor force, with the most extreme resistance expressed by women with children. Again, in a study of absenteeism in war industries, rates of absenteeism were found to vary by industry and according to local working conditions. Independent of these factors, however, absenteeism rates were significantly higher among women workers and among workers whose spouses were employed. Such workers were simply forced to take off from work

to take care of family and home obligations.

The postwar period witnessed a burgeoning of survey activity and a greatly expanded use of the survey method by academic researchers interested in the study of family life and problems. Both in its own foundation-supported studies and as contractor for data collection and other services to outside scholars, NORC conducted a large number of familyrelated surveys between 1945 and 1970. As the public became more aware of the uses of surveys and as researchers became more proficient in structuring their interviews and phrasing their questions, it became apparent that hardly any subject remained taboo. Assured of confidentiality and questioned by a well-trained interviewer conducting a serious inquiry, respondents were found to be generally eager to talk about their own lives and problems. The following studies illustrate the range of content covered by studies conducted during the period.

The first national survey of adult drinking behavior and problems of alcoholism (1946)

The first national survey of family medical costs and sources of payment (1953) A survey of homeless men on Chicago's skid row, emphasizing their lack of family ties (1958)

James S. Coleman's study of "The Adolescent Society" with questionnaire data from a sample of high school seniors and their parents (1958)

The first national survey of the health and welfare of older people, supplemented by interviews with the persons listed as "responsible" for them (1961)

Detailed interviews with a national sample of men on the relationships between occupation and child-rearing practices for Melvin L. Kohn's "Class and Conformity" (1964)

A study of role shifts in widowhood, based on personal interviews with a representative sample of Chicago women recently widowed (1968)

Attitudes toward homosexuality and laws covering sexual behavior, for Kinsey's Institute for Sex Research at Indiana University (1970)

Trends that first became widely apparent in the late sixties provided the impetus for still another surge of interest in research on the family. The "youth revolution", sparked by the war in Vietnam, led many young people to reject parental, educational, and governmental authority. At the same time, more and more women were entering the labor force, sexual attitudes and mores were changing, and feminism became an issue.

It was at this same time that the federal government first began to sponsor large-scale social research. Prior to that time, it had generally been regarded as inappropriate and even dangerous for federal agencies to inquire into people's opinions and private behavior. But President Johnson's War on Poverty created large numbers of new and experimental programs, and Congress began to insist on evaluation studies to determine their usefulness. Because these programs were specifically aimed at improving the

health, education, and welfare of the poor, they inevitably required factual knowledge of family life and practices. And because of the legal and philosophical strictures against direct interviewing of Americans about sensitive issues of opinion and behavior by the Bureau of the Census or other federal agencies, it became the government's practice to contract with private research agencies for such studies.

NORC's reputation for methodological innovation and for maintaining the highest standards of data quality have naturally made it a strong competitor for these contract awards. Indeed, for the last fifteen years or more, such government contracts or subcontracts have accounted for up to 90 percent of the dollar volume of NORC survey activity. And as the government's need for social statistics has increased in magnitude and complexity, so too has the work of the NORC Survey Group become more and more demanding.

The Child Supplement to the National Longitudinal Survey of Labor Force Behavior/Youth Cohort. Among the more ambitious of these federal data-gathering projects is the National Longitudinal Survey of Labor Force Behavior/Youth Cohort (NLS/Y). This survey, which NORC has conducted since its inception in 1977, under subcontract to the Center for Human Resource Research at Ohio State University, is funded by the U.S. Department of Labor.

As reflected in the survey's full name, the original NLS/Y questionnaire focused

on the labor market experiences of this youthful sample (and the study is described more fully in the Labor Force section of this report). Thus, it included comprehensive employment histories, detailed records of all job training experience, school enrollment data, information on other members of the respondent's households, detailed income and earnings data, information on the respondent's health, and demographic information on respondent and parents. Through the annual interviews, NLS/Y also collects a continuing marital history for all female respondents. The importance of this sample as a national database on American youth has been underscored by the participation of other Federal agencies in supporting this research, notably the National Institute of Child Health and Human Development (NICHD), the U.S. Department of Defense, the National Institute of Alcoholism and Alcohol Abuse, the National Institute of Education, and the National Institute on Drug Abuse. Since 1982, for example, NLS/Y has collected detailed information on childcare arrangements and on self-reported alcohol use. A detailed description of the NLS/Y dataset is included in the 1986 National Longitudinal Survey Handbook, which is available on request from the Center for Human Resource Research. The NLS/Y data provide an inclusive eight-year record of the experiences of this large and nationally representative sample of young people, aged 21 to 28 in 1986, as they have moved through their formative late adolescent and early adult years.

As the value of this unique dataset has increased year by year, attention turned to its additional potentialities for research use. By 1986, approximately 5,500 women remained in the sample and nearly 3,000 of these were mothers with a total of about 5,300 children. The children ranged in age from infancy to age 16. These facts suggested the stunning opportunities that could be provided to researchers on the family if the NLS/Y incorporated a Child Supplement. The birth and subsequent health and activity status of each child has been reported on previous rounds of the survey, and the record also includes the detailed history of the mother's activities since 1979. With the support of NICHD, the Carnegie Corporation of New York, and several private foundations (Ford, Grant, Hewlett, Rockefeller, and Sloan), the 1986 survey added to the database extensive assessment information on the children of the female respondents.

Using a battery of thirteen separate instruments suggested by a panel of child development experts, NORC obtained measures of the cognitive, social, and physical development of these children, about whose mothers the NLS/Y had collected detailed histories over an eight-year period. This was the first time that some of the tests were used outside of a clinical setting, and the first time that many were administered to a national sample or to large numbers of black or Hispanic children.

The tests were age-graded. Infants less than 8 months old were only weighed

and measured. Children aged 8 months to 4 years were given a Memory for Location test, in which a small doll was placed under one of two to six cups, depending on the child's age; the cups were screened from the child's view for a varving number of seconds, and the child was then asked to select the cup that held the doll. One- and two-year-olds were also given a test in which they were asked to identify their nose, ears, and other body parts for the interviewer. Children between 3 and 7 years of age received the Verbal Memory Subscale of the McCarthy Scale of Children's Abilities. In this test the child repeats words or sentences spoken by the interviewer, then listens to and retells the essential aspects of a short story.

All children over age 3 were given the Peabody Picture Vocabulary Test, which measures the child's "hearing vocabulary" of standard American English words. In this test the interviewer says a word and the child points to the one picture among four that best illustrates the meaning of the word. The words increase in difficulty as the test proceeds, and it is terminated when the child reaches a specified level of failure. All children over age 5 who had attended school received the Peabody Individual Achievement Test subscales for mathematics and for reading recognition. Children 7 and older were assigned the Digit Span subscale of the Wechsler Intelligence Scale for Children, in which the child listens to a sequence of numbers and is asked to repeat them in consecutive and then in reverse order. Finally, children aged 8 years and



The complex training for the NLS/Y Child Supplement was presented to interviewers across the nation on videotape

older provided a Self-Perception Profile by answering a battery of questions that ask them to select which of two alternatives describes how they usually act.

The child assessments were supplemented by maternal reports on a number of scales that measure a child's temperament or behavioral style: a description of "how my infant/toddler/child usually acts", the Behavior Problems Index, and Motor and Social Development. These scales, which are age-graded, address such areas as activity, positive affect, irritability, attachment, and fearfulness. Interviewers rated the child's shyness at first meeting and at end of the session, as well as cooperation, interest, and motivation during assessment. Interviewers also provided information on the mother's behavior during the session, and on their own perceptions of the quality of the home environment. In addition, the mothers provided information on various aspects of the child's home environment.

Round 8 of NLS/Y, with the accompanying Child Supplement, was carried out in the spring of 1986 with NORC Senior Survey Director Woody Carter as project director. The tests were administered to 4,957 children, for a response rate of 92.5 percent of the total eligible for interview. These children represent, within a very small margin of error, all children ever born to a probability sample of women aged 21 to 28 in 1986. The original oversampling of black, Hispanic, and disadvantaged white youth provides over 1,000 children born to mothers in these groups, and there are at least 500 children of every age from 1 to 5.

The data provided by the NLS/Y Child Supplement will thus enable researchers for the first time to study the physical, emotional, and intellectual well-being of a large group of children and to relate these to the mother's occupation, education, physical health, and family history over the last eight years. The children's test scores will help to illuminate the effects of a host of variables: parents' separation, divorce, nonmarriage, or remarriage; mother's employment and type of job; various kinds of childcare arrangements; amount and kind of parental input in terms of time and attention given the child; forms of social intervention such as welfare and remedial education; and differences on various dimensions among demographic groups.

# Applying the Principles of Economics to Research on the Family

A similar opportunity to enhance the value of an ongoing survey occurred when NORC was awarded a contract by the National Center for Education Statistics (now the Center for Education Statistics) to carry out a fifth followup of the National Longitudinal Study of the High School Class of 1972 (NLS-72). Between 1972 and 1979, this nationally representative sample of 23,000 high school seniors had been interviewed five times to provide data on their postsecondary education and employment histories. Budget constraints prevented followups for several years after the 1979 interviews. But in the face of renewed concern about the effects of education and with the inauguration of High School and Beyond as a longitudinal study for the eighties, the value of the 1972 sample as a comparison group became readily apparent, and a 1986 followup was scheduled. (Both of these studies are described in the Education section of this report.)

Since 1980, a group of economists in NORC's Economics Research Center have been engaged in a long-term program of "Economic Analysis of the Family and Demographic Change." In anticipation of the 1986 round of interviewing of the NLS-72 group, who would be, on average, 32 years of age at the time of interview, NORC Research Associates Robert Michael and Robert Willis obtained a grant from the National Institute of Child Health and Human Development to add

a special supplement to the 1986 questionnaire. Beyond the detailed information concerning the schooling and labor market experience of the group collected in the main survey instrument, the supplement provides a full chronology of each respondent's marital, fertility, and cohabitational events, as well as current information on each individual's money and time expenditures for and from relatives and friends. The result is a major supplement to this already-significant social science database.

NORC economists will be making effective use of this database on several projects included in the program of analysis of the family. In the first of these, Michael and Willis will describe the variety of living arrangements experienced by the group and relate them to the economic conditions of the individuals. Special attention will be given to a detailed analysis of cohabitational histories of the members of this cohort, as well as the formal marital events recorded in the data. Fertility patterns will also be studied, as will flows of money from individual respondents to their parents and children.

Robert Willis and Yoram Weiss are using the NLS-72 data to study the implications of marital dissolution. Using a detailed series of questions on post-divorce settlements and outcomes that were included in the supplement for this purpose, the investigators will examine such issues as the relationship between earning capacity and divorce settlements; the effect of children on divorce; the effects of specific investments in marriage on divorce; the effects of divorce on the



ERC Research Associates studying the family include James Walker, Thomas Mroz, Robert Michael, Yoram Weiss, and Robert Willis

welfare of children and of each parent; the legal costs of divorce and compliance; and the effects of AFDC and other public transfers on divorce settlements.

Two additional projects that employ the tools of economic analysis to study the interplay among fertility, economic and social behavior, and the functions of the family as a social institution were conducted during 1985-86. James Heckman and James Walker, along with Burton Singer, utilized a longitudinal dataset from Sweden to analyze the effect of the absolute and relative increase of female wage rates on that country's fertility. They found that increases in female wages in Sweden have a strong negative effect on fertility rates. However, indirect evidence suggests that Swedish government intervention programs, designed to provide women with equal access to the labor

market, may have a mitigating influence on these policies. Heckman and Walker have also conducted several investigations of some biological aspects of fertility through the study of a dataset from a Hutterite community living in the north central United States. One line of research examines the time period between marriage and first conception in order to better explain fecundability-that is, the probability of conception occurring over a given time period. These researchers have also evaluated the goodness of fit and other criteria in the application of models of fertility dynamics to this "natural fertility" population.

In 1986, Gary S. Becker received a National Institutes of Health MERIT (Method to Extend Research in Time) Award, which will support his study of "Altruism, Fertility, and Population Growth," funded by NICHD, for a period of up to ten years. This study will build on Becker's earlier work on altruism toward children, interactions between the quantity and quality of children, and the effect of parents' time on the cost of children. The current study will analyze a number of issues, including the effects on fertility of such economic factors as wage and interest rates. This research and more of Becker's work is described in "Gary S. Becker," in a later section of this report concerning the Economics Research Center.

## Using Research to Address Issues of Family Policy

The collection and statistical analysis of social science data are sometimes seen as

academic wool-gathering of little practical consequence. In point of fact, modern statistical programs lie at the heart of government, corporate, and institutional policymaking, and data compiled and analyzed at NORC often play an important role in public decision-making.

In 1980 NORC published the first volume in its Children of Illinois series-The State of the Child-under the direction of Harold Richman, now Executive Director of The Chapin Hall Center for Children, and Mark Testa, Chapin Hall Faculty Associate. The volume collected and organized a wide range of statistics, gathered from state, federal, and local sources, regarding Illinois children. Areas covered included demographics, family life, poverty, foster care and adoption, health, violence, youth alienation, education, and employment. The study generated widespread discussion and received strong editorial support from the press. In consequence, Illinois Governor James Thompson appointed a Task Force on Children to develop recommendations from the study's findings.

One of the recommendations of the Task Force was for a periodic updating of the State of the Child report, and this recommendation was carried out with Chapin Hall's publication last year of *The State of the Child: 1985* by Mark Testa and Edward Lawlor. This report, like the earlier one, consists entirely of statistical tables and explanatory text. No recommendations are made; no particular solutions are proposed for the problems that the statistics document.

The picture the report paints is a somber one. The key indicators reveal that a larger proportion of children now than in 1980 live in poverty. Their fathers are more likely to be absent, their welfare support is more meager, their family care is less secure, and their participation in the labor force is more problematic.

Nearly one child in five now lives in a family with cash income below the national poverty line. Among households headed by a single mother, 47 percent of white children and 72 percent of black children are supported by family income below the poverty threshold. Nearly onefourth of all children born in Illinois are to mothers who are unmarried at the time of childbirth, and more than one-third of these are born to unmarried teenaged mothers. The data show that 10 percent of white and 40 percent of black children live in families in which the father is absent. A declining fraction of children are receiving welfare assistance from AFDC, as a result of greater restrictions on eligibility and the failure of Illinois's maximum grant allowance to keep pace with inflation. For families with no other reported source of income, the combined value of welfare program benefits stands at less than 84 percent of the state AFDC "standard of need." Nineteen percent of white youth are counted as unemployed: for Hispanic youth the figure is 36 percent, and for blacks 55 percent. Concern is expressed that the strong association between racial and ethnic background and the indicators of disadvantage presented in the new report is even more striking than it was five years ago. (The



The project team for The State of the Child: 1985: Robert Goerge, Mark Testa, Edward Lawlor, Matthew Stagner, Mary Ann Hartnett, Linda Bowen, and David Engstrom

findings of this report are presented in greater detail in the section on Chapin Hall later in this report.)

Another noteworthy example of the use of methods developed for research to affect public policy is NORC's work, with funding from the Clark Foundation and the Illinois Department of Children and Family Services (DCFS), in reorganizing the entire child welfare database of the state of Illinois-and thereby making the database accessible both to policy planners and to caseworkers using microcomputers in their local offices. This database is large and complex: some 100,000 children have received services from DCFS, and 27,000 children are served on a typical day. Until recently, user access to information on children in foster care was limited by the remoteness of the data,

lack of standardization in forms, and long delays in assembling information on children who had received DCFS services. The project, directed by Mark Testa, should result in better quality data on child welfare, fewer children who get "lost in the system," and improved control of administrative costs.

Adolescent motherhood, a policy problem of increasing national prominence, has been the focus of sustained research interest at NORC since 1981, when the Adolescent Family Life Study surveyed 1,900 Illinois mothers aged 18 or younger who were receiving Aid to Families with Dependent Children, and followup interviews were conducted with a subsample of this group in 1983 and 1984. Among many important findings evident from this research was the fact that fewer than 20 percent of these teenaged mothers were raising their children alone in their own quarters. More than one-half were residing with one or both of their parents.

A new study, under the direction of Faculty Associates Dennis Hogan and William Parish, will investigate the influence of family background, personal characteristics, and family and friend support networks on young women's response to unwed motherhood and on family outcomes. Special coding of previously unanalyzed data from the first six rounds (1979-1984) of the NLS/Y will be employed to obtain information on potential family and friend support networks and to examine the role of these networks in four particular dimensions of family functioning: prenatal and postna-

tal health care, family income and poverty, paid and unpaid childcare, and the safety and emotional security of the home.

As each of these and other NORC research activities continues to add new factual knowledge and to improve public understanding of the forces operating on the contemporary family, there seems little likelihood of diminished demand for the sort of research that NORC is so uniquely able to provide. The combination of NORC data collection skills, intellectual rigor, and practical applications to policy formation provides an important national resource for the continued study of the American family.

### HEALTH AND HEALTH CARE

fter two years of preparation and testing, a research consortium headed by Westat, Inc. and NORC launched in 1986 the largest and most ambitious social survey ever conducted by a private agency. The study is called the National Medical Expenditure Survey (NMES) and it will collect, by means of personal interviews with nationally representative samples of Americans, detailed information on their health care utilization and expenditures over the course of a year. Drawing on experience gained from a series of similar surveys begun by NORC more than thirty years ago, NMES represents probably the most sophisticated application vet seen of the techniques and methods of survey research to a vexing social problem.

The skyrocketing costs of health care have become a familiar issue to all Americans. In the year of the most recent precursor of NMES, 1980, total national health expenditures were estimated at \$248 billion, or 9.1 percent of Gross National Product. For the year 1985, the Health Care Financing Administration estimated total health expenditures at \$425 billion, or 10.7 percent of GNP. In response to pressures from government, employers, insurers, and the general public to find some means of restraining these huge expenditure increases, many important changes have been taking place in the administration and practice of medical care in the United States. The 1987 NMES is designed to document their impact on the cost of medical care in the nation.

The most important of these changes has involved hospital admissions, which have actually been declining in recent years. The occupancy rate in U.S. hospitals in 1985 was down to 69 percent, having declined steadily in recent years-from 85 percent in 1960, for example, and from 77 percent as recently as 1982. This has come about through more rigorous testing of actual need of hospital admission and through the growth of alternative sites for services formerly performed in the hospital. Tests and procedures, including surgical procedures, that used to be performed on an inpatient basis are now conducted in outpatient or office settings. The length of hospital stay has also been declining since 1980, with much care formerly provided in hospitals now being shifted to home health agencies, skilled nursing homes, and ambulatory care centers.

Changes in the financing of medical care are also expected to contribute to a slowing of increase in health costs. Medicare, for example, formerly reimbursed hospitals through a system based on the actual costs of services provided to each patient. This program has recently changed to a prospective payment system based on average cost per case of specified diagnosis-related groups. Hospitals are thus penalized if their average cost per case for a given condition is higher than the norm and are rewarded if they can provide care at a lower cost. Other changes in the financing of health care have come about through prepaid medical care delivered by HMOs, increasing use of self-insurance by employers in the

private sector, and the rise of Preferred Provider Organizations.

Measurement of the effects of these changes is an important but very difficult task. Statistical information compiled by government and industry sources can provide the basis for estimates of national health expenditures in aggregated form, but the distribution and impact of these costs among American families can be determined only by survey methods. A brief review of past surveys of this kind will indicate the continuity and development of research on health care in the United States and the important role that NORC has played in collecting the data needed to shape the nation's policies with respect to health care and health costs.

## Early Surveys of Medical Expenditures

Prior to the mid-fifties, statistics on the nature and amount of health expenditures had to be derived from often-conflicting estimates of gross national expenditures for particular types of goods or services or from local or specialized studies that could not be generalized to the total population. In 1953, in a study sponsored by the Health Information Foundation, NORC conducted lengthy personal interviews with a probability sample of the nation's households.

The interviews covered acute and chronic illnesses experienced by household members during the preceding year and the costs and sources of payment for medical care and services received. This groundbreaking study—published by

McGraw-Hill in 1956 as Family Medical Costs and Voluntary Health Insurance: A Nationwide Survey—permitted for the first time a systematic analysis of the impact of general and specific health costs on the American family and the distribution of these costs among families of varying size, income, place of residence, and age of household head. The study also revealed the extent of voluntary health insurance coverage among different types of families and the effectiveness of such insurance in meeting various kinds of health costs.

Four similar surveys were conducted by NORC and the Health Information Foundation (later the Center for Health Administration Studies at the University of Chicago) in 1958, 1963, 1971, and 1975. These built on the findings of the initial effort in 1953 and permitted the analysis of trends in health care utilization and costs during a period of rapid change caused by the introduction of Medicare and Medicaid and by the development of medical technologies and forms of medical practice.

All of these early surveys, of course, were dependent on the survey techniques and methods of their time and on the resources available to them. It was apparent from the first, for example, that the memories of household members, especially for minor events and expenditures, were very often unreliable. Most people had only sketchy knowledge of the terms of their insurance policies. Even when their memories and records were at their best, people were often ignorant of par-

ticular costs, as medical providers increasingly dealt directly with insurers. Efforts to construct questionnaire forms covering, in a standardized way, all of the variations in costs and payment that accompany the delivery of medical care in the United States were only partially successful. Each of these four early surveys showed improvement over its predecessor, as a result of changes in interviewer training and supervision, continued refinement of the questionnaire, and increased reliance on medical providers for information not obtainable at the household level. Such improvements, however, were far from wholly successful in overcoming the basic weaknesses of the early efforts.

One major and persistent weakness was the reliance on a single interview to collect extensive and complex information by means of retrospective reporting for the preceding twelve-month period. Problems of memory loss, incomplete records, and "telescoping" (i.e., reporting earlier incidents as part of the survey year), were extremely troublesome. The obvious remedy was to conduct multiple interviews with the same families over the survey year, but the escalating costs of interviewing and other survey activities during the 1970s made such a design entirely too expensive for private sponsorship.

A second major weakness of the early surveys was their relatively small sample sizes. Although large by private survey standards of the time, with approximately 3,500 families, these surveys were much

too small to sustain extensive analyses of population subgroups. There were, for example, only about 350 black families in each of these early surveys. This number was sufficient to provide reasonably precise estimates for the group as a whole, but insufficient for looking at black families with different characteristics and varying health needs. Similarly, the sizes of the samples did not permit detailed analyses of other minority groups such as Hispanics, the elderly, rural families, or very poor families, or of the costs of particular health events such as pregnancy, cancer, or lengthy hospitalizations. But again, the remedy for this weakness-funding a larger survey with a sample size of 10,000 or more-was far beyond the resources of private funding agencies.

### Federal Government Sponsorship

The escalating costs of health care in the mid-seventies, and the need for information on the impact of these costs and their distribution among various sectors of the American public, prompted the U.S. Department of Health, Education and Welfare (HEW) in 1976 to issue a request for proposals to conduct a much larger survey. The specifications for this survey were based on the earlier NORC studies, but its scope was much more ambitious. It was to cover a national probability sample of 14,000 households (approximately 40,000 individuals) and it would consist of five interviews over a fourteen-month period. There would be an introductory interview to collect basic household and general health informa-



Mary Cay Burich

ion, followed by four additional interviews at three-month intervals to collect medical care and expenditure data. Furthermore, all data collected during the trimonthly interviews would be quickly converted to computer printouts. These would be shared with respondents at each interview as an aid to memory and as a means of allowing respondents to verify and if necessary amend the data.

Because neither NORC nor any other single research agency possessed the resources to carry out all the required tasks on the specified time schedule, NORC entered into a consortium with Research Triangle Institute (RTI) of North Carolina and Abt Associates of Cambridge, and this group was awarded the contract. NORC played the lead role in working with HEW staff to develop the questionnaire and other field materials. NORC and RTI divided the data collec-

tion between their national field staffs, with NORC responsible for training materials and activities. Abt Associates had responsibility for preparing the computerized feedback for interviewer and respondent use during the subsequent interview, and RTI carried out the processing of data. This survey, the National Medical Care Expenditures Survey (NMCES), also included a survey of medical providers, in which individuals and institutions named as providers of particular services by a subset of the households were contacted for record information on services provided, the associated costs, and sources of payment. In addition, data were collected from employers and health insurers on options offered to employees and the amount and kinds of coverage offered.

This survey was carried out successfully in 1977 and provided material for a lengthy series of HEW reports and publications and also, through public use tapes, for analysis by health and medical researchers in universities, government agencies, medical schools, pharmaceutical companies, voluntary health agencies, and elsewhere. The NMCES study was substantially replicated in 1980 under the title, National Medical Care Utilization and Expenditure Survey (NMCUES). This survey included a much smaller core sample (6,000 households), but added a Medicaid component in which 1,000 individuals were selected from Medicaid rolls in each of four states. No separate provider component was included. Again, RTI and NORC shared all of the data collection, and the firm of SysteMetrics, Inc. assisted with the Medicaid record check.

#### Development of NMES

The wealth of information provided by NMCES and NMCUES, and the multitude of uses to which the data could be put by health policy researchers, demonstrated a clear need for such surveys on a regular periodic basis. At least two major obstacles, however, have made it difficult to establish a regular program of tracking medical expenditures at the household level. First, such surveys are extraordinarily complex; they require large samples, and if they are to be useful, the requirements of accuracy and detail in the information obtained must be very exacting. Consequently, the cost of these surveys is quite high. Second, the rapid changes that continue to take place in both the delivery and financing of medical care and the techniques and methodology of survey research make it impossible as well as unwise simply to repeat a prior survey without change. Questionnaires and procedures that worked well in 1977 and 1980 are likely to be inappropriate today because of changes in medical practice or technology and because of improved techniques of data collection and data processing.

By 1984, however, with the NMCUES data increasingly out of date, pressure from both public and private health agencies was building for the collection of current statistics on family medical expenditures and sources of payment. Plans were then developed for a National Medical Expenditure Survey to be con-



Senior staff of the NMES project include Senior Survey Directors Sara Loevy, Mary Cay Burich, Karen Tourangeau, and Miriam Clarke, and (second from left) Project Manager for data processing Suzanne Turner

ducted, in 1986-1989, with joint funding from the National Center for Health Services Research and the Health Care Financing Administration. The proposed survey would be even more ambitious than its predecessors and would derive additional financial support from other federal agencies to include several new components. Among these components would be special samples of American Indians, Alaskan natives, and persons in institutions, with special emphasis on the mentally retarded and the population residing in nursing homes. The first two groups constitute only small proportions of the sample in the usual survey, while the institutionalized population is entirely excluded from surveys of households.

An early step in preparing for NMES was a thorough analysis of the NMCUES methodology in order to increase ac-

curacy and improve cost efficiency. In response to a request for proposals, NORC, in collaboration with Westat, Inc., was awarded the contract for an evaluation of NMCUES data collection and data processing procedures. Another preparatory step was a feasibility survey to test in the field revised instruments and procedures and to provide a vehicle for various methodological experiments. This contract was again awarded to Westat-NORC. The pilot study was conducted on a total sample of 600 households in ten metropolitan areas and rural countries; certain key groups, such as blacks, Hispanics, the poor, and the elderly, were deliberately overrepresented in order to ensure sufficient test-data experience with these groups. (Both of these studies are described in the Methods section of this report.)

The final step in the government's preparation for NMES was the issuance of a request for proposals in October 1985. The specifications for this survey gave unmistakable evidence that NMES would be one of the most ambitious and most complex tasks that survey researchers had ever been invited to perform. NMES was designed as a set of several interlocking surveys. Its various components can be described briefly, as follows:

HHS: A core sample of 14,000 U.S. households containing oversamples of blacks, Hispanics, the poor, the elderly, and persons with functional limitations. These households will be interviewed five times over an eighteen-month period on their use of health care services, expenditures and sources of payment, insurance coverage, employment, income and assets, and demographic characteristics for the 1987 survey year.

SAIAN: This will collect the same type of data as the HHS, from a sample of 2,000 American Indian and Alaskan Native households living on or near Indian reservations and eligible for medical care in Indian Health Service facilities.

IPC: An Institutional Population Component including about 10,000 patients selected from 700 nursing and personal care homes and 775 facilities for the mentally retarded.

MPS: A Survey of Medical Providers named by a random 20 percent sample of HHS and SAIAN households, and of all providers reported by persons with hospitalizations or with more than fifteen medical visits, all providers of home health services, all providers reported for Medicaid beneficiaries, and all providers for whom HHS or SAIAN respondents did not know the amount of charges. This component will include approximately 20,000 providers, including physicians; hospital inpatient, outpatient, and emergency room facilities; and home health care providers.

HIPS: A Health Insurance Plans Survey of all employers and health insurers reported for an adult participant in HHS or SAIAN.

Employers will be asked for information on health insurance and other fringe benefits available to the person to verify the reported coverage or lack of coverage. Copies of all insurance policies, including those that are not work-related, will be collected and abstracted.

PIPS:

A Patient-Identified Physician Survey that will obtain data on practice patterns and professional characteristics of all physicians (approximately 24,000) identified in the HHS.

Clearly, no one survey firm would have the resources and the experience to undertake such a comprehensive research effort. The winning proposal was again submitted by Westat and NORC, with the help of subcontractors to carry out the specialized tasks of SAIAN and the abstracting of insurance policies.

This unprecedented survey, under the supervision of NORC Senior Survey Director Mary Cay Burich and her counterpart at Westat, will demand sophisticated management skills and strategic planning to keep the various tasks on schedule and within budget and to maintain the required high level of data quality. Screening and pretesting activities began in the fall of 1986. Interviewing for the Household Survey and the Institutional Population Component will begin in early 1987. Data collection for the various components continues into 1988.

### Other Major Health Research

NORC's participation in the NMES

project represents only a part, and by no means the largest part, of its work in the field of health research during the years 1985-86. During this period, NORC was involved in fourteen different health-related projects. All of these are briefly described in the list of "NORC Projects: 1985-86." Four of these surveys are described here to illustrate both the range of issues under study and the variety of survey methods and procedures employed to study these health-related issues.

The Air Force Health Studies constitute a research program designed to investigate the long-term health consequences of military service in Southeast Asia during the Vietnam conflict. NORC conducted health status interviews with 8,000 veterans by telephone, and scheduled two-day medical examinations of 2,300 additional veterans at the Scripps Medical Clinic in La Jolla, California. In the course of the examination, NORC interviewers on site completed two-hour personal interviews that focused on health issues, marital and family history, fertility, child heath, smoking, drinking, exposure to toxic substances, leisure activities, and residence history. Interviews were also conducted by mail, telephone, or in person with the spouses of 1,900 of these respondents. The study was conducted under subcontract to Science Applications International Corporation, funded by the U.S. Air Force.

For the National Cancer Institute, under contract with the Fred Hutchinson Cancer Research Center of Seattle, NORC



Senior Survey Director Shirley Knight, project director for the CCOP evaluation

carried out a two-wave evaluation of the Community Clinical Oncology Program (CCOP) that is funded by NCI. CCOP disseminates information on state-of-theart procedures for treating and managing cancer to community-based physicians, who provide most of the cancer care in the United States. The survey's experimental design called for telephone interviews with oncologists and other cancer-treating physicians in twelve communities, eight that had a CCOP program and four control areas that did not. The interviews collected data on the nature of the physician's practice, usual methods of diagnosing and treating various types of cancer, referral patterns, knowledge of and attitudes toward CCOP, and his or her evaluation of the treatment of cancer in the community. The interviews were conducted by means of NORC's Computer-Assisted Telephone Interviewing program (CATI).

After a three-year lapse, NORC carried out in 1985-86 a tenth replication of the National Ambulatory Medical Care Survey (NAMCS) for the National Center for Health Statistics. This survey, for which NORC developed the basic methodology, was first conducted in 1973. During the course of a year, a probability sample of U.S. office-based physicians were personally contacted by NORC interviewers and asked to fill out a Patient Record form for each of a randomly selected group of patients who visited their offices during the following week. The forms provide data on the demographic characteristics of the patient, complaint or symptoms, diagnosis, tests or treatments provided, medications administered or prescribed, disposition of the case, and expected source of payment. Innovations in the most recent NAMCS included an increase in sample size to 5,000 physicians and development of an online coding and data entry system.

A fourth major health project during 1985-86 was the Physicians' Practice Costs and Income Survey (PPCIS), conducted for the Health Care Financing Administration. This study built on a series of surveys that NORC carried out in 1976-1978 to provide HCFA with information needed to refine the Medicare Economic Index (MEI). That index, introduced in 1975, tied Medicare reimbursement to the actual costs of practicing medicine rather than to the prevailing charges of local physicians. The 1976-78 surveys, conducted by telephone, collected data on actual current costs of medical practice, such as labor, space, equipment, and insurance, thus permitting changes in the MEI to reflect price inflation. Indeed, the surveys revealed that these costs had risen by 79 percent since the MEI's base year, 1975.

In 1984 NORC performed a thorough evaluation for HCFA of the methodology used in the 1976-78 surveys, and redesigned those studies to produce the PPCIS design, with the goal of creating an optimum dataset from physicians on their current practice costs, reimbursement, and related issues. Following this analysis and redesign, a full-scale study of 5,000 physicians was conducted by telephone in 1985, using NORC's CATI (Computer-Assisted Telephone Interviewing) system. This new study examined physician participation in public programs, such as Medicare and Medicaid, and in alternative health plans. It also examined the effect of the prospective payment system on hospital care.

In 1986, NORC began preparations for a 1987 telephone reinterview of these same physicians to provide further information on such issues as the actual costs of malpractice insurance, the reasons for their choosing to sign or not to sign the Medicare Physicians Participation Agreement, and the time and relative complexity of different surgical and medical procedures. This followup is being funded by the U.S. Department of Health and Human Services—specifically, by HCFA and the Office of the Assistant Secretary for Planning and Evaluation.

### THE SOCIAL FABRIC

he United States is a nation of 240 million people who have many and diverse individual interests. These interests reflect differences in values, preference, and lifestyles, which are in turn influenced by such demographic factors as age, gender, economic status, and place of residence. As de Tocqueville observed 150 years ago, the American political and economic structure allows and encourages the free association of like-minded individuals into groups to pursue their common goals. The activities of these groups, according to de Tocqueville, are based on "selfinterest rightly understood"-that is, the activities are designed to achieve or maintain the groups' goals but to remain within the limits of a stable democratic society that offers protection to all.

This is what we call "the social fabric." It is a web woven of shifting group interests that sometimes blend and sometimes conflict. The fabric is generally elastic, so it can accommodate a great deal of tension here and there, but the fabric that binds us together is not impervious to rips and tears that can damage the whole community. An important part of NORC's work has always dealt with the social fabric. Indeed, one of NORC's first major studies, conducted in 1942, concerned itself with intergroup relations-specifically, the attitudes of whites toward blacks-and this and similar social issues continue to be subjects of investigation right down to the present.

### The General Social Survey

The best known of NORC's surveys in

this area is the General Social Survey (GSS). The GSS is the data collection arm of the National Data Program for the Social Sciences, which was established in 1972 with support from the National Science Foundation. Its purpose is to gather and disseminate basic data on the attitudes, values, and behavioral attributes of the American people, and to track change and stability in these items over time. The principal investigators are NORC Research Associate and former Director James Davis of Harvard and Senior Study Director Tom Smith; they are advised by a board of overseers composed of distinguished social scientists.

The GSS is conducted annually during the months of February and March; and in July of each year the new data are incorporated into a cumulative data set distributed by The Roper Center for Public Opinion Research at the University of Connecticut and by the Inter-University Consortium for Political and Social Research at the University of Michigan. The 1972-86 cumulative file contains 1.021 different variables covered in the fifteen years of GSS data collection. Among the topics covered by the study are such important public policy issues as social stratification, political tolerance, government spending, group conflict, gun control, capital punishment, and abortion, as well as such personal issues as life goals and lifestyles, childrearing, occupational and residential mobility, and divorce. The cumulative codebook provides complete documentation of the study, including the full text of all questions. In nineteen appendices, the current (1986) codebook

adds information on such topics as sample frame construction, coding, previous uses of questions appearing in the GSS, and comparisons between GSS findings and those from national surveys in the Federal Republic of Germany, the United Kingdom, and Australia.

The GSS offers unique opportunities for scholarly analysis. It is possible, for example, to follow the opinions and circumstances of a particular age group cohort over time, or to cumulate samples of relatively rare groups over several years, thus providing a sufficient number of cases for statistical analysis.

The GSS is based on personal interviews conducted on a new full probability sample of 1,500 noninstitutionalized adults in the United States each year. A new sample is selected each year; except for occasional methodological experiments, the same individuals are never interviewed more than once. The interview, which has been expanded in recent years, now requires about 90 minutes to complete. Special efforts are made to overcome initial refusals, and in recent years response rates have ranged from 75 to 79 percent.

The core of the GSS questionnaire consists of questions that were first asked of national samples of the public by NORC, Gallup, Roper, the University of Michigan's Survey Research Center, or other survey organizations. A number of these question items were first asked in the period 1935-1945 and thus permit analysis of trends covering forty or fifty years. The questions are grouped into three



GSS Coprincipal Investigators James Davis and Tom Smith and (center) Survey Director Richard Rubin

types: permanent questions that appear on every survey, rotating questions that appear on two surveys out of three, and occasional questions that are asked only on selected surveys. This format guarantees that certain issues of widespread interest, such as public attitudes toward government spending priorities, can be tracked year by year, and that others will be measured at least two or three times a decade.

For several years Andrew Greeley has sponsored and analyzed a group of questions focusing on people's images of God, from which he has derived a scale of religious imagination. Greeley is now analyzing the power of this scale for predicting social behavior and attitudes.

**Methodological Research**. Because of its regularity, its national probability sample, and its broad coverage of issues, the GSS is an ideal vehicle for the perfor-

mance of methodological research. Davis and Smith have responded to these opportunities with a long series of experiments designed to improve the quality of survey data. These have involved the experimental study of respondents' cognitive recall, wording and context effects, optimum oversample designs, and nonresponse bias, as well as evaluations of the GSS sampling process to ensure that the integrity of the time series is maintained over the years. An illustrative example of such research is a 1985 experiment in question wording that found that public support for increased assistance to "the poor" was 39 percentage points higher than support for increased "welfare."

The 1987 GSS will include a black oversample of 353 respondents, which will allow investigators greater opportunity to analyze changes in black political participation over the years. A similar black oversample was included in the 1982 GSS. In yet another innovation, two-thirds of the 1987 GSS respondents will be reinterviewed later in the year in a study of political tolerance and civil liberties.

Topical "Add-Ons". In recent years the GSS has included various topical modules that permit the study of areas of special interest in greater depth than the core trend items allow. Thus, in 1982 and 1984, the Ford Foundation sponsored a module that probed American attitudes toward the military. The 1985 GSS included a series of questions on social networks in which respondents were asked about

"people with whom you have discussed important matters" in recent months. The number of persons mentioned was recorded and the interviewer then asked a series of followup questions about each: How close did the respondent feel to each? How close are they to one another? What is their age, sex, race, religion, level of education? How does the respondent come to know them? How long has the respondent known each? How often do they talk? Such data, from a national sample of 1,500 cases, can add immeasurably to our understanding of social interactions.

The 1986 topical module examined the "feminization of poverty" and employed the technique of factorial vignettes to measure the public's evaluation of welfare needs. A series of ten vignettes was presented to each respondent, seven of them describing young families of various types and sizes and three describing older women. Respondents were then asked how much government assistance the families should receive. Through experimental variation of the vignettes along specified dimensions, researcher can evaluate how variations on those dimensions influence choice. For example, by comparing vignettes with different numbers of children, one can measure the additional assistance favored for each child. In 1987, the topical module is on social and political participation. This module will replicate key sections of the 1967 landmark study of political participation in the United States by Sidney Verba and Norman Nie. The 1987 study will also include exploration of additional, related topics such as respondents' political networks and their participation in voluntary organizations.

International Activity. During the last five years, Davis and Smith have taken the lead in extending the GSS concept to cross-cultural studies on an international scale. In 1982 the GSS and the ALLBUS survey conducted by ZUMA (Zentrum Für Umfragen, Methoden und Analysen) in West Germany collaborated on a study that asked many of the same question items in each of the two countries. In 1983 and 1984 the association was extended to England and Australia, and in 1985 this international cooperation was formalized with the establishment of the International Social Survey Program (ISSP). Each participating country in the ISSP has an independently funded survey to which all agree to add a common section on a given topic of cross-national interest.

The first collaboration with ZUMA developed a series of questions on job values that was asked simultaneously in the United States and West Germany. In 1984 the two surveys together explored "Equality and Class", the degree to which the U.S. and West Germany were perceived by their citizens to be open societies or closed. Shortly after the founding of ISSP the collaboration was expanded to include researchers in Austria and Italy. The first multi-national collaboration was the design of a question module on the role of government in society. Data collection was carried out in 1985 in the U.S., West Germany, Austria, and Italy. For the second ISSP collaboration researchers from the U.S., West Germany, England, and Australia met together and developed a common survey module on social support systems, designed to determine where respondents would go for assistance with a number of financial, medical, and everyday problems. These questions were administered to their respective samples in 1986 and provide data that will enable researchers to investigate the changing role of the family in industrialized nations.

In 1987 the international module, enhanced by the participation of Irish, Dutch, and Hungarian researchers, focuses on social and economic inequality.

The GSS has had a major impact on social research in the United States. Each year, it documents the stability or change in literally scores of basic items that measure the state of the social fabric: living conditions, intergroup attitudes, public opinion on fundamental issues, demographics, political participation, and much else.

According to the study's principal investigators, the magnitude of the changes for most items is generally very small from one year to the next. But as they have pointed out, even minute changes, if maintained steadily, can result in dramatic social change over a period of years. For example, the 1972 GSS found that one household in ten consisted of an adult living alone. In 1986 the proportion was one person in four, although the rate of increase had averaged only 1 percentage point a year.

The GSS data have provided fertile ground for scholarly analysis. The 1986 Annotated Bibliography of Papers Using the GSS references 1,498 publications (not counting newspaper articles and unpublished manuscripts) that have used the General Social Survey in their analysis. These include books, articles in 225 different journals, presentations before scholarly meetings, theses and dissertations, and reports of government agencies and other institutions, including the Center for Education Statistics, the Law Enforcement Assistance Administration, the U.S. Bureau of the Census, and the National Science Foundation.

The GSS is also the most widely used dataset in sociology for instruction and student research. It is an integral part of many sociology courses, where it is often used to give students hands-on experience with data analysis. In recent years the GSS has increasingly been used as part of special instructional subsets and computerized teaching packages for both analytical methods and substance. One of the most innovative approaches has been developed by James Davis. He has written an instructional text on contemporary American society (Social Differences in Contemporary America, New York, Harcourt Brace Jovanovich, 1987) along with a microcomputer program (CHIPendale, "a program to hand craft tables") that are to be used together to teach students about social structure and process. By doing their own analysis of survey data, mostly from the GSS, students learn basic social facts about America, and develop analytical skills.

#### Studies of the Homeless

Increasing attention in recent years has been given to a very visible tear in the social fabric-the plight of the homeless. These individuals and families, formerly evident only in isolation, have become a very noticeable segment of almost all large cities and of many smaller communities. Furthermore, they have aroused strong public responses to their condition—shame and guilt, altruism and charity, fear and hostility. Efforts to understand and alleviate the problem have been greatly handicapped, however, by a lack of data on the homeless population. By definition, the homeless are excluded from sample surveys and censuses, which are almost always based on members of households. Thus, it is extremely difficult to determine either the numbers or the characteristics of this shifting population with any degree of scientific precision.

In the absence of sound statistics, public debate has generally been informed by impressionistic or anecdotal evidence or by "surveys" based on unsound methodologies and subject to inherent or unknown biases. Estimates of the number of homeless persons in various localities have varied so widely that it has been impossible to assess the scope of the problem and the resources needed to cope with it. The backgrounds and characteristics of the homeless are almost completely unknown with any degree of accuracy, so that the homeless have been characterized variously as free souls who enjoy living on the streets, as victims of an unfair and unfeeling capitalistic system, as predators living off crime and beggary, as alcoholics and other weak-willed persons who are lacking in virtue, or as unfortunates who are temporarily down on their luck.

The Study of the Homeless of Chicago was a joint project of the Social and Demographic Research Institute (SADRI) of the University of Massachusetts and NORC. Peter Rossi, former Director of NORC and now of SADRI, was principal investigator, and NORC Senior Survey Director Mary O'Brien served as project director for the administration of the survey. The study was funded by grants from the Pew Memorial Trust, the Robert Wood Johnson Foundation, and the Illinois Departments of Public Aid and Mental Health. Its major goals were to develop and test methods for conducting unbiased surveys among homeless people, to describe the social and demographic condition of the Chicago homeless, and to estimate the size of this population.

The researchers confronted formidable methodological problems, of which the first was simply to define the word "homeless." The operational definition, as it finally emerged, was a person who at the time of the survey was a resident of a shelter for the homeless or one who did not own or rent a conventional housing unit and was not a member of such a household. This definition included as homeless those persons living in vans, tents, shacks built of scrap materials, and in any other public place, but excluded

persons who were "crashing" with friends or relatives, or occupying single-room-occupancy hotels. A second major problem was to devise a sample design that would produce an unbiased estimate of the size of the homeless population and an unbiased sample to be interviewed. That effort is described in the *Methods* section of this report.

**Survey Procedures**. Procedures for finding and interviewing the homeless were worked out over several months of preparation and testing. Since the study was to cover the whole of the homeless population of the city, two strategies had to be developed—one for shelters, one for the streets—to cover the major types of places where homeless persons could be expected to be found.

Shelters dedicated to serving the homeless were sampled from the universe of such facilities in the city of Chicago. NORC interviewers then proceeded to interview in selected shelters using more or less conventional procedures for interviewing in institutions. They first gained access to the shelters through appropriate official channels, then they obtained information from the shelter operators about the number of persons in residence on each shelter's assigned survey night, selected a systematic sample of respondents, and conducted interviews with those selected in the shelter, in settings that offered as much privacy as possible in the shelter setting.

For the street survey, the city block was used as the sampling unit, stratified for statistical efficiency. Each sample block

was visited and mapped in advance by project supervisors to determine the human resources needed to interview on that block. Because the Census definition of a block includes open areas such as parks, vacant lots, and railroad yards, as well as blocks with considerable nighttime activity-those with rail and bus stations, taverns, and theaters-the task of "sweeping" them for homeless persons varied greatly in difficulty. One interviewer could sweep a number of lowdensity blocks in one outing, whereas high-density blocks required many interviewers to complete the work. Blocks were assigned randomly to each night of the week, and none was canvassed more than once, to avoid duplicate counts.

A group of some forty interviewers was carefully trained for the work, and each was accompanied on the task by an offduty Chicago police escort. A little more than half the interviewers were black, the remainder white or Hispanic. About half were men, half women. The police escorts also included whites, blacks, and Hispanics, and about a third of the escorts were female. The escorts were there to ensure the safety of the interviewers in the course of their sweeps, and often preceded the interviewer in penetrating abandoned buildings, open hallways, and other possibly dangerous places. Interviewers were equipped with beepers (to communicate with their supervisors in nearby cars), large flashlights, campstools, clipboards, money and receipt forms for the payment of respondent fees, and umbrellas on rainy nights.

Interviewing took place between 1 a.m.

and 6 a.m. on each night of the survey. At 1 o'clock each morning, the interviewers and their police escorts began searching their assigned blocks. They were given a starting point for each block and instructed to canvass it in a prescribed route, searching all places to which they could obtain access. These included all-night businesses, alleys, hallways, roofs and basements, abandoned buildings, and parked cars and trucks. All persons encountered were asked a short series of questions to determine whether or not they were homeless. Any sleeping persons encountered were awakened and screened. In all cases, interviewers introduced themselves and their escorts. announced their purpose, and gave assurances that no harm was intended. Persons who responded to the brief screening were offered \$1 in payment and, if found to be homeless, were offered an additional \$4 to respond to a 15-minute interview. The interview. which was identical to that used in the shelters, collected information on employment and residence histories, health, and sociodemographic characteristics.

The study was conducted in two phases, the first covering 168 blocks in the fall of 1985 and the second covering 245 blocks in the winter of 1986. Response rates generally exceeded those obtained in conventional surveys. A total of 722 homeless persons were interviewed either in shelters or on the streets in the course of the two phases.

Characteristics of the Homeless. The demographic characteristics of the

Chicago homeless differ sharply in some ways from those of the general population. As detailed in the report from the study, issued jointly by SADRI and NORC, three-quarters of the homeless are men, one-quarter women. Blacks account for slightly over half the homeless population, and American Indians are heavily overrepresented. The average age of the group, about 40, was quite similar to that of the total population, but the youngest (under 25) and oldest (over 65) age groups were underrepresented. The homeless did not differ much from the general public in their educational attainment. The typical homeless person has had at least 12 years of schooling. But in three important characteristics the homeless stand in marked contrast to the rest of the population: their extreme poverty, their poor physical and mental health, and their social isolation.

The median income reported by the Chicago homeless during the month preceding their interview was just under \$100. This is less than one-fourth of the 1985 poverty level for single persons under age 65. The income of the homeless was most often derived from part-time employment, pension or disability payments, or welfare. Perhaps surprisingly, the last of these accounted for only about 30 percent of total income; only 28 percent of the survey sample reported payments from AFDC or from General Assistance. Because the cheapest rental housing in a conventional dwelling unit considerably exceeds the total income of the homeless, their literal survival must depend on shelters, soup kitchens, and other charity.

More than one-third of the homeless (37 percent) reported their health to be "fair" or "poor." More than one-fourth said they had health problems that prevented full-time employment. More than one-fourth reported a hospital stay within the last year, and one in three reported one or more stays in a detoxification center. Almost one in four had received care in a mental hospital, the majority of these on more than one occasion. About one in six of the homeless admitted to at least one suicide attempt. The sample also scored extremely high on two short scales measuring depression and psychotic thinking. Indeed, more than four out of five reported one or more health problems that make it difficult or impossible to obtain employment, maintain social relations, or lead a normal life.

The social isolation of the homeless represents still another disability. More than half have never married and most of the remainder are divorced or separated. Of those with families, almost all are homeless women with dependent children. Although almost all of the homeless have surviving relatives, one in three maintain no contact at all with them and most of the others have only minimal contact. In addition to their extreme poverty and ill health, therefore, the homeless suffer from an absence of social support from family and friends.

Based on the survey's probability samples of shelter residents and homeless persons found on the streets and in pub-



James Davis and Tom Smith (right) meet with members of a GSS Board of Overseers subcommittee, Howard Shuman, David Knoke, and Margaret Marini.

lic places, the average nightly number in both the fall and winter surveys was slightly over 2,000. From the survey data on length of time homeless, it can be estimated that about 6,000 persons are homeless in Chicago at some time in the course of a year.

These numbers are considerably lower than previous estimates of the size of the Chicago homeless population, but they are the only estimates based on a precise definition and scientific sampling procedures. There are, unfortunately, many thousands of other persons in the city of Chicago who are on the brink of literal homelessness and their situation shows little signs of improvement. An encouraging factor in the findings of the NORC survey is that the unexpectedly small number of the extreme group of literally homeless persons implies that their con-

dition could be greatly improved at relatively small public expense.

### Study of Urban Family Life

A notch above the homeless are those families and individuals who are housed in the poverty areas of America's cities. There is evidence that the proportion of individuals and families living below the poverty line has been growing, as have the proportions of female-headed households and unemployed youth. While these problems have often been documented, their causes and solutions remain matters of dispute. NORC has been collaborating with William Julius Wilson, distinguished service professor and chairman of the Department of Sociology at the University of Chicago, on a survey that will investigate these and other issues in the context of urban family life in Chicago inner-city communities. NORC's work on the project is funded jointly by the U.S. Department of Health and Human Services, the Carnegie Corporation of New York, and the Ford, Fry, Joyce, and Rockefeller foundations. Among the team assisting Wilson as principal investigator are NORC Research Associates Mark Testa and Richard Taub. Testa codirected NORC's survey of teenage welfare mothers in Illinois and Taub is coauthor of Paths of Neighborhood Change, a volume based on his NORC survey of selected Chicago neighborhoods. NORC Senior Survey Director Barbara Campbell is project director for the survey portion of the study.

The overall study is based on a triangulated methodology that combines

survey research, community-based ethnography, and national institutional/historical data in an innovative design. The survey component of the study focuses on black, white, Mexican, and Puerto Rican households drawn from a probability sample of low-income areas in the city of Chicago. More than 8,300 dwelling units were screened in order to identify a final sample of 3,300 respondents. This sample includes married and single parents and childless couples in these four ethnic groups, aged 18 to 44.

The two-hour interview probes the family arrangements, work histories, educational attainments, fertility, and attitudes of household members, as well as many other social variables. The researchers will attempt to relate these to the family's current life circumstances. To provide an additional source of contextual data, they will conduct ethnographic studies of the communities, and gather detailed life histories of their residents. Institutional and historical data will provide a regional and national framework within which to interpret and compare findings on a broader scale. Wilson believes that the study's findings on the relationship between welfare and family formation, joblessness and family formation, and the respondents' assessments of education and manpower training programs will be a powerful tool for policymakers.

### The Soviet Interview Project

The study of political and social issues in closed societies presents an obstacle to



Mary O'Brien

researchers, but this obstacle can sometimes be overcome. The migration of citizens of the Soviet Union to the United States since 1970, numbering some 125,000 persons, offers a window into the Soviet Union for researchers. This migration, known as the Third Wave, is the subject of study of the Soviet Interview Project (SIP). SIP is sponsored by the National Council for Soviet and East European Research (NCSEER), a consortium of American academic institutions. NCSEER contracted the conduct of SIP research to the University of Illinois, and James Millar, Professor of Economics at that university, serves as the study's principal investigator. Millar heads a research team composed of scholars from several universities and academic institutions. NORC conducts the survey portion of the study for the research team under the direction of Senior Survey Director Miriam Clarke.

Begun in 1983, the first round of SIP interviewed a stratified probability sample of 3,000 recent emigrants (1979-1982) using an instrument that took three to four hours to administer. The questionnaire covered a wide range of topics bearing on life, work, and politics. In addition, a series of specialized projects, involving indepth interviews with expert informants in this sample, such as jurists, managers, and former labor camp inmates, were begun. These specialized interviews continue to the present time.

Interviewing for the second round of SIP started in 1986. A shorter version of the original instrument, about 2 hours in length, was administered to a group of about 600 Soviet citizens who emigrated to the U.S. between the spring of 1982 and the spring of 1985. As before, specialized interviews were conducted, this time with 1,114 males from the earlier emigre group regarding attitudes toward the military and, in the case of veterans, about experiences in the military and about parallel items in civilian life.

Researchers associated with the project are cognizant of the potential for bias in attempting to draw an accurate picture of life in the Soviet Union from an emigrant group. By the very act of emigrating, emigrants lose some of their capacity to represent the whole citizenry of their native countries. Sophisticated sampling and analytic techniques enable SIP researchers to determine that certain responses do reflect the experiences of the larger Soviet population, while other

SIP data is representative only of the Third Wave emigrant population.

All SIP interviews are conducted in Russian by specially trained bilingual interviewers. The SIP data complements a similar research database resulting from a Harvard University study of the 1950s.

### Methods

he cornerstone of NORC's approach to survey design is the premise that accurate information is derived from the articulation of each of the individual steps in the survey process. Authors of questionnaires must be aware of how questions are understood by respondents and how the responses will be used by analysts. Sampling statisticians must design selection procedures that are practical for field administration as well as valid for statistical inference. Interviewers must be trained to implement precise sample designs, administer complex questionnaires, and encourage high rates of participation in the survey. The validity of inferences from survey data depends on adherence to rigorous standards in the design and implementation of survey projects and in the analysis of the data. NORC's commitment to survey methodology stems from this premise. Furthermore, critical evaluations of the methods used in each step of a survey are essential to further improvements in the quality of information obtained in social surveys.

From its establishment in 1941, NORC has sought to represent a standard of quality in the survey research profession and has been a leader in the field in applying survey research methods to social science and social policy issues. Indeed, among the original purposes of NORC, as set down by founder Harry H. Field, was to create "a research Center to discover, test and perfect new methods, techniques and devices for ascertaining the status of public opinion." Implemen-

tation of this goal began promptly. Between August 1942 and July 1943, a series of eleven memoranda was circulated to NORC friends and trustees. These memos, reporting on the effects of question wording, the order in which alternative answers are offered, and the presence or absence of particular alternatives, were based on experiments introduced into early NORC surveys.

In 1946, at the first national conference on public opinion research, held in Central City, Colorado, NORC reported on an experiment to measure empirically the differences produced by full probability sampling, as employed by the U.S. Census, and the form of quota sampling then practiced by NORC, the political polls, and market research companies. For this experiment, NORC replicated on one of its own surveys the battery of questions asked by the Census in its monthly survey of the labor force concerning the employment and demographic characteristics of individuals found in the sample households. The Denver Validity Survey, conducted in 1949, remains a classic in survey methodology. In this study, NORC researchers checked the interview responses of a probability sample of Denver residents to a series of factual and behavioral questions against objective records: voter registration, car and telephone ownership, library card, Community Chest contribution, home ownership, and the like.

This early methodological work was capped by the publication in 1954 of *Interviewing in Social Research*, which

reported on five years of research on interviewer effects under the direction of Herbert Hyman. A multitude of individual experiments designed to test an integrated theory provided a body of findings that continue to make the book indispensable in the teaching of survey research methods.

In addition to such purely methodological work, NORC's early research also focused on the development of methodology to address specific data needs. For example, in 1953 NORC developed a methodology for conducting the first national sample survey of health care utilization and expenditures. In the 1960s, NORC helped develop methods to measure the effectiveness of many of the social programs initiated in that decade, and carried out evaluation studies of the Job Corps, Project Headstart, a variety of Neighborhood Health Centers, and manpower training programs.

Since the early 1970s, NORC Research Associate Norman Bradburn, a former Director of NORC and now President of NORC's Board of Trustees and Provost of the University of Chicago, his colleague Seymour Sudman of the Survey Research Laboratory at the University of Illinois, and their associates at both institutions have extensively studied the impact on survey responses of such factors as question wording and order, interviewer characteristics, and the context of the interview session. During the course of the fourteen-vear-old General Social Survey, NORC has conducted numerous methodological experiments dealing with sample design, interviewer characteristics, and question wording. As part of several national longitudinal surveys discussed elsewhere in this report, NORC survey operations and research staff have developed innovative approaches to the collection and analysis of the rich and complex databases created by these continuing studies.

Most of NORC's work involves the design of surveys or survey components that respond to the varied requirements of individual clients. For this reason, the development of new survey methods has often been a key aspect of NORC projects. NORC's commitment to methodological research was institutionalized with the establishment of its Methodology Research Center in 1985. In addition to initiating its own research projects, the Center coordinates methodological research on other projects at NORC. It provides a bridge across projects as well as a resource for individual projects.

The Center also links the theoretical and applied aspects of methodological research. Because managing survey research projects requires skills different from those needed to evaluate the results of the projects, management staff and methodological researchers are often housed in separate divisions of an organization. Yet, interaction between the practical application of survey methods and the study of survey methodology is crucial to the success of both tasks. NORC's Methodology Research Center provides a locus within the organization where this vital exchange can take place.

### Asking Questions: Instrument Design

Obtaining information by asking questions is the essential activity of survey research. Behaviors and attitudes are generated in the minds of respondents, and respondents must supply the data necessary to conduct social and policy research. Because respondents do not generally understand the world in the same terms as social researchers, the survey questionnaire plays a critical role in translating the data needs of researchers into the everyday language of respondents. The validity of all the information collected in a survey depends on the accuracy of this translation process.

However, past methodological research has shown that this process, as evidenced in respondents' answers to questionnaire items, may be influenced by factors other than the respondents' true behavior or attitudes. Responses to apparently straightforward questions, such as the amount of family income or the number of visits to a physician, have been shown to vary by the detail and length of item wording or time lapsed since the event. When research concerns attitudes and opinions about controversial and complex issues, such as abortion, welfare, or civil rights, the translation process becomes even more complicated. Investigation of how respondents understand and answer survey questions is critical in order to separate accurate information about behavior and attitudes from artifacts of questionnaire design.

At NORC, basic methodological research on the cognitive tasks of respon-



Roger Tourangeau and Norman Bradburn

dents, initiated in 1984, has continued through 1985 and 1986. Several studies, conducted by NORC Senior Methodologist Roger Tourangeau, Norman Bradburn, and Roy D'Andrade of the University of California at San Diego, have investigated the cognitive structure of attitudes on controversial topics such as abortion and welfare, and the process by which respondents answer questions about such issues. Their results suggest that many respondents hold mixed, or conflicted, views on controversial topics. The research team is investigating how the context in which a survey question is asked—particularly the order of a given item in relation to other items-causes respondents to retrieve beliefs supporting one side of the issue or the other in answering attitude questions.

For example, welfare attitudes are organized around a number of belief clusters, such as the view that society has an obligation to help the poor, or the view

that welfare programs are rife with fraud and abuse. Information to support either belief cluster can be found in daily newspapers and news programs. A single individual may subscribe to either viewpoint depending on the context in which the issue arises. During an interview session, in the context of items concerning the government's role in education, health, and other public goods, a question about welfare might elicit a positive response. In the context of questions about fraud, a similar question might elicit a negative response from the same individual.

Based on a series of studies on attitudes toward abortion, welfare, the nuclear freeze, and U.S. policy in Nicaragua, Tourangeau and his colleagues have identified four major stages in responding to a survey question. Respondents first interpret the question, then recall relevant facts or beliefs, render a judgment by applying the retrieved facts or beliefs to the question at hand, and, finally, formulate a response. Question context may play a key role in each stage; for example, the respondent's choices among available belief clusters appears to be influenced by the context in which a question is asked.

Experiments in question-wording were a focus of interest in the two rounds of the General Social Survey conducted in 1985-86. Sponsored by the National Science Foundation, the General Social Survey has been fielded by NORC since 1972. (The GSS is described more fully in the *Social Fabric* section of this report.) Although the primary purpose of the GSS

is the collection of data on Americans' attitudes and behavior relative to a wide range of major concerns of the day, the survey has also served as a laboratory for experiments in survey research methods. Coprincipal Investigator Tom Smith has analyzed the results of two experiments in questionnaire methods conducted in 1985 and 1986.

In the 1985 study, three different versions of questions on spending priorities revealed that large differences in response could be attributed to differences in question wording. Average support for "welfare" was significantly lower than support for "assistance for the poor" and "caring for the poor." Based on analysis of correlations with other items in the GSS, Smith concluded that the term "welfare" triggers concern about the cost of public assistance programs and possible waste, fraud, and program abuse, and that questions about "the poor" tap concerns about the needs of persons who live in poverty.

In 1986, the GSS attempted to capture respondent's attitudes concerning levels of public assistance funding by presenting them with "factorial vignettes"—short descriptions of the predicament of a young, low-income family. Seven different vignettes were used, varying the number and age of the children, the marital status of the parents, the employment status of the father, and several other features of the family's condition. Each vignette was followed by a question asking the respondent how much supplementary income the family should receive

from the government. Analysis of responses about all of the vignettes was then used to determine the influence of each of the varied factors on the respondent's choices. In addition to these seven family vignettes, the survey included three that described the situation of an older women and varied such factors as the amount of her savings, home ownership, and availability of support from grown children.

## Selecting Respondents: Sample Design

NORC's work in questionnaire development has demonstrated that asking the right questions is important in gathering data on social phenomena. However, it is equally important that these questions be asked of a representative sample of the population of interest. Appropriate sample design and selection is critical in ensuring the accuracy of inferences made from the sample to the target population. NORC's Sampling Department, under the direction of Technical Director Martin Frankel, has been an innovator in sample design.

A recent example is the Study of the Homeless of Chicago, commissioned to develop and implement a scientifically credible and operationally feasible survey design for estimating the numbers of homeless people in Chicago and bringing to light the characteristics of this elusive population. One of the major methodological challenges of the study was to develop a method of sampling a population for which, by definition, traditional survey sampling methods, based

on conventional dwelling units, would not be applicable. Early in the planning stages, members of the research team, led by Frankel and the study's principal investigator, Peter Rossi of the Social and Demographic Research Institute at the University of Massachusetts at Amherst, considered various sampling alternatives.

Among the possibilities considered was capture-recapture sampling, a method often used for the study of other undomiciled populations, especially wildlife. This approach consists of taking successive samples of the target population in a delimited area and identifying and releasing those captured. Estimates of the composition and size of the target population are developed by using the proportions of individuals captured in later samples who were also caught in previous samples. This approach was rejected because, for any population with significant in- or out-migration, the approach requires three or more sample surveys to support good estimates of the size of the population. Moreover, capturerecapture sampling requires much larger samples than do traditional probability sampling techniques.

Another approach initially considered was to sample only the homeless in shelters, relying on occupants' reports of their use of streets or public places as dwellings to extrapolate to the entire homeless population. However, this approach requires that two assumptions be met: that the homeless report accurately on their use of various alternatives to shelters and that nearly every homeless

person uses the shelters to some measurable extent. Since both of these assumptions were dubious, this approach too was rejected.

In developing the sampling strategy for the study, the research team chose instead to base their design on four different assumptions that seemed more reliable: that homelessness is a relatively rare condition, affecting 1 percent or less of the adult population; that the condition of homelessness is not immediately discernible but requires screening for identification; that no adequate listing of addresses or telephone numbers can be assembled for reaching a large proportion of the homeless; and that homeless persons are concentrated geographicallyat night, they are concentrated in shelters and in places with public access near institutions serving the homeless.

Based on these assumptions, which had not wholly been taken into account in any previous study of the homeless, a two-part sampling strategy was devised. One part would call for a survey of shelters, the second for a survey of the streets. For the shelter survey, something very close to conventional sampling techniques could be employed, comparable to surveys of the members of any other residential institutions such as colleges or hospitals. And this was accomplished, with the major problem being, as in all such surveys, that of gaining access to the institutions.

For the street survey a much more complex and unusual design was required. In order to derive this sample, all Chicago city blocks, a total of about 19,400 as defined by the 1980 U.S. Census, were to be included in the sample frame. The fact that homeless people are known to be concentrated in certain areas of the city led to a decision to increase sample efficiency by stratifying the blocks according to their likelihood of having homeless people on them. The rating of blocks as likely to have high-, medium-, or lowdensity concentrations was done by members of the Chicago Police Department for neighborhoods with which they were intimately familiar. This rating was supplemented for some areas by ratings done by other community authorities, such as church representatives. Sampling of blocks was then done in proportion to these ratings.

In two separate waves of data collection—the first in the early fall of 1985 and the second in the winter of 1986interviewing teams with armed off-duty police as escorts canvassed their assigned blocks between the hours of one a.m. and six a.m. All possible locations of homeless persons—heating vents, public parks, bus stop benches, parked cars, abandoned buildings and unlocked hallways of occupied buildings, and the like-were searched, and everyone encountered, whatever his or her appearance, was asked screening questions to determine if he or she was homeless. Interviewers administered a short questionnaire to those who identified themselves as homeless to obtain basic demographic and personal history data, including frequency and length of spells of homelessness, and, in the second survey, including two short scales designed to measure depression and the presence of psychotic symptoms. (Further information on the study's methods and findings is presented in the *Social Fabric* section of this report.)

### Obtaining Information: Data Collection

Basic research concerning issues that cut across all surveys, such as the investigations of cognitive processes by Tourangeau and his associates, and innovative developments to meet new problems in social science research, such as the sample design for the Chicago homeless study, are efforts whose primary purpose is clearly methodological. But much methods research is also accomplished as part of ongoing projects whose primary purpose is the collection of data on a subject of longstanding interest.

The delivery of health services to the American people is an area where innovative survey research methods have been developed in response to the continuing and changing informational needs of social science and policy researchers. Information from many different perspectives-including those of patients, their family members, health care professionals, third party payors, and hospital and group practice administrators-is essential in developing a complete description of health problems and their treatment. Obtaining information about health care directly from each of these actors, as well as indirectly from such sources as institutional records or

invoices for services, presents a complex challenge for survey methods research. In 1985-86, NORC has continued its participation in the development of survey methods to meet such challenges in the area of health services research.

In preparation for the 1987 National Medical Expenditure Survey, NORC Technical Director Martin Frankel and associates completed a number of studies that reviewed earlier versions of the survey and evaluated new methods proposed for 1987. The earlier National Medical Care Utilization and Expenditure Survey (NMCUES), sponsored by the National Center for Health Services Research and conducted jointly by NORC and the Research Triangle Institute between 1979 and 1981, was designed to provide detailed information on health care utilization, charges for services rendered, and methods of payment. Roger Tourangeau and Research Analyst Kenneth Rasinski undertook an evaluation of the effects of data collection frequency and the use of a computerized summary containing previously reported information. Survey Director Janet Gans studied issues in the multiple coding of single illness conditions and the methods used to report and record chronic conditions. Survey Director Steven Ingels analyzed item nonresponse in NMCUES and discovered weaknesses in questionnaire format and skip instructions and in the coding and cleaning of various types of nonresponse. In addition, the study team developed and evaluated a statistical method for imputing data missing because of nonresponse.

In a related project, NORC designed and tested the Medical Provider Component of the NMES, which will collect data from medical providers named by respondents in the household portion of the survey. Gans analyzed the cost and data quality differences between mail and telephone data collection methods and critiqued the data collection forms and procedures to be used in the MPC.

During 1985-86, methodological research done at NORC also addressed data collection methods in contexts other than social surveys. In a series of projects, Research Associate Darrell Bock has evaluated methods of test administration and interpretation of test scores. In theoretical work conducted in conjunction with the California Assessment Program and the Program Evaluation and Assessment Section of the Illinois Office of Education, Bock has continued development of a new educational testing instrument, the "duplex design." This design combines features of conventional achievement tests with testing designs based on item sampling. The instrument will provide information for guidance and certification of pupils, and for curriculum formulation and evaluation, at about the same cost as conventional achievement testing.

Other NORC work on testing has concerned the Armed Services Vocational Aptitude Battery (ASVAB), the entrance examination for the U.S. military services. In separate projects, Bock has tested the critical assumption of unidimensionality in the subtests of this battery through ap-

plication of a full-information method for dichotomous item factor analysis. In the moderately large samples of these studies (1,000 to 3,000 cases), minor factors determined by relatively few items were detected as significant. This demonstration of the sensitivity of the full-information method recommends it as an exploratory technique in searching for item features that are responsible for individual differences in cognitive test performance.

### Summarizing Survey Results: Analysis and Interpretation

Once data are collected and encoded onto computer disk or tape, another set of methods comes into play to allow the answers of thousands of respondents to be distilled into informative summaries and informed conclusions useful to researchers and policymakers. In 1985-86 NORC researchers were active in developing analytic methods and in evaluating analytic alternatives.

Nonresponse is a chronic problem in survey research, and differences between responders and nonresponders in surveys is a potential source of bias. Ideally, an analyst would employ custom-developed statistical procedures for analyzing surveys with missing data. However, development of such procedures is often costly and technically difficult. Thus, it is often desirable that imputation procedures be used to fill in the missing data values. Imputation refers to the replacement of missing data values by estimates of the missing values. Such imputations allow the use of standard complete-data methods of statistical analysis. However,

methods based on filling in the missing values and treating the data as complete do not lead to correct statistical inferences because they fail to reflect the uncertainty in the imputed values. For the past several years, Research Associate Donald Rubin has explored the development and application of a method called "multiple imputation," which is designed to lead to correct statistical inferences from datasets containing imputed values.

In 1985-86, Rubin continued work on an NSF-supported project that is designed to recalibrate the 1970 Census detailed industry and occupation codes to the 1980 classifications. Methodologically, this effort will extend the theory of multiple imputation, lead to the creation of new multiple imputation models especially tuned for the occupation-industry code problem, and allow evaluation of the utility of multiple imputation as a means of achieving comparable occupation and industry data for different censuses. Substantively, it will result in Census public use tapes for 1970 Census data that have occupation and industry codes comparable to those used in 1980, which can be used by researchers to study occupational and industrial change between 1970 and 1980.

In 1986, NORC was awarded a contract to evaluate the relative merits of various programs initiated through the Job Training Partnership Act (JTPA). A critical evaluation issue is the ability to differentiate between the effects of program features and the effects of characteristics of participants who choose to enter the programs. The assignment of individuals to



James Heckman

training programs is generally not made on a random basis, as would be the case in a classic experimental design. Consequently, the effects of individual and program characteristics may be confounded when evaluating the impact of the program. Individuals who appear to be successful after going through a given program might in fact have been relatively successful even if they had not participated. Moreover, the program may selectively enroll such individuals. This self-selection factor poses a major methodological challenge in the evaluation of job training programs. A methodological assessment of various nonexperimental methods for estimating program impact is thus a key task in the JTPA study.

Research Associates James Heckman and Joseph Hotz will examine a number of alternative estimation strategies that have been developed to deal with selection bias. The ultimate criterion for success for any of these methods will be the ability to develop statistical models for the selection process and identify differences between JTPA trainees and a comparison group. Once the selection process has been characterized quantitatively, Heckman and Hotz will address the issue of whether the models provide estimates that are reliable and consistent with those obtained using an experimental design with random assignment. The results of this work will have applications in the assessment of a wide variety of social programs where random assignment of individuals to various treatment categories has been impractical.

Other methodological work by Heckman during 1985-86 included an expansion of certain models used to analyze data collected in longitudinal studies. In the project Population Dynamics: Modeling Longitudinal Microdata, funded by the National Institute of Child Health and Human Development, Heckman and Burton Singer have shown that duration analysis models can be extended to account for unobserved population heterogeneity without making assumptions regarding the distribution of such differences. This work forces a reevaluation of the commonly held assumptions regarding the influence of unobserved variables.

In related work done on this project, Heckman and Richard Robb extensively analyzed and extended the statistical procedures used to control for selection bias. Their work focused on the evaluation of training programs and lays the groundwork for such studies as the NORC evaluation of JTPA.

### Deciding When and How To Do a Survey: Benefit-Cost Analysis

Though the quality of survey data de-

pends on the application of appropriate methodology in each step of a survey, it is not the case that every research project can command resources adequate to meet the methodological standards set by state-of-the-art research. Social researchers may not have the funding or the time necessary to collect data of the highest quality, and may face the dilemma of choosing between lower quality data and no data at all.

Bruce Spencer, Director of the NORC Methodology Research Center, is developing a set of analytic techniques that address this dilemma. In a book, Benefit-Cost Analysis of Data Used to Allocate Funds, and in an article published in the Journal of the American Statistical Association, several working papers, and seminar presentations at NORC, Statistics Canada, and elsewhere, Spencer has investigated the relationship between optimal expenditure on data collection and the ways the data get used. Among the questions raised in Spencer's work are: How does data cause action-does it come to the attention of the persons empowered to act, does it do so in a timely fashion, and do they interpret it correctly? What will be the consequences of action informed by data? That is, if action will be taken in any case, what difference will be made by the presence and correct interpretation of survey data? In a given situation, what value is placed on taking the "right course" of action by those involved, and how do they assess the loss from the "wrong course"? Answers to questions such as these can inform decisions about how-and even whether-to conduct a survey.

# The Corporate Report

### The Director's Office

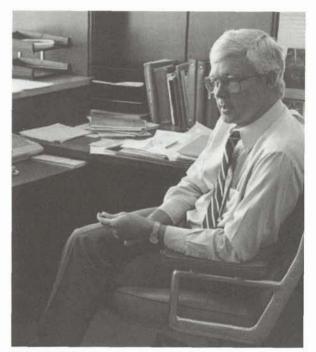
NORC's mission—to conduct social science research in the public interest—is defined in the organization's charter. The decisions about how best to accomplish that mission in the ever-changing American social and economic climate are ultimately made in the office of the NORC Director, in collaboration with the Board of Trustees, the organization's Executive Management Committee, and other senior NORC staff.

In 1985-86, the Director's Office also engaged in significant developments in the organization's relationship with its Board of Trustees and the University of Chicago.

#### The Board of Trustees

The Board of Trustees meets annually in November to review NORC's research agenda and its current and upcoming activities. The Board's Executive Committee meets quarterly to review the organization's financial reports and to consider resolutions for later ratification by the full Board. The composition of the Board of Trustees is in part mandated in NORC's by-laws, which stipulate that the majority of its members must be affiliated with the University of Chicago. The current board members are listed on the inside back cover of this report.

During the years 1985 and 1986, the Board of Trustees underwent a series of changes designed to strengthen its active involvement in various NORC activities, and to bring new perspectives to NORC governance. The membership of the Board was expanded to a total of 16; members now serve a term appointment



Robert Michael

of five years; a new category of life trustee membership was created; and several board committees were established by Board President Norman Bradburn. During the past two years, three new trustees were also elected: Vincent Barabba, John Louis, and Joseph Sullivan. Barabba is the Executive Director of Market Research and Planning for General Motors, and former director of the U.S. Census. Louis is former United States Ambassador to the United Kingdom of Great Britain and Northern Ireland. Sullivan is a partner in Sullivan and Proops, a leveraged buyout firm in Chicago.

The life trustee position honors those who have contributed substantially to NORC's welfare through long and distinguished service on the board. The first three members elected to it are Gale Johnson, Nathan Keyfitz, and William Sewell.

### University Relations

The Director's Office is NORC's liaison with the University of Chicago, maintaining and developing the institutional affiliation. NORC's Director is by tradition a member of the University of Chicago faculty. The current Director, Robert Michael, is a professor in the University's Department of Education, and chairman of the University's newly established Committee on Demographic Training. He also serves on the Executive Committee of the Division of the Social Sciences, on the Board of Computing Activities and Services of the University's Computation Center, and on the School Board of the University of Chicago Laboratory Schools.

As Director of NORC, Michael acts as a liaison between NORC and the University in many joint research activities. Such activities in the recent past have included collaboration between NORC's Methodology Research Center and the University of Chicago Medical School on a study of life expectancy, and the development of a major research and training program in demography. The latter activity involves coordination of the research in NORC's Economics Research Center and the Committee on Demographic Training. In collaboration with other demographers

on campus and at NORC, Michael oversees a training program that supports about a half dozen postdoctoral fellows and several predoctoral students each year. This program is funded by the National Institute of Child Health and Human Development (for students from the United States) and by the William and Flora Hewlett Foundation (for Third World students). Together with several other NORC researchers, NORC's Director has played an active role in the planning and development of the University's new School of Public Policy Studies.

The University of Chicago has for the last decade had an active, collegial relationship with the Institut für Demoskopie at Allensbach in West Germany. This relationship was formalized in 1984 by an agreement between the two institutions to facilitate international cooperation and comparative investigations in the field of empirical social research. The agreement was also meant to foster cooperation between the two institutions by encouraging visits by researchers from one institution to the other. NORC's Director serves on an Advisory Council established jointly by the University and Allensbach to oversee the continuing development of the relationship. In October 1985, Robert Michael and Elisabeth Noelle-Neumann, President of the Allensbach Institute, organized a symposium on the family as a focus of research, providing an opportunity for researchers from NORC and Allensbach to share information on family research in the United States and West Germany.

#### Other Activities

During 1985 and 1986, a major objective of the Director's Office was to obtain a secure financial base that would provide flexible funds for exploratory research and a hedge against funding shortfalls. In 1985, two funds were established to help NORC meet this goal: an internal NORC endowment fund that is capitalized from NORC's operating surpluses, and the University of Chicago Fund, established by the Provost's Office for the purpose of increasing the intellectual and research capacity of NORC and strengthening the relationship between NORC and the University faculty. In 1985-86, the University of Chicago Fund was allocated among fifteen projects. These ranged in scope from a small grant to help a student complete a research project to support for a major scholarly book by James Coleman, Public and Private High Schools: The Impact of the Community. Among the other projects supported by the fund are an analysis of data on childbearing among adolescent welfare mothers, and a conference on context effects in surveys.

Pearl Zinner, Associate Director and Special Assistant to the Director, has worked closely with NORC's Director and the Board of Trustees in many of these developments. Her activities in 1985-86 are sketched in "Pearl R. Zinner."

#### PEARL R. ZINNER

As Associate Director and Special Assistant to the Director, Pearl Zinner plays an enabling role in special projects that cut across organizationally defined areas of corporate responsibility. During the past two years, these projects have included the recruitment of new trustees, a study concerning an endowment campaign for NORC, a comprehensive review of NORC's salary structure, and the creation of a special library collection in honor of retiring Senior Survey Director Paul Sheatsley.

Zinner has been a member of the NORC staff since 1951. She has had senior management responsibility for many important NORC studies, particularly in the field of health care. She directed survey operations in NORC's New York office from 1963 until shortly before the consolidation of survey operations in Chicago in 1984. She is still based in New York City and maintains NORC's presence there, including its ties with the New York social science establishment.

During 1985-86, Zinner was active in NORC's campaign to broaden its base by recruiting Trustees from outside the academic constituency from which most



Pearl Zinner

have traditionally come. She worked closely with the Director to identify potential new Trustees, including Vincent Barabba, John Louis, and Joseph Sullivan. When Norman Bradburn created the four Board of Trustees Committees in 1986, Zinner was named as NORC staff member to the committee on nominations, thereby formalizing a role she had played informally for some time.

NORC operates in a financial environment in which a vast majority of the organization's funding comes in the form of project-specific support, generally on a cost-reimbursement basis. As a result, the organization tends to have very little in flexible funds for exploratory research, for staff career development, or as a hedge against periods of temporarily slow funding. In an attempt to ensure NORC's long-term well-being, NORC's Director and Trustees authorized a study of NORC's fundraising potential. In May 1986, NORC engaged the firm of Brakeley, John Price Jones Inc. of Stamford, Connecticut to conduct the study, and NORC's Director asked Pearl Zinner to serve as NORC's liaison to the consulting firm. As an active participant in the study, Zinner worked with the consultants to inform them about NORC's work and financial needs, to identify potential respondents for the study, and to frame the questions they would be asked. The exercise has generated stimulating discussions of NORC's identity and purpose, and will be an important part of future efforts to secure a general endowment for NORC.

NORC's current salary administration program was established in the early 1970s. Recent events—especially the growth in NORC's volume in the last two years—suggested to senior management that a thoroughgoing review of this program was in order. Pearl Zinner was chosen to chair a committee, composed of representatives from the major divisions of the organization, that was charged with ensuring that the salary structure was and would remain equitable, and that NORC salaries would be competitive with others in the industry.

When Senior Survey Director Paul Sheatsley retired from NORC in 1986 after 45 years with the organization, NORC decided to honor him by naming the organization's newly expanded library after him and by setting up a special fund to buy material on survey methodology. Zinner spearheaded this successful endowment effort, sending letters to 200 friends and colleagues of Sheatsley's.

In addition to her work on such special projects as the ones above, Zinner is NORC's liaison with the New York social science research community, a role that she has developed over the past thirty-five years. The NORC New York office offers consultation on research project planning for members of the New York social science research community. It also maintains a library of field materials, including questionnaires from virtually every study NORC has conducted since 1941, which is available to the New York community.  $\square$ 

## The Survey Group

The field effort for the fifth follow-up of the National Longitudinal Study of the Class of 1972 required NORC to find 14,500 people who had not been interviewed since 1979 and then persuade them to be interviewed again. The Chicago Study of the Homeless required a sample design that would enable NORC staff to count and interview this elusive and mobile most populations-something that was eventually accomplished by canvassing 413 Chicago city blocks in the dead of night and screening every person encountered to determine whether the person was homeless. In conducting the Survey of Absent Parents, NORC staff had to track down noncustodial parents and interview them about their child support behavior and their relationship, if any, with their children and ex-spouses.

The Survey Group routinely faces design and interviewing challenges like these. The 39 surveys NORC conducted during the two years 1985-86, including those cited above, collected data from respondents of many kinds, under a wide variety of circumstances.

The Survey Group, under the direction of Associate Director for Survey Operations Celia Homans, is responsible for the design, execution, and management of all NORC surveys. It encompasses NORC's field staff—profiled in "Field Notes"—and a central office staff that includes such nationally recognized experts as Martin Frankel and Paul Sheatsley.



Celia Homans

The Survey Group's tasks include the design of samples that are appropriate for each survey; the construction of questionnaires that elicit full and accurate information from respondents; data collection, in person, by telephone, or by mail; and data preparation.

NORC surveys may be staffed by NORC personnel from design through analysis and report. On some occasions, the Senior Survey Director acts as Principal Investigator; on others, the Principal Investigator is one of NORC's Research Associates. Often the Survey Group works with a Principal Investigator from outside NORC—from government, the university research community, or the private sector.

#### Research in 1985-86

Much of NORC's survey work during 1985-86 consisted of large-scale projects that collected basic data for statistical and policy research. Many of NORC's surveys are longitudinal in nature-surveying the same individuals at successive points in time. Longitudinal work conducted during this period included the eighth and ninth annual waves of the National Longitudinal Survey of Labor Force Behavior/Youth Cohort (NLS/Y), directed by Senior Survey Director Woody Carter; and the third biennial followup study of High School and Beyond (HS&B) participants and the fifth periodic followup of the National Longitudinal Study of the Class of 1972 (NLS-72), directed by Senior Survey Director Barbara Campbell. Other repeated surveys, such as the General Social Survey and the National Ambulatory Medical Care Survey (NAMCS), use new samples of respondents in successive years. 1985 and 1986 were the twelfth and thirteenth years of data collection for the General Social Survev: the tenth round of the NAMCS was fielded in 1985.

Two major new surveys, the National Medical Expenditure Survey (NMES) and the National Education Longitudinal Study of the Class of 1988 (NELS:88), were also begun during 1986. The NMES is a multi-year, multi-million-dollar survey of Americans' use of and payment for health care. NORC's work on the survey is under the direction of Senior Survey Director Mary Cay Burich, and is being done under subcontract to Westat, Inc., of Rockville, Maryland. NELS:88, directed by Senior Survey Director Calvin Jones, is the latest in a series of lon-

gitudinal studies of high school students conducted for the Center for Education Statistics (CES) of the U.S. Department of Education. Because of widespread interest in exploring the precursors of the academic success and failure of secondary school students, the new survey begins with eighth grade students, unlike its predecessors, HS&B and NLS-72, which began with students in high school.

NORC's program of education research is highly integrated. The design of NELS:88 borrows heavily from that of High School and Beyond, which in turn was substantially modeled on NLS-72; and there are numerous administrative benefits to having all three studies housed in one organization. Another recent NORC study that builds on a previous one is the Child Supplement to the National Longitudinal Survey of Labor Force Behavior/Youth Cohort, which collected data from the biological children of all the mothers in the NLS/Y sample. The NLS database is already extensively used by labor economists, demographers, sociologists, and social psychologists; when the Child Supplement data are added to it in 1987, the combined database will address the research interests of developmental psychologists as well. The Child Supplement became a reality largely through the joint efforts of Celia Homans, Associate Director for Survey Operations, and Wendy Baldwin, Chief of the Demographic and Behavioral Sciences Branch of the National Institute of Child Health and Human Development.

Though most of NORC's work is national, NORC participated in two landmark projects in Chicago in 1986. The Study of the Homeless of Chicago established the first scientific estimates of homelessness in Chicago, and provided information about the many severe life problems besetting this population. This survey was completed in the fall of 1986 under the direction of Senior Survey Director Mary O'Brien and Principal Investigator Peter Rossi, of the Social and Demographic Research Institute (SADRI) at the University of Massachusetts. At the same time NORC has been working with William Julius Wilson, chairman of the Sociology Department at the University of Chicago, to prepare for a major, innovative study of urban family life in Chicago, under the direction of Senior Survey Director Barbara Campbell.

#### Other Activities

In 1986, Senior Survey Director Paul Sheatsley retired after forty-five years with NORC. Sheatsley's many contributions to the field of survey research are highlighted in "Paul B. Sheatsley."

During 1985 and 1986, NORC continued to train University of Chicago graduate students in survey research methods through the Survey Research Practicum. The Practicum, now in its seventh year, is a joint project of NORC and the University that enables students to learn about survey design and management issues through both classroom training and work on an NORC survey.

#### FIELD NOTES

NORC's field structure combines the advantages of centralized administration with those of decentralized hiring and supervision. The organization's Office of Field Coordination and Management was formed in 1979 under the direction of Miriam Clarke, and is currently directed by Charlene Weiss. Under Weiss's supervision, a geographically distributed group of 78 Field Managers hire, train, and manage a national staff of about 1,000 NORC interviewers—the largest of any not-forprofit survey research organization in the country.

The field structure divides the United States into four large Districts, and further subdivides it into twelve Divisions. Four District Managers provide oversight management and assistance in their districts; twelve Divisional Field Managers have senior administrative responsibility for the field staff in their divisions. Dayto-day interviewer management responsibilities are shared among these senior field management staff and the remaining 62 Field Managers.

NORC's field management staff is unusual not only in its size but also in its stability. All of the Field Managers were originally recruited and trained as NORC interviewers, and were promoted to their management positions after several years' experience on a wide variety of surveys. A recent computer analysis using ISIS, a database management program used to provide senior field staff with an up-todate profile of interviewer and field manager characteristics, revealed that the 78 Field Managers, Divisional Field Managers, and District Managers currently on staff have a total of 793 years of field experience at NORC-or an average of slightly more than ten years' experience per person.

NORC interviewers are hired, trained, managed, and evaluated by NORC. Like the Field Managers, these interviewers constitute a field force of unusual stabil-

Miriam Clarke



Charlene Weiss

ity and unusual sophistication. For example, 329 of them have worked for NORC for five years or more, and 177 have worked for NORC for two to four years. Nearly half have college degrees. One hundred-fifty are bilingual.

Many of the Field Managers have particular skills and experience that are critical to the success of different kinds of surveys. Some, for example, have become specialists in locating the hard-to-find, or in refusal conversion. Their persistence and ingenuity enable NORC to maintain its high response rates on longitudinal surveys, surveys of rare or elusive populations, and surveys of those who are hard to interview. (NORC has been extraordinarily successful with such populations, including young and highly mobile respondent populations and even fugitives from justice.) In recent years, several have become highly skilled at working with military personnel to arrange interviews with respondents in the armed services-a task that can require securing active cooperation from the military if the respondent is stationed on board a ship or at a remote site.

The Field Manager's job is a difficult one, and the most successful field staff members are those who enjoy the intellectual and interpersonal challenges it poses. The job requires considerable travel, most of it within the Field Managers' own geographic areas but some of it outside and even overseas. Some studies, most recently the 1985 Air Force Study of Work Groups, require major data collection efforts outside the continental United States.

Over the course of a year, the Divisional Field Managers and District Managers work an average of two-thirds time, usually concentrated over the fall, winter, and spring, when the demands for data collection are heaviest. This compression of their working year means that they often work long hours, full of challenges whose precise nature can never be fully anticipated.

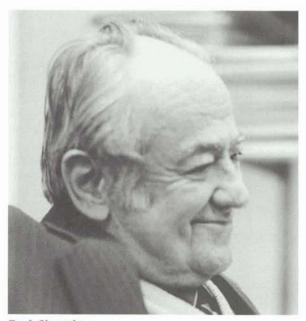
#### PAUL B. SHEATSLEY

In October 1941, Harry Field founded NORC. In January 1942, Field hired Paul B. Sheatsley. In September 1986, Sheatsley retired from NORC, and was promptly engaged as a consultant to the organization.

In certain circumstances a person comes to typify an organization, and in the course of 45 years NORC has in many ways borne the stamp of Paul Sheatsley. During his long career, Sheatslev helped develop survey research into a scientific discipline through his work on questionnaire design and interviewer effects, and he sought always to make NORC the exemplar of the highest standards. He has made major contributions to the literature on race relations and medical sociology. He participated with Harry Field in the first national conference on survey research-held in Central City, Colorado, in 1946-which led to the founding of the American Association for Public Opinion Research. He served as president of AAPOR in 1967-68, and received its Award for Exceptionally Distinguished Achievement in Public Opinion Research in 1982.

Sheatsley was graduated from Princeton University in 1936. After stints editing a weekly newspaper and managing publicity for the Newark Bears baseball team, he became an interviewer for the Gallup Poll and then a manager of interviewers for George Gallup's Audience Research Institute. When he joined the staff of NORC in 1942, as director of its New York office, NORC was less than one year old, and survey research was also in its infancy. The popular press's straw polls had only recently been replaced by the scientific sampling and interviewing methods of Gallup, Elmo Roper, and Archibald Crossley.

With the coming of World War II the emerging survey research industry gained a new client: the United States government. NORC's New York opera-



Paul Sheatsley

tion conducted dozens of studies for the Surveys Division of the Office of War Information, which monitored civilian morale and war-related attitudes and behavior.

The end of the war meant, for NORC and for Sheatsley, a return to the agenda of Harry Field-to conduct scientific inquiry in the public interest and expand the range of the discipline. In 1946, Field went to Europe to help organize an international survey research consortium; as he was leaving Paris, the plane in which he was riding crashed on takeoff, killing everyone on board. It was left to Sheatsley and Field's other NORC colleagues to carry on the research mission that Field had begun. In the decade following Field's death, Sheatsley worked closely with Herbert Hyman on his landmark study of interviewer effects, and NORC fielded scores of surveys on public health. knowledge and attitudes toward mental illness, anti-Semitism, civil liberties, and U.S. foreign policy.

In 1962, Sheatsley left the New York office and moved to Chicago to direct NORC's Survey Research Service (SRS). The precursor of the current Survey Group, the SRS fielded hundreds of surveys during the 1960s and early 1970s, on critically important social issues such as race relations, sexual behavior, and public financing of health care. During this period, Sheatsley had a lead role in designing and conducting such classic surveys as the Study of Public Reaction to the Assassination of President Kennedy, a flash survey fielded within days of the President's murder.

Sheatsley's contributions to survey research and to our knowledge about American society were formally recognized by NORC in 1986, when the organization's library was named the Paul B. Sheatsley Library. A special fund created in Sheatsley's name will pay for additions to the library in the field of survey methodology.

## The Research Group

## The Economics Research Center

A common perception about economics research is that it is concerned only with aggregate issues such as inflation, unemployment, and foreign trade. The family, a major area of research among sociologists and psychologists, is not usually seen as a topic of economic analysis. In fact, the family is an economic unit that resides within and is affected by the national economy-and, in turn, affects that economy. The structure of the family; decisions concerning whether or not to have children and whether or not each family member will develop job skills and seek employment; the ways in which families allocate their resources among market goods, services, and savings, and among family members—all of these issues play a significant role in the growth and structure of the nation's economy, and all of them are addressed in the Economics Research Center's program of research on the family, one of several ERC research programs.

The Economics Research Center conducts empirically oriented studies in economics. ERC has three specific objectives:

- To investigate issues of long-run relevance to the economy and to social and private behavior
- To promote basic research by providing training and an appropriate research environment
- To improve the tools of empirical research by providing better survey data and better techniques of statistical analysis



Robert Willis

The ERC has approximately thirty active research associates who are faculty members at the University of Chicago and at other universities in the United States, Canada, Sweden, and Israel. During 1985-86 it housed five postdoctoral fellows in economic demography and, over the course of the period, several visiting scholars from universities in Sweden and Israel.

ERC research is funded primarily by grants from the National Science Foundation and the National Institute of Child Health and Human Development, with additional support in the form of grants from other government agencies and private foundations.

#### Research in 1985-86

As in past years, the major research programs in the Economics Research

Center during 1985-1986 focused on the family and population, applied econometrics, and labor economics.

The largest single activity within the ERC is the Program in Family and Demographic Change, which consists of a set of research projects on economic demography that are organized within an NICHD-sponsored Center for Population Research. During 1985-86 there were six active research projects in this area. These dealt with the relationship between lifecycle female labor supply and fertility (research conducted by Research Associates Joseph Hotz and Robert Miller); determination of the timing and spacing of births (Hotz and Research Associates James Heckman and Thomas Mroz); the economic analysis of divorce settlements (ERC Director Robert Willis and Research Associate Yoram Weiss); the dynamics of marital and cohabitation behavior (Willis and NORC Director Robert Michael); and altruism and population growth (Research Associates Gary Becker and Kevin Murphy). Becker, a major figure in the application of economics to the study of the family, is profiled in the accompanying piece on some of his accomplishments in 1985-86.

Most of this work is devoted to the analysis of demographic behavior in the contemporary United States. However, both international and historical dimensions are represented, by work on the impact of labor market and social policies on Swedish fertility (Heckman and Research Associate James Walker); by a study of fertility behavior in France be-

fore and after the French Revolution (Mroz); and by a proposed project to gather data in Taiwan on female labor market behavior and intergenerational transfers (Research Associate William Parish).

The Taiwan proposal is one of several ERC research projects that involve active collaboration with NORC's Survey Group. Another such project is the "Analysis of Family Events Histories of the Class of 1972." This project, conducted by Michael and Willis, added a questionnaire module to the National Longitudinal Survey of the Class of 1972 (described in The Family) to permit analysis of patterns in marriage, cohabitation, and family networks; the data will also be used on another project, by Willis and Weiss, to investigate the determinants of divorce settlements and treatment of children by divorced parents.

The program of research in applied econometrics was formalized as the Program for Quantitative Economic Analysis in September of 1985, under the leadership of Joseph Hotz. The program's purpose is to encourage quantitative analysis, as distinct from theoretical analysis, of economic problems. It emphasizes the development and implementation of econometric and statistical methods, including econometric applications in macroeconomics, dynamic economic models, aggregation issues, quantitative industrial organization, and economic development. A major research project that began in 1986 under the auspices of this program involves an analysis of the Job Training Partnership Act (JTPA) by means of randomized assignment of trainees to alternative training programs. This five-year project funded by the U.S. Department of Labor involves collaboration among ERC, the Survey Group, and the prime contractor, Abt Associates. ERC researchers—notably Heckman and Hotz—are studying the process of selection into training programs by low-income individuals, and evaluating alternative methods for assessing the impact of such programs on the subsequent earnings of trainees.

The third program of research within ERC focuses on labor market behavior. Research Associate Thomas MaCurdy is creating a framework for formulating aggregate empirical specifications of labor supply that explicitly recognize that part of the population does not work. In his applied research in dynamic economics, Research Associate Sherwin Rosen is using variations of a particular methodological approach to examine several different topics of substantive importance, including the relationship between the division of labor and economic growth. Rosen's other current research includes an empirical study of entry dynamics in professional labor markets, and a study of the dynamics of the cattle market.

James Heckman's research spans all three programmatic areas of research at ERC—the family, applied econometrics, and labor economics. His analysis of the determinants of duration of behavioral states—for example, birth intervals and unemployment—is a case in point. In 1987, he will organize a conference on economic applications in longitudinal data analysis that will bring together researchers to address various economic issues using state-of-the-art econometric techniques.

#### Other Activities

In September 1985, Robert Willis became ERC Director. As an NORC Research Associate with an academic appointment at the University of New York at Stony Brook, Willis was active in helping to create the ERC-particularly the Center for Population Research—in 1980. He is now a Professor in the Department of Education at the University of Chicago, and a member of the University's Committee on Demographic Training. His major research interests include the role of intergenerational relations in demographic transition, and the economics of divorce settlements and child support.

In 1985 the University of Chicago Committee on Demographic Training was formed. Chaired by Robert Michael, the Committee is closely tied both to ERC and to the University's Ogburn/Stouffer Center for the Study of Population and Social Organization, greatly enhancing the potential for interaction between the ERC's population program and demographic research and training in the University.

In 1985 and 1986, ERC sponsored or hosted several conferences as well as many workshops. For example, the programs in population and in labor sponsored a day-long conference on potential research uses of the Census Bureau's Survey of Income and Program Participation, and began a biweekly demography workshop with ERC support. The workshop gives the Center for Population Research a forum for scholars from outside the organization. It also acts as an adjunct to the Committee on Demographic Training, because it attracts graduate students from the fields of economics, sociology, and education—the three fields the Committee encompasses—who present their research at the workshop.

In October 1986, the Program in Quantitative Economic Analysis cosponsored a conference at NORC with the Econometric Society, on testing econometric models of intertemporal choice. With support from the Alfred P. Sloan Foundation, a conference on economic applications of longitudinal data analysis is planned in 1987.

ERC also engages in dissemination activities involving publications. The Journal of Labor Economics, initiated by ERC and published by the University of Chicago Press in conjunction with ERC, is edited by Research Associate Edward Lazear. Two special issues of JOLE were published in 1985 and 1986: "Trends in Women's Work, Education, and Family Building" in 1985, and "The Family and the Distribution of Economic Rewards" in 1986. Also during 1985-86, thirty papers in ERC's discussion paper series were issued and distributed to Economics Departments and individual scholars around the world.  $\square$ 

#### GARY S. BECKER

When the National Institutes of Health selected NORC Research Associate Gary S. Becker to receive an NIH MERIT Award in 1986, Dwane Alexander, Director of the National Institute of Child Health and Human Development, called Becker one of "the most outstanding scientists supported by the Institute." Becker is University Professor in Economics and Sociology at the University of Chicago. He is also President of the American Economic Association.

The objective of the MERIT (Method to Extend Research in Time) award program is to provide long-term stable support to investigators "whose research competence and productivity are distinctly superior" and whose work is in a "research area that is of special importance or promise." MERIT Award financial support extends for a period of up to ten years.

Gary Becker has written extensively on the economics of the family and on lifecycle economic theories, specifically on such topics as labor market human capital, the sexual division of labor, childbearing decisions, and life-goal choices. Becker is credited with revolutionizing the study of the economics of the family. NORC Economics Research Center Director Robert Willis has written: "Although interesting insights on the family can be culled from the classics, systematic development of the economics of the family is a recent phenomenon, beginning in the late 1950s when Liebenstein (1957) and Becker (1960) attempted to address the determinants of fertility behavior within the framework of consumer theory."

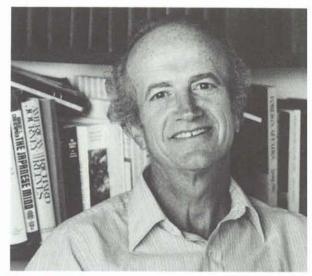
In 1960 Becker presented a model for parental demand for children that is analogous to consumer demand for durable goods. Becker's hypothesis: that the cost of children was in part endogenous because parents receive utility from increased child "quality" as well as from increased numbers of children.

In 1981 Harvard University Press published Becker's *A Treatise on the Family*. In the book Becker articulated an economic structure encompassing the whole of family life. *A Treatise* is the culmination of Becker's first 20 years of study of the family.

Becker's current research, supported by the MERIT award, focuses on altruism, fertility, and population growth. In this project, begun in 1986, Becker is studying the relationship between economic growth and a family's incentives to accumulate capital or to invest in their children.

Becker seeks to integrate the economic approach to fertility, which emphasizes the effects of income and the costs of rearing children, with the analytical links between decisions made by different generations of the same families. This modified economic analysis should present a more accurate portrait of the ways in which fertility interacts with macro variables such as wage rates, capital accumulation, and population growth. He further expects to investigate how fertility and capital acquisition are affected by such forces as interest rates, social security systems, declining child mortality, and social subsidies or taxes related to childrearing.

Becker's research home is the NORC Economics Research Center. Becker, NORC Director Robert Michael, James Heckman, Sherwin Rosen, and ERC Director Willis were the founding scholars of ERC.



Gary Becker

## The Methodology Research Center



Bruce Spencer

How can survey researchers tell whether the answer a respondent gives really addresses the question they are trying to ask? How can they tell whether a question really addresses the social issue they are investigating? How can they identify—and, ultimately, eliminate—the influences of question wording, interviewer effects, question order, and the respondent's attitudes toward surveys in general? These are some of the questions addressed by the work of NORC's Methodology Research Center.

Methodological issues have always been an important focus of work at NORC. The organization was involved in the early development of survey research as a social science, and NORC scholars have produced such methodological classics as Interviewing in Social Research, by Herbert Hyman, and Response Effects in Surveys and Asking Questions, both by Seymour Sudman and Norman Bradburn.

The MRC was created in 1985 under the direction of NORC Research Associate Bruce Spencer, who is an Associate Professor in Northwestern University's Department of Statistics, its School of Education and Social Policy, and its Center for Urban Affairs and Policy Research. The new center consolidated NORC's longstanding commitment to methodological research. Its staff are an interdisgroup whose faculty ciplinary appointments are in statistics, education, psychology, and related areas. All share an interest in the use of survey data in social scientific research.

NORC surveys involve a range of tasks that require different methods. The scope of the tasks can be summarized as follows:

- Identify phenomena of interest or potential interest (decide what to try to measure)
- Design a measurement instrument (a questionnaire and interviewer protocol)
- Design a strategy for delivering the instrument (draw the sample)
- Implement the strategy (execute the sample, contact respondents)
- Obtain the measurement (perform the interviews and code results into data)
- Process the data (edit data, clean it, and put it into computer-readable format)
- Analyze the data
- Produce reports and disseminate the results (including public use tapes)

The MRC's mission is to engage in research and innovation in all of these activities, and thereby to improve the quality and utility of survey data. The MRC provides a bridge between the Research Group and the Survey Group, enabling each one to benefit from the work of the other with the objective of improving data quality.

A critical function of the MRC is the maintenance of NORC's national sampling frame, which is described in the accompanying piece.

#### Research in 1985-86

The major research activities of the MRC since its inception in 1985 have been in the areas of cognitive processes in survey responding, basic and applied research on educational and psychological measurements, and imputation for missing data.

Research Associates Norman Bradburn, Roger Tourangeau, and Roy D'Andrade are studying the processes that are invoked when a person responds to a survey question. This work is supported in part by a grant from the National Science Foundation for a project entitled "Cognitive Processes in Survey Responding: Context Effects." Bradburn, Tourangeau, and D'Andrade are developing and testing theories of the response process, and will contribute to knowledge about the effects of question placement and wording on survey response. They are also investigating the response effects of such unpredictable factors as the respondent's mood at the time of the survey.

Research Associate Darrell Bock is engaged in pioneering work in the psychometric development of testing. For several years, Bock has played a major design and evaluation role in the State of California's assessment of its educational system in grades three through eight—a role that has included helping the state educational system monitor its own performance. His current research topics include scaling, latent trait modeling, modern methods of factor analysis in tests, adaptive testing, and the develop-

ment and application of models for designing, analyzing, and reporting educational assessment data—at the school level as well as at the state level. Bock's work is funded by the California Assessment Program of the California State Department of Education, by the Office of Naval Research, and by the National Institute of Education.

In the area of imputation, Research Associate Donald Rubin is developing a method to impute values for "missing" data that might arise from nonresponse in surveys. The method is known as "multiple imputation" and it carries the distinct advantage of reflecting the true uncertainty in the basic imputation method. It is important to reflect this uncertainty because any single imputation may be wrong and analysts need to know how wrong the imputation is likely to be. Rubin's NSF-supported project, "Developing Multiple Imputation As a Recalibration Tool, with Application to the U.S. Census 1970 and 1980 Occupational Classifications," is attempting to apply this method to a large and important database.

Additional MRC research during 1985-86 included an attempt to develop a theory of diagnostic inference; an investigation of the psychological bases of causal judgments and attempting to find out how people evaluate evidence; an inquiry into which environmental characteristics help or hinder the learning of probabilistic relationships; and research on biostatistical problems, such as measures of morbidity and mortality.

#### Other Activities

During 1986, MRC ran a weekly workshop series, in conjunction with the Survey Group and the other research centers. The workshops were open to the public. The speakers included two Chinese academics speaking on the onechild program and its effects on Chinese society; a behavioral scientist from the University of Chicago who discussed research on how respondents estimate the answers to questions that cannot be answered by simple recall; and an NORC Senior Survey Director who described the methodological challenges involved in estimating and interviewing the homeless. In 1986, a two-day conference on context effects in surveys, funded by NORC, drew the leading researchers in the field to discuss such issues as order effects, interviewing style as a context effect, and the influence of questionwording on white response to questions about affirmative action for blacks. MRC also continued its regular consultations with the Survey Group regarding methodological issues in ongoing and proposed surveys.  $\square$ 

## THE NATIONAL SAMPLING FRAME

The heart of many NORC survey research projects is the NORC national sampling frame. This carefully designed and edited database enhances the quality of all projects requiring a national sample and accelerates each project's speed of execution.

The costs of developing and implementing such a resource are substantial. NORC has long been one of the few organizations to maintain a national sampling frame updated with the decennial census. And NORC has been a leader in the application of computer technology to sample design, further increasing the frame's flexibility. In the interest of cost efficiency. NORC and the Survey Research Center of the University of Michigan chose, in 1982, to join forces in creating the frame based on the 1980 decennial census. This fruitful scientific collaboration has benefited both organizations.

A national sampling frame is a list, usually of individual dwellings, from which samples for individual studies can be selected. The current NORC frame was selected by a team of NORC and SRC researchers. At NORC, the effort was led by Technical Director Martin Frankel and NORC Senior Methodologist Roger Tourangeau.

The universe for the national frame includes all U.S. households in the 50 states and the District of Columbia. This satisfies the requirements of the largest national surveys, yet the frame is flexible enough to exclude the two noncontiguous states if data collection in those places is not required, allowing projects to avoid the additional costs often associated with data collection in Alaska and Hawaii.

With the exception of certain virtually unpopulated sections of Northern Alaska, the national frame provides complete coverage of the land area of the United States. County-level records provided the primary database for most



Martin Frankel leads a workshop on the national sampling frame for senior survey staff

of the country. Township data, parishlevel data, or data on independent cities served in place of county records in places where there are no counties. Each region of the country receives representation in proportion to its population.

The national sample contains 84 primary sampling units. These 84 areas consist of individual counties or groups of neighboring counties. If very large samples are needed, an additional 84 PSUs, held in reserve, can be made available. Within each of these areas, a number of smaller areas, usually blocks, were selected. NORC maintains a complete listing of the dwellings on these blocks—more than 30,000 blocks.

Should the frame need modification before data from the 1990 U.S. census become available, procedures are in place to modify it using mid-decade data. In addition, when interviewers go into the field using samples selected from the national frame, new housing is given an appropriate chance of being added. The effectiveness of NORC's sample design and implementation activities is evidenced by the fact that the coverage obtained using the national sample is comparable to the industry benchmark, the coverage obtained by the U.S. Bureau of the Census in its Current Population Surveys. NORC's extensive use of the national frame over the past few years has resulted in its continual updating for use in subsequent studies.

## Chapin Hall Center for Children



Harold Richman

Fully 72 percent of black children and 47 percent of white children who live in Illinois households headed by single parents live below the poverty line.

This disturbing statistic comes from *The State of the Child 1985*, by Research Associates of the Chapin Hall Center for Children. The accompanying piece on this report provides further information about the findings and conclusions presented in it.

The Chapin Hall Center was formed in 1985 when Chapin Hall for Children, a 125-year-old private agency in Chicago, entered into an affiliation with the University of Chicago. The Chapin Hall Center's Executive Director is Harold Richman, who was formerly director of NORC's Social Policy Research Center,

and the new center houses a major research program on children's issues that was initiated and developed by the Social Policy Research Center.

The original purpose of Chapin Hall for Children in 1860 was to provide direct care for children in an institutional setting. In creating the new Chapin Hall center, the board of Chapin Hall sought to address the problems of child welfare in a broader social context. Chapin Hall is now devoted to developing knowledge and understanding of the problems that affect Illinois children, and the conditions and policies that may cause or alleviate these problems. It also serves as an informational and educational resource on children's issues and policies; and it collaborates with public and private children's agencies in developing, testing, and evaluating new policies and practices aimed at improving children's welfare.

#### Research in 1985-86

Chapin Hall's current research program has four major elements. These are:

- Monitoring existing data on the condition of Illinois children, and creating new data
- Research on foster care, and also on the kinds of nonfamilial community support systems available to children who live with their families
- Special projects and collaborative demonstrations with local community organizations, social service providers, and government agencies
- Dissemination activities

During 1985, the center continued its empirical work on adolescent pregnancy, preparing a report to the Joyce Foundation and completing data collection on a longitudinal study of teenage welfare mothers, directed by Mark Testa and Patricia Mosena. A survey of General Assistance recipients in Illinois was completed under the direction of Chapin Hall's Assistant Director, Matthew Stagner; the findings, when published, led Governor James Thompson to create Project Chance, a program to improve job training, placement, education, and daycare for GA recipients. Center staff researched and wrote two major articles: "Children in an Aging Society," by Harold Richman and Matthew Stagner, published in Daedalus and in Our Aging Society (Norton, 1986); and "Child Welfare in Social and Historical Perspective," by Mark Testa, published by the Humphrey Institute for Government at the University of Minnesota.

The possibilities offered by an interdisciplinary research setting were realized when Research Associates William Parish and Dennis Hogan began a study that uses a combination of conventional survey data and previously unanalyzed "locating data"—both collected by NORC's Survey Group—to examine aspects of family background that may moderate the effects of single motherhood on young women. Parish and Hogan's project uses data from the National Longitudinal Survey of Labor Force Behavior/Youth Cohort, a large panel study in which annual interviews are conducted

with 11,000 young men and women, including oversamples of black, Hispanic, and economically disadvantaged youth. The researchers are analyzing responses to survey questions that ask the respondents who they can turn to for support: they are also analyzing data from the NLS locating files, which contain information about persons who are close enough to the respondents that they will always know where to find them. By comparing support networks among respondents, Parish and Hogan are exploring whether kin and informal networks can provide support that substitutes for intact family life.

#### Other Activities

During the past two years, the Chapin Hall Center was necessarily occupied with two major tasks: establishing a new administrative structure and procedures, and converting its newly redefined mission into a long-range program of work. As part of the first task, the Center worked out new relationships and arrangements with the University of Chicago. It also worked with federal and state government, and with private foundations and corporate giving officers, to explain its purposes and assess the possibilities for ongoing support.

The Center will continue to publish *The State of the Child* at regular intervals—approximately every five years—but will also be reporting more frequently on critical social indicators such as child poverty and children's health. Information about the condition of Illinois children will be

collected in two ways: by continuing to organize and distill existing data from state departments, the Census Bureau, and other sources; and by creating new data through surveys of children and families on issues where information is lacking or outdated. Center scholars are also looking into the possibility of doing some indicator comparisons with other states, particularly California and New York.

Research Associate Mark Testa and Senior Program Associates Robert Goerge and Mary Ann Hartnett have developed a prospectus and work plan for Chapin Hall's continuing involvement in the area of substitute care for children. Substitute care, which includes not only traditional foster care arrangements but also group homes and institutional care, is an especially appropriate research area for the Center. This research emphasis is in keeping with the founding mission of the original Chapin Hall, and takes advantage of the Center's access to a huge database on the experience of 80,000 children in foster care in Illinois during the past ten years. This database was created by Chapin Hall in collaboration with the Illinois Department of Children and Family Services, in order to enhance the state's capacity to manage its foster care Accessible by program. microcomputer network, the database allows local DCFS field offices access to data on individual children for case planning and analysis at the local level.

The various special projects and collaborative demonstrations in which Chapin Hall has been involved during the past two years have given the Center valuable experience and credibility in a number of areas. For example, Chapin Hall is collaborating with The Woodlawn Organization, the Chicago Board of Health, and the Illinois Department of Public Health to develop an information and evaluation system for the state's new Infant Mortality Reduction Initiative. Other such projects include an exploratory epidemiological study of chronically ill, handicapped, and disabled children in Illinois, done in conjunction with LaRabida Children's Hospital and under the sponsorship of the Colman Fund for the Wellbeing of Children; a study of the use of social service agencies by welfare families in Chicago; a briefing paper on childcare to be used by the new Governor's Task Force on Childcare; and an investigation into the threat to children's services posed by the insurance liability crisis that has increasingly beset childserving organizations.

As part of its dissemination activities, Chapin Hall has established a discussion paper series. This will disseminate the center's work in a form that can receive wide exposure and comment. In addition, the Center has begun holding seminars and colloquia in areas in which it has a programmatic commitment.

## THE STATE OF THE CHILD REPORT

The State of the Child: 1985, by Chapin Hall Research Associates Mark Testa and Edward Lawlor, generated considerable coverage in the Chicago news media when it was published in March of 1986. It was featured in stories in the Chicago Sun-Times and Tribune and on local television news, after which the Tribune cited it again in an editorial, calling for wideranging improvements in Illinois social services, medical care delivery, job training programs, and education.

The current report is an update of an earlier (1980) State of the Child report. The first report moved Governor James Thompson to establish a Task Force on Children to examine what the state might do to improve their condition. The latest report details the increasingly bleak outlook for Illinois children, especially those living in poverty.

The State of the Child reports use demographic and attitudinal data to present a concise but comprehensive portrait of children's lives in the state of Illinois. By presenting trends in selected social indicators, they tell us about the children of Illinois: where they live, the composition of their families, their economic situation, and their experience in care away from home. They also present data on the violence in children's lives, and their expression of alienation from themselves and from society.

The 1985 report singled out four specific findings for special attention.

First, the authors presented a demographic paradox: while fewer children are being born—which, all other things being equal, should mean that there are proportionally more resources available to children—the collective condition of children and youth in our society has worsened. One explanation for this is that while the birth rate is declining in all sectors of society, this decline is occurring

more rapidly among wealthier and bettereducated couples, so that proportionally more children are being born in poverty.

Second, they found that the care provided to children in families increasingly involves only one parent, usually the mother. Marital separation and divorce accounts for some of this, but nearly a quarter of all Illinois children are born out of wedlock.

Third, they found that children are at greater risk of poverty than are adults. The official count of children in families with cash incomes below the national poverty level has grown to nearly one in five. And despite the increase in child poverty rates, a declining fraction of Illinois children are receiving welfare assistance from Aid to Families With Dependent Children (AFDC) because of more stringent restrictions on eligibility.

Fourth, Testa and Lawlor found that the number of children in foster care is increasing, despite appearances to the contrary. They report that recent trends in foster care have been obscured by the large decreases in the number of adolescent girls, predominantly white and from downstate Illinois, who are placed in foster care. In contrast, the number of young black children in foster care is steadily increasing—enough to more than offset the decrease among the older white girls. This increase is closely tied to an increase in the number of black families living in poverty.



The three volumes of the Children in Illinois series published to date: The State of the Child, Children and the State, and The State of the Child: 1985

In attempting to find "a single thread which can weave together our findings and explain the present state of children in Illinois," the authors confess that no simple truth reveals itself, that the findings are extremely complex and the explanations multiple. However, they state that one set of connections stands out in several places. It involves the continuing employment problems experienced generally in Illinois. The authors point out that much of the recent upsurge in child poverty is being driven by unemployment of wage-earners in two-parent families, and that Illinois's unemployment rate has been above the national average for eight years.

While such unemployment is a serious problem for both whites and minorities, it is especially serious among minorities. Testa and Lawlor warn that the strong association between poverty and minority racial and ethnic background is even more striking than it was in their 1980 report.

"The danger of polarization between the haves and have-nots along racial and ethnic lines in our child population is a pressing social and economic problem of enormous dimensions," the report concludes. "To invest in our future requires, as our demographic predictions indicate, our realizing the importance of race and ethnicity in understanding current problems, in developing policies, and in setting priorities for children in Illinois."

# The Center for the Study of Politics and Society



Christopher Achen and Norman Nie

The Center for the Study of Politics and Society was established in September of 1986. The new center will house scholars in political science and sociology whose work focuses on the fabric of American and international society.

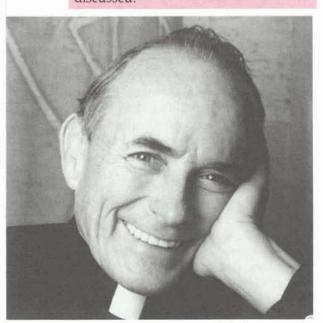
The Center's codirectors are Norman Nie and Christopher Achen, both professors in the Department of Political Science at the University of Chicago. Joining the new center from other parts of NORC's Research Group are longtime Research Associate Andrew Greeley of the University of Arizona, and GSS Coprincipal Investigators James Davis (Harvard University) and Tom Smith (NORC). Center Research Associates new to NORC include John Padgett of the University of Chicago and Henry Brady of Harvard.

The interests and ongoing projects of these founding scholars constitute the initial research agenda of the Center. Padgett is an organizational theorist who is studying the operation of political parties, both in the contemporary U.S. Congress and in Renaissance Florence. Brady is currently engaged in research on survey methodology and psychometrics, and on the presidential primary system in the United States. Achen is studying the rise of the Nazis in pre-World War II Europe. Nie is primary methodologist on the Soviet Interview Project, an investigation of the Soviet social, economic, and political structure, as revealed by interviews in the U.S. with Russian immigrants. Davis and Smith are continuing their work on the design and analysis of the General Social Survey, which was fielded in the United States for the twelfth and thirteenth times in 1985-86, and are also involved in the expanding international aspects of the study. Greeley's several investigations into the sociology of religion will also be conducted from the center. One of these is described in "Andrew M. Greeley."

#### ANDREW M. GREELEY

The influence of religion on the values of modern society in the United States, Great Britain, and Ireland is the subject of a forthcoming book by Center for the Study of Politics and Society Research Associate Andrew M. Greeley. Greeley, an NORC researcher for over 25 years, has devoted his career to the study of religion and ethnicity in America's pluralistic society.

Greelev has noted throughout his career that these influences are often excluded from serious consideration. In his book Ethnicity in the United States Greelev wrote: "The blunt truth is that many members of the elite group of Americans...know more about Nigeria than they do about Queens or the northwest side of Chicago." In his forthcoming work, Religion and Values: Three English Speaking Countries, Greeley warns against the "good old days" or "bad old days" fallacies that lead to undocumented conclusions. Greeley notes that there is often an "everyone knows that..." school of cocktail party sociology when such topics as the decline of the influence of religion or the secularization of society are discussed.



Andrew Greeley

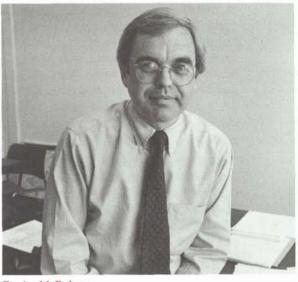
In Religion and Values Greeley analyzes data from an international survey of values sponsored by the European Values Systems Study Group. Among the several issues under study is whether certain behavioral attributes and attitudes are governed by religious affiliation. Greeley begins with the null hypothesis that denominational affiliation does not affect value orientation in these three nations and then demonstrates that, in fact, there are statistically significant influences traceable to denominational association.

Andrew Greeley has written widely on the behavioral and attitudinal influences of ethnicity and religion in the United States. Greeley's work in these areas examines the manner in which this nation was created through immigration and shaped by the values immigrants brought with them and the values they acquired.

Through analysis of existing data and through the collection of new data, including his sponsorship of question modules on the NORC General Social Survey, Greeley has compiled a dataset on American religious views and behavior unrivaled in both scope and detail. His research explores such diverse issues as mystical experience, church contributions, alcohol consumption, and political affiliation.

Andrew M. Greeley is a Roman Catholic priest and a professor of sociology at the University of Arizona. Greeley was ordained in 1954 and began graduate studies in sociology in 1960. He is the author of many scholarly works on ethnicity and religion. Greeley does conventional parish work in Tucson and unconventional parish work as a novelist working with Christian themes. He also writes a newspaper column in the *Chicago Sun-Times*  $\square$ .

## The Center for Computing and Information Systems



Reginald Baker

The collection of information, its conversion to machine-readable form, and analysis of the resulting data constitute the principal business of NORC. Questionnaires are designed, samples are drawn, and reports are prepared with computers. Production and cost information are collected and analyzed using computers. Researchers conduct their analyses with computers. The flow of accounting and control information to corporate management is handled by computers.

The mission of the Center for Computing and Information Systems (CCIS) is to meet NORC's needs for computing and information processing services. The Center's role is to help conceptualize and plan the strategy for, as well as to implement, supervise, and carry out, those portions of NORC's work that fall within the general areas of data and information processing.

The Center operates in two modes, one creative and one operational. In its creative mode, the Center leads the corporation to choices and uses of computer technology that provide a strong foundation for its work today and in the future. The Center also is active in the development of computing strategies and approaches for individual NORC projects in the Survey and Research Groups, and the various departments within the Administrative Group. Operationally, the Center has day-to-day responsibility for the management of computing resourceshardware, software systems, and technical staff-to meet the needs of all NORC projects and activities.

The Center's internal organization features seven functional groups: Management and Administration, Systems Development, Applications Programming, Survey Support, Data Entry, MIS Support, and User Support. The basic work unit is the project. Each project is headed by a CCIS Project Manager and includes programmers and other technical staff as needed to meet project objectives.

#### Activities in 1985-86

As in previous years, the bulk of the Center's work was in direct support of survey projects. All survey-related programming—which includes such tasks as the computing aspects of sampling, setup and support of survey management systems, programming of data entry systems, machine editing, and production of survey deliverables such as tapes and codebooks—is the responsibility of CCIS. CCIS also performs most of the required data entry.

Center staff are also responsible for the development of new automated systems to support NORC's survey activities. A number of projects in varying stages of completion have been undertaken. Chief among these is a new, microcomputer-based data capture system capable of supporting three modes of data collection: computer-assisted telephone interviewing (CATI), computer-assisted personal interviewing (CAPI), and computer-assisted data entry (CADE). Three surveys in 1986 used the system in either a CATI or CADE mode.

Nineteen eighty-six also saw the introduction of a new microcomputerbased survey management system (SMS). This system provides a means by which survey managers monitor survey progress, both in the field and in the home office. Interviewer assignments, response rates in different sample components, changes in the location of respondents, and the status of individual cases are all tracked through the SMS. The system is currently the NORC standard for receipt control on all survey projects.

The CCIS Development Group also introduced a pilot field management system (FMS) to collect weekly cost and production forecasts from field managers. The pilot system was used to monitor the fieldwork for the current rounds of the High School and Beyond and NLS-72 projects. Microcomputers loaded with the pilot system and its database were placed in the homes of NORC Divisional Field Managers. These managers used the system for electronic transmission of cost and production estimates to the NORC home office, where all reports were integrated into a single project database. The HS&B/NLS-72 project director used the information in the database to monitor survey progress and as a basis for decision making about data collection strategies.

While the bulk of CCIS's work was on survey projects, a number of projects for the NORC research centers were also undertaken. CCIS staff worked, for example, with staff of the Economics Research Center to effect a major change in the pattern of computer use there. Once completely dependent on mainframes and minicomputers, ERC researchers now do the majority of their work on microcomputers.

CCIS staff also joined with the Methodology Research Center in a preliminary study of machine editing. It is hoped that this work will grow into a full-scale study of data cleaning and imputation methods that may well change dramatically the way in which NORC processes the data it collects.

Finally, CCIS worked with research center staff to develop and implement a Budget Management System designed to support financial recordkeeping and grant management in NORC's research centers. A first release of the system was implemented in the ERC in 1985. Revisions and implementations in other research centers are planned for 1987.

Another important responsibility of CCIS is the support of those computing systems that fall under the general rubric of Management Information Systems (MIS). The major components of NORC's MIS are its corporate accounting, personnel, and project management systems. In 1986, CCIS undertook to move both the personnel and project management systems to NORC's microcomputer local area network (LAN). In 1987, major portions of the corporate accounting system will follow.

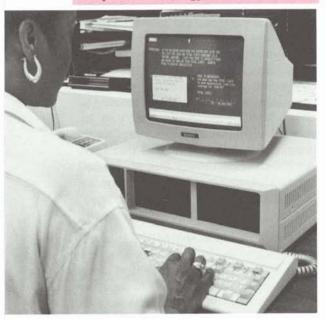
Nineteen eighty-six was a year of significant movement toward a long-term goal of corporate-wide access to computing resources and information. The existing microcomputer-based LAN was extended to all of the major groups within NORC—the Survey, Administra-

tive, and Research Groups, and to CCIS itself. The network provides distributed access to centralized peripherals that include large amounts of disk storage and high-quality laser printers. An office automation environment with word processing and spreadsheet standards was established and is now common to all of NORC. Electronic mail was instituted within CCIS and Survey Operations, facilitating information exchange. An Information Center was established to provide training and support in the use of microcomputers.

NORC's access to specialized computing resources was broadened by strengthening its ties to computing centers at the University of Chicago. NORC and the University's Computation Center are now housed in the same building at 1155 East 60th Street, and this arrangement has provided a major enhancement of NORC's computing capability. A new agreement has been negotiated with the Computation Center that gives NORC access to an extremely powerful and wellmanaged mainframe computing installation. To supplement both the Computation Center services and those provided internally on NORC's microcomputerbased LAN, CCIS is also working to establish relationships with other computing centers accessible through the campus Ethernet. Currently in a pilot stage, the University of Chicago Ethernet network links over 20 campus computers. It also provides a bridge to a number of offsite computing facilities and nationwide telecommunications networks.

#### AUTOMATING THE SURVEY PROCESS

In 1985, staff from the Center for Computing and Information Systems and NORC's Survey Group began work on a project to redesign NORC's automated systems for survey production. While existing systems were more than adequate to the demands of NORC's survey projects, most were not taking full advantage of important new developments in computer technology.



NORC's Integrated Survey System generates screens for a variety of tasks, including online questionnaire development, data entry, and computer-assisted telephone interviewing.

The project to develop the new systems is called NISS, for NORC Integrated Survey System. The project's principal goal is to replace existing systems with a single integrated system capable of running on microcomputer hardware. A number of key components are already in place, while development of others is ongoing.

#### The System Design

The software design for NISS is an integrated one featuring three databases that are shared by the system's different components. This design permits the consolidation of several formerly discrete

data processing tasks into a single integrated system, often in a single location.

Surveys begin with the design of a questionnaire and selection of a sample. Once complete, the questionnairequestion text, allowable responses, and skip patterns-is defined to NISS and a questionnaire database is created. This database is used by NISS components to generate a data entry program (including a CATI application), control cards for the statistical systems SAS and SPSS, and portions of the survey codebook. The sample is loaded to a survey control database, where all survey events are tracked and monitored. Outcomes of actions on lines in the sample, such as interviewer assignments, completed interviews, and mail receipt, are posted to the survey control database. Other NISS components performing functions such as data entry, coding, and editing automatically record their actions in the survey control database as well. Data records corresponding to interviews are created by NISS and stored in a response database, where they are subject to further processing and the generation of project deliverables.

#### The System Hardware

NISS is designed for NORC's microcomputer-based local area network (LAN). NISS applications are run on one of seven file servers on the LAN. Applications are accessible from more than 120 LAN microcomputer workstations throughout NORC.

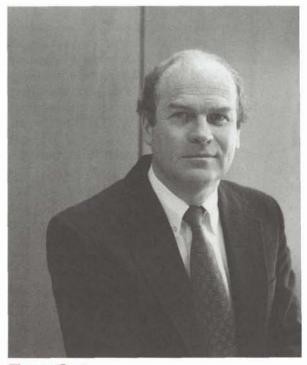
While the majority of NORC's survey production work is now done on the NORC LAN, some related, non-NISS applications, including sample preparation and creation of the final survey data files and codebooks, continue to be mainframe-based. In 1987, the LAN will be augmented with a gateway to NORC's principal mainframe computing resource, the University of Chicago's Amdahl 5860. This gateway will provide a smoother connection between LAN-based NISS applications and related applications still running on the Amdahl.

## The Administrative Group

From an administrative standpoint, the past two years were a time of significant change at NORC. At the beginning of fiscal 1985, NORC's survey operations were consolidated in Chicago, and the role of the New York office was redefined to focus on development. At about the same time, NORC completed plans to move its central office from 6030 South Ellis Avenue in Chicago to 1155 East 60th Street. The primary reason for the move was that the organization had outgrown its former quarters: the new space has approximately 11,000 more square feet. The new office also provides opportunities for collegial interaction with the building's other tenants. The University of Chicago Computation Center was already in residence when NORC moved in, and other social science researchers from the University will be arriving in 1987.

While NORC's volume of business remained stable between 1984 and 1985, it grew significantly in 1986: from \$12.5 million in gross revenues to \$16.3 million, an increase of approximately 30 percent. This pattern is expected to continue in fiscal 1987—an additional 20 percent increase is projected. (For further information, see the Condensed Financial Statements, which appear at the end of this section.)

NORC's staff also grew substantially in 1986. The organization had approximately 300 employees during fiscal 1983 and 1984, and more than 450 in fiscal 1985 and 1986.



Thomas Gerst

In addition to these major events and trends, 1985-1986 also saw changes in the various departments that compose iNORC's Administrative Group. In 1985, Associate Director for Administration Thomas Gerst hired a professional human resources manager, Stephen Goldston, to head the Personnel Department, and Robert Stanton, an attorney, as Manager of Contracts and Grants Administration.

In 1986, the Accounting Department and the Center for Computing and Information Systems began an evaluation of NORC's Management Information System (MIS) and its Project Management System (PMS), which had been instituted and maintained for several years on NORC's Harris-500 minicomputers. This review resulted in a decision to remove these systems from the minicomputers and adapt them to NORC's microcomputer network. This process is currently underway and should be finished by mid-1987.

The Office Services Department met the challenge of coordinating the move of computer equipment, office equipment and furniture, and project records from one building to the other with a minimum of disruption to operational activities. The move, performed in phases, was completed in September 1986.

The move to the new building included an opportunity to expand NORC's library. This new library was dedicated by NORC to Senior Survey Director Paul Sheatsley, on the occasion of his retirement, in recognition of his contributions to survey research. The new facility is described in "The Paul B. Sheatsley Library."

## THE PAUL B. SHEATSLEY LIBRARY

The NORC library was established in 1941 as a conventional interdisciplinary research library, a repository of NORC reports and papers, and an archive to house data generated by NORC surveys. In 1986, it was named in honor of retiring Senior Survey Director Paul Sheatsley, and a special fund was established to purchase works on survey methodology. These works are to be known as The Sheatsley Collection.

A modern information resource, the Sheatsley Library subscribes to 120 periodicals, both trade and general interest, and also to a computerized database service that offers extensive coverage of the academic and popular press. The Sheatsley Library is used extensively by the NORC staff and other scientists.

A founding principle of NORC is a strong commitment to public service. In that spirit, NORC Librarian Patrick Bova and his staff happily entertain inquiries from scholars outside NORC; from other research organizations, libraries, and public officials and administrators; and from the public at large. The library staff is well equipped to serve those interested in NORC's work. Bova, who joined NORC in 1961, has been the institution's librarian since 1962. Associate Librarian Michael Worley is a veteran of 11 years' service at NORC.

In addition to the NORC report archive, the Sheatsley Library has major report holdings from Columbia University's Bureau of Applied Social Research, the University of Michigan's Survey Research Center, and the Survey Research Center of the University of California. The library also houses an extensive collection of commercial, foreign, and regional polls from selected time periods, numerous professional journals and popular publications, and the complete file of Opinion News, an NORC publication of the 1940s.

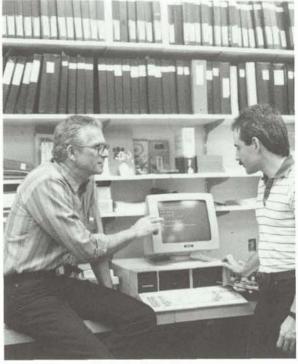
A unique methodological resource, the Sheatsley library survey materials collection houses the instruments from every NORC survey. A portion of the survey materials collection in the Sheatsley Library is duplicated by an archive in the NORC New York office.

Data from several hundred NORC surveys are held in machine-readable form in the library. Many more surveys are housed in this form at the Roper Public Opinion Research Center at the University of Connecticut.

The NORC affiliation with the University of Chicago allows NORC staff members access to that institution's 4.7 million volume collection, as well as to the Center for Research Libraries and other academic library exchange programs. The Joseph P. Regenstein Library at the University of Chicago is the home of the papers of the American Association for Public Opinion Research.

Because of NORC's age and the broad scope of its research, what was begun in 1941 as an organizational aid and reference collection has acquired the additional function of serving as a unique historical treasure house of opinions, attitudes, and behavior. Among these documents is the full question index with sample size and percentage marginals for a series of surveys done by NORC for the U. S. Department of State in 1945 through 1957. This index of inquiries into American attitudes toward foreign policy encompasses over 125 surveys.

NORC has published two bibliographies of reports and articles generated by NORC research, spanning the period 1941 through 1982. Supplements to these bibliographies can be found in this volume and in NORC Report 1983-84. A new bibliography is in preparation.



Patrick Bova and Michael Worley

#### Condensed Financial Statements For the Two-Year Period Ending August 30, 1986

Balance Sheet		
Assets	1986	1985
Current Assets	\$4,915,194 420,629 944,411	\$2,814,850 450,890 1,107,264
Total Assets	\$6,280,234	\$4,373,004
Liabilities and Capital Funds		
Current Liabilities  Long-Term Debt  Capital Funds  Operating Fund	\$3,550,955 -0-	\$1,973,466 -0-
Balance, Beginning of the Year  Net Income to Operating Fund	\$2,149,538 179,741	\$1,979,480 170,058
Balance, End of the Year	\$2,329,279	\$2,149,538
Trustee-Designated Endowment Fund Balance, Beginning of the Year Net Income to Endowment Fund Balance, End of the Year	\$ 250,000 150,000 \$ 400,000	\$ 200,000 50,000 \$ 250,000
Total Capital Funds	\$2,729,279 \$6,280,234	\$2,399,538 \$4,373,004
Income Statement		
Net Revenue	\$16,286,639	\$12,506,961
Total Project Costs		\$ 8,569,846
Total Cost and Expenses	\$16,160,448 126,191	\$12,352,619 154,342
Other Income (Expense)  NORC-Funded Research  Other Income (Net)		\$ (6,508 72,224
Total Other Income		65,716
Net Income for the Year	\$ 329,741 150,000	\$ 220,058
To Operating Fund	\$ 179,741	\$ 170,058

## NORC Staff: 1985-86

The following pages list NORC staff by organizational group. For senior survey and research positions, all persons associated with NORC during 1985 and 1986 are listed. For other positions, the persons occupying them at the end of the period are listed.

#### The Director's Office

#### Director

Robert T. Michael

Associate Director and Special Assistant to the Director

Pearl R. Zinner

Assistant to the Director

Iulie Antelman

Administrative Assistant

Patrick McNeil

#### The Survey Group

Associate Director for Survey Operations

Celia E. Homans

Assistant to the Associate Director

Safiya Karimah

#### Senior Survey Directors

Mary C. Burich Barbara K. Campbell Woody Carter Miriam K. Clarke Calvin C. Jones Shirley Knight Sara Segal Loevy Geraldine Mooney Mary Utne O'Brien Paul B. Sheatsley

Susan Sprachman

Karen Tourangeau Eve Weinberg

#### Survey Directors

Sameer Y. Abraham **Janet Gans** Adele Hast Julia Ingels

Steven Ingels Ruth F. Kellam

Donald Kotecki

Ioan Law

Martha Mandilovitch

Marjorie Morrissey

Ann-Sofi Rodén

Richard Rubin

Alisu Schoua-Glusberg

Penny A. Sebring

Melody Singleton

Natalie Suter

Marcia Turner

Charlene Weiss

#### Assistant Survey Directors

Deborah Alexander Steven E. Alspach

Robert Bailey

Michivo Bennett

Keith Bowen

Claudette Brooks

Terrence Callier

**James Comiskey** 

Kelly Conner

Arleigh C. Dom

Christopher Freed

Harrison Greene Ianis Horne

Edwin Hunt

Gayle Hutchinson

Carolyn Ivory

Wayne Jackson

Richard Kreitman

Louise Little

Marva Lopez

Samuel Lucas Moses Mambia

Patricia K. Marnell

Vassilka Morrison

Ioan Oman

Roxanna Pandya

Cynthia Peters

Dorrice Pyle

Katherine Richardson

Leticia J. Salinas

Ellen Schwarzbach

Daniel Sichelski

Betty B. Simon

Paris Smith

Gail Spann

Linda Stephens

Colette Steward **Julie Stewart** 

Michael Sullivan Elizabeth Thelin

Kurt J. Veith

Donna Wilkinson

Shirley Williams

Lorraine Wilson

Mark S. Wojcik

Daryl Woods

#### Sampling Department

Martin R. Frankel,

Technical Director

Roger Tourangeau, Senior Methodologist

Bruce D. Spencer,

Sampling Statistician

#### Editorial Services Department

Susan Campbell, Communications Director Suzanne Erfurth, Editor/Writer Jeff Hackett, Editor/Writer

#### Office of Field Coordination and Management

Miriam K. Clarke,
Director
Charlene Weiss,
Coordinator of Field Management
Gwen Houston,
Field Manager Staff Specialist
Dianna Sexton,
Interviewer Staff Specialist
Vivian Tillman,
Administrative Assistant

#### District Managers

Karen Baker Patricia Phillips Margarete Smith June Teplitz

#### Divisional Field Managers

Lee Brandon
Virginia Close
Dorothy Daoust
Ann Fried
Cheryl Gilbert
Lois Howe
Wanda Mallison
Kathryn Malloy
Sally Murphy
Ellen Williams
Becky Zahavi

#### Field Managers

Ruth Adams Leslve Axelrod Suzanne Bard Esther Barkley Annemarie Barnhill Mary-Louise Bater Jane F. Belcore Alice Berd Angeline Bregianes Tracy Buie Connie Campbell Maria DiGregorio Bonnie Donley Rosa Dwyer Virginia Eggleston Pamela Engquist Janet Evison Beverley Ferry Patricia Fluck Emily Green Mary Gruner

**Judith Guilmartin** Marilyn Gunn Charlene Harris Gloria Harrison Gregory Hopkins Geraldine Jack Iean Iohnson Gloriette Johnston Chris Klotz Dolores Laake Claudia Lawson Arlene Leonard Diane Lindquist Adelina Lopez Dorothy Manfull Flo Mathes Rosa Matthews Susan McDavit Dorothy Meilink Iean Moore Mary Moore Peggy Nathan Eleanor Palmer Ezella Pickett Arlean Pleasant Jessie Raymond Mona Roddy Claire Rodriguez Kathleen Salmon Arlene Salter Dorothy Snell Barbara Sukman Helen Talle Kristine Talley Oscar Tanner Rosanna Teter Iulia Trujillo Linda Wiedmer Kathy Williams Jacqueline Winchell Joyce Winebrenner

#### Project Services

Jamison W. Adams Sharon Baxter Zorka Benton Genie Bowie Lucian Chuchro Valorie Dixon Richard Dizney Natalya Dragunsky Ronald Eans Joseph Fedorko Nanette Garner Cudjoe Gbogbotsi Barbara Hayes Susan Hemphill Shirley Hicks Keith Johnson Francis Kemp Brian Kuhr Janice Leggs

Jane Lichty David Lopez Frederico Macia Carolyn Miller Eric Nicholson Iamilla Ove Lorraine Sellars Patricia Smith Kimberly Stanuch Frances Stenson Hazel Taylor Ruth Thomas Mary Washington Deborah Wells James Wooley Theodore Wyatt Victoria Zelenkovsky Cynthia Zon

#### Research Assistants

Letitia L. Colston Leslie Conway Arne C. Kildegaard Lorraine Passovoy

#### Administrative Assistants

Marilyn Ford Rochelle E. Gary Leonardo Johnson Heather Rice Cherylanda Schwartz Sandra Walker Wilma J. White Kathleen Williams

## The Research Group The Economics Research Center

#### Director

Robert J. Willis, University of Chicago

#### Research Associates

John M. Abowd,
University of Chicago
Gary S. Becker,
University of Chicago
Charles E. Bidwell,
University of Chicago
Martin Eichenbaum,
Carnegie-Mellon University
Reuben Gronau,
Hebrew University of Jerusalem
Nora Guhl,
Economics Research Center, NORC
Siv Gustafsson,
Center for Worklife Studies
(Arbetslivscentrum), Stockholm

Lars Peter Hansen, University of Chicago James J. Heckman, University of Chicago Ian Hoem. University of Stockholm V. Joseph Hotz, University of Chicago Edward P. Lazear, University of Chicago Glenn MacDonald, University of Western Ontario Thomas E. MaCurdy, Stanford University Robert T. Michael, University of Chicago Robert A. Miller, Carnegie-Mellon University Thomas A. Mroz, University of Chicago Kevin Murphy, University of Chicago H. Elizabeth Peters, University of Colorado Christopher Robinson, University of Western Ontario Sherwin Rosen, University of Chicago Burton H. Singer, Yale University Robert H. Topel, University of Chicago Robert M. Townsend, University of Chicago Nancy Brandon Tuma, Stanford University James R. Walker, Economics Research Center, NORC Yoram Weiss, Tel-Aviv University Christopher Winship, Northwestern University

#### Research Affiliates

Ricardo Barros,
Hewlett Post-Doctoral Fellow
Sonalde Desai,
Hewlett Post-Doctoral Fellow
Suganya Hutaserani,
Hewlett Post-Doctoral Fellow
L. K. Raut,
Hewlett Post-Doctoral Fellow
Sung-Pil Kang,
Visiting Scholar
Machiko Osawa,
Visiting Scholar

#### Research Assistants

Kim Balls

Stephen Cameron Kermit Daniel Marcelo Dabos Thomas Downes Robert Gritz John Heaton Bo Ernø Honoré Karin A. L. Hyde Maseo Ogaki Michael Sabel Argia Sbordone Jeffrey Smith Karl N. Snow Kei Mu Yi

#### Assistant to the Director Julie A. Less

Administrative Assistants Sarah V. Martini Chrisanne Reynolds Hallie D. Smith

Student Administrative Clerks Kirsten Peachey Michael Schoop

#### The Methodology Research Center

#### Director

Bruce D. Spencer, Northwestern University

#### Research Associates

R. Darrell Bock, University of Chicago Norman M. Bradburn, University of Chicago Roy D'Andrade, University of California at San Diego Hillel J. Einhorn, University of Chicago Martin R. Frankel, Baruch College, City University of New York Robin M. Hogarth, University of Chicago Theodore Karrison, University of Chicago Joshua Klayman, University of Chicago Paul Meier, University of Chicago Donald Rubin, Harvard University

Methodology Research Center, NORC

#### Research Analysts

Eiji Muraki Kenneth Rasinski Michele Zimowski

#### Research Assistants

Kave Brown Theodora Cohen Cherrie Gage Brian Gibbs Young Won Ha Lisa M. Harris Kevin Kiper Ionathan Koehler Deborah Mitchell Howard Mitzel June J. Pilcher Timothy M. Ryan Stephen Schilling Yeow Meng Thum Patricia West Michael Ziolkowski

#### Assistant to the Director Margarette Wafer

Administrative Assistant **Janet Hines** 

Student Administrative Clerk Daniel Cantor

#### Chapin Hall Center for Children

#### Director

Harold A. Richman, University of Chicago

Assistant Director Matthew Stagner

Faculty Associates Malcolm Bush, University of Chicago Bertram Cohler, University of Chicago James S. Coleman, University of Chicago John R. Conte, University of Chicago Mihaly Csikszentmihalyi, University of Chicago Laura Epstein, University of Chicago Kirsten Gronbjerg, Loyola University of Chicago

Roger Tourangeau,

Dennis P. Hogan, University of Chicago Arthur F. Kohrman, University of Chicago Kwang-sun Lee, University of Chicago Bennett Leventhal, University of Chicago Edward J. Mullen, University of Chicago Dolores G. Norton, University of Chicago Donnell M. Pappenfort, University of Chicago William L. Parish, University of Chicago Margaret K. Rosenheim, University of Chicago John R. Schuerman, University of Chicago Mark F. Testa, University of Chicago Froma Walsh. University of Chicago Earnestine Willis, University of Chicago William J. Wilson, University of Chicago Christopher Winship, Northwestern University

#### Senior Program Associates

Linda Bowen Joan Costello Robert Goerge Mary Ann Hartnett Peter Wolf Joan Wynn

#### Research Analysts

Thomas Hoffer Patricia Mosena

#### Research and Program Evaluation Assistants

Lawrence C. Basem Bruce Carruthers Terry Cooney Lingxin Hao Anita Isom Rebecca Krantz Julia Littell Clark Peters Andrew Richman Mark Tebeau

#### Center Administrator

Fione E. Dukes

#### Secretary/Receptionist

Nellie Presberry

#### Post-Doctoral Fellow

Ken Cmiel

Director of the Chapin Hall Forum Joan Costello

Student Administrative Clerk Donald J. Camp

#### The Center for the Study of Politics and Society

#### Codirectors

Norman H. Nie, University of Chicago Christopher H. Achen, University of Chicago

#### Research Associates

Henry E. Brady,
Harvard University
James A. Davis,
Harvard University
Andrew M. Greeley,
University of Arizona
John Padgett,
University of Chicago
Tom W. Smith,
Center for the Study of
Politics and Society, NORC

#### Research Assistants

Angela H. Brice Ruth N. Fujimoto Jane Y. Junn Pamela H. Narins Bruce L. Peterson Sandra L. Rick Brenda S. Rimkeit Lisa Simeone Michelle Ward

#### Administrative Assistant

Mary Kotecki

## Center for Computing and Information Systems

#### Director

Reginald P. Baker

Associate Director

Paul Buckley

#### Applications Programming

David I. Cook Gloria Rauens Thomas Semrau Carol Zmuda Ronnie Dorsey Tucker Landy Ruth Moayyad David Pieper Mila Stamm Doreen M. Turczyn

#### Data Entry

Maxine A. Hart,
Data Entry Manager
Linda Hall
Joann Lindsey
Belinda Manning
Irma O. Richardson
Pherry Thompson
Audrey Trimble
Sheila Walker
Betty S. Williams
Elizabeth Williams

#### Management & Administration

Virginia H. Bartot, Project Manager Christine Beard, Project Manager Martin Glusberg, Project Manager Linda Mason Peggy Mikros, Project Manager Theodore Mroczek Laura Reed, Project Manager Suzanne Turner, Project Manager Jacques van der Ven, Project Manager Carol Ward

#### MIS Support

Thelma Bahadur Barbara Browder Kevin Kuehnel Chris Lonn

#### Systems Development

Joseph Taylor,
Development Manager
Hyman Bern
Michael Cooke
Dave Cornelius
William Lee Lefes
James Shive
Daniel Walker

#### Survey Support

Valeri Cooke Donna Shive Sharon Baxter Gregory Wilson

#### User Support

Doug Baum,
Information Center Manager
Linda Ward,
Hardware Manager
Reginald Billingsly
Beverly L. Harris
Louis Monger
Joseph C. Terry
Reginald Wright

#### The Administrative Group

Associate Director for Admistration and Treasurer Thomas G. Gerst

Administrative Assistant to the Associate Director Sylvia J. Mandeville

#### Accounting Department

Aurora Punzalan, Controller Lula Baker, Chief Accountant Alicia H. Evans, Accounting Supervisor Arline Redmond-Fellows, Accounts Payable Supervisor Helen Smith, Staff Payroll Supervisor Deidre Jackson, Interviewer Payroll Supervisor Charles Allen Durant Bunch Paula L. Christian Barbara Spinks Dung Kiem Ta Vivian Wilson

#### Grants and Contracts Administration

Robert Lincoln Stanton, Manager Mary Westbrook, Administrator Margaret Harrison, Administrative Assistant

#### The Paul B. Sheatsley Library

Patrick Bova, Librarian Michael Worley, Associate Librarian

## Office Services Department

Brent Spyrka,

Chicago Office Manager

John Johnson,

Assistant Office Manager

Diane Geisler,

New York Office Manager

Kevin Okazaki,

Office Services Administrator

Kenneth Brown,

Mail Services Clerk/Driver

Donald J. Bradley,

Mail Services Clerk

Kenneth Wright,

Duplication/Binding Coordinator

Loretta Evans,

Receptionist

Florence Redmond,

Receptionist

Sonny Ridley,

Mail Services Clerk/Driver

#### Personnel Department

Stephen Goldston,

Personnel Director

Frances Harris,

Personnel Assistant, Employment

Richard Swedlund,

Personnel Assistant,

Records and Reports

Arlett Harris,

Employee Benefits Supervisor

Dawn M. Randle,

Administrative Assistant

#### Word Processing Department

Julie Antelman,

Manager

Cassandra Britton,

Supervisor

Jeffrey C. Cothran

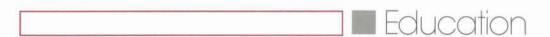
Vaudelita Nance

Robin Powell

Amelia Solorio

# NORC Projects: 1985-86

The following pages list all NORC projects that had significant activity between September 1, 1984, and December 31, 1986, organized by substantive area.



## The Education Longitudinal Studies Program: High School and Beyond and NLS-72

High School and Beyond and the National Longitudinal Study of the Class of 1972 are the cornerstones of a major longitudinal studies program, with wide policy applications. High School and Beyond is a survey of persons who were high school sophomores and seniors in 1980, the year of its inception; it has been fielded biennially since that year with a subsample of the original respondents. NLS-72 has been fielded six times since it first interviewed a sample of graduating seniors in 1972.

Both studies are designed to collect information about the educational, vocational, and personal development of youth, and to follow an age cohort across time. Each is large in scale: High School and Beyond had a baseyear sample of 58,000 students and is currently following a subsample of 27,200; the current NLS-72 sample consists of 14,500 young adults.

In 1986, NORC completed the Third Followup Survey of HS&B, and the Fifth Followup Survey of NLS-72. As part of this data collection effort, postsecondary school transcripts were collected for 11,700 members of HS&B's 1980 sophomore cohort, from 3,400 schools. A demographic component was added to the NLS-72 questionnaire in order to enable analysts to study the ways in which an individual's living arrangements and family structure interact with his or her flows of money and time resources. This five-year project is described in detail under "The Family," below.

Funded by the Center for Education Statistics of the U.S. Department of Education, with supplementary funding from the National Institute of Child Health and Human Development (Principal Investigators: Robert Michael and Robert Willis, NORC), the National Institute on Alcohol Abuse and Alcoholism (Principal Investigator: Howard Blane, of the Research Institute on Alcoholism), and the National Science Foundation (Principal Investigator: Barbara Heyns, New York University). The NORC Project Director is Barbara Campbell. (1978-present)

#### The National Education Longitudinal Study of 1988 (NELS:88)

Like the National Longitudinal Study of the High School Class of 1972 and High School and Beyond, NELS:88 is a longitudinal study designed to provide trend data about critical transitions experienced by young people as they develop, attend school, and embark on careers. NELS:88 will complement the earlier studies by extending the age range and topic areas covered. It will focus on two cohorts of students and their schools: a sample of students enrolled in the eighth grade in 1988, and a sample of first-year students enrolled in accredited postsecondary institutions in 1990. Followup surveys at two-year intervals are scheduled for both cohorts.

Information will also be sought from the parents of 26,200 eighth grade students participating in the NELS:88 baseyear survey. The study will address such issues as students' transitions to secondary school environments; parental influence on postsecondary school plans; the changing division of labor between home and school as educative agents; and parental attitudes in relation to school reform discussions of the 1980s.

The students will also complete a cognitive test battery consisting of a curriculumsensitive test that will use item overlap methods to measure cognitive growth between eighth and twelfth grades in four achievement areas: reading and vocabulary, mathematics, science, and social studies.

Funded by the Center for Education Statistics of the U.S. Department of Education. The NORC Project Director is Calvin Jones. Westat, Inc., and the Educational Testing Service are subcontractors to NORC. (1986-present)

## National Postsecondary Student Aid Survey

This study will attempt—for the first time in the history of education research—to establish a reliable, nationally representative database on postsecondary financial aid from the perspective of students and former students. NPSAS will complement other studies that explore the same issues from a more bureaucratic perspective. It will attempt to answer such questions as, Who gets financial aid, and on what grounds? What is the typical mix of grants, loans, and work in a financial aid package? How is financial aid used? How effective is it in expanding educational opportunity? And what are the effects of not receiving aid? Approximately 60,000 students enrolled in some form of post-secondary education will be surveyed by Westat, Inc. (the study's prime contractor). NORC's role will include the collection of high school transcripts from about 1,000 sample members known as "first-year normal progression" students—that is, those currently in their first year of postsecondary school who entered immediately after high school.

Funded by the Center for Education Statistics of the U.S. Department of Education. The Project Director is Calvin Jones. (1986-present)

#### California Assessment Program

This project, which administers the psychometric activities of item calibration and scale-score evaluation of the California Assessment Program, employs a unique system of school-level scoring. This system enables the Program to work with school-level summary data from its multiple-matrix sample of item responses, rather than with pupil-level data. This approach has been applied to third-grade, sixth-grade, and eighth-grade level data. Under a subcontract to the Educational Testing Service, the system is being extended to graded ratings of samples of written prose.

Conducted for the State of California Department of Education. The Project Directors are Darrell Bock and Robert Mislevy. (1979-present)

#### Educational Outcomes from the School As a Social Unit

A pioneering analysis of the ways in which the social organization of a high school—particularly its informal aspects—affects students' achievement, disciplinary behavior, rates of dropping out, and plans for postsecondary education. The data are from the first two waves of the High School and Beyond study.

Funded by the Spencer Foundation. The NORC Principal Investigator was James Coleman. (1984-1985)

#### Excellence in Schools

The purpose of the project is to provide an integrated database for examining trends in teacher supply, demand, and turnover as they affect, and are affected by, the conditions and characteristics of schools. It is expected that these surveys, when combined

with other data sources such as the Bureau of the Census, will give the Center for Education Statistics the capacity to monitor changes that affect the teaching force. The data will also enable analysts to understand the dynamics that generate and change important characteristics of the teacher supply, and will provide an early warning of structural changes that promise to have an impact on the teaching force. NORC is providing technical advice to the RAND Corporation on all aspects of this study, especially in the area of sampling.

Funded by the Center for Education Statistics of the U.S. Department of Education, and conducted under subcontract to the RAND Corporation. The Principal Investigator is Linda Darling-Hammond of the RAND Corporation. The NORC Project Director is Mary O'Brien. (1986-present)

# Evaluation of the Impact of Economics Textbooks on Junior High School Students

This two-part study began with the development of a valid and reliable scale—the Economic Values Inventory—to measure economic attitudes among junior high school youth. Then, using a quasi-experimental design, the scale was used to measure changes in economic attitudes over an instruction period among groups of students who had used an economics text produced by the study's sponsor, and among those who had had no economics instruction with the text. The text was found to have a statistically reliable impact on economic attitudes, independent of variations in student background characteristics and instructional methods.

Funded by the Foundation for Teaching Economics. The NORC Principal Investigator and Project Director was Mary O'Brien. (1984-1985)

## Study of MBA Students

Thirty-five hundred newly matriculated students in business and management programs in the U.S. were surveyed regarding their demographic characteristics; educational and family backgrounds; personal finances; past work experience; career plans and expectations; reasons for attending graduate school in management; factors affecting graduate school choice; and general values and attitudes. Data will be used to generate statistical reports for public dissemination.

Funded by the Graduate Management Admission Council. The GMAC Principal Investigator was Ross Stoltzenberg. The NORC Project Director was Woody Carter. (1985-1986)

## Expanding Opportunities for Minorities in Medicine

Minorities are seriously underrepresented in the practice of medicine, chiefly because they are seriously underrepresented in medical schools. The Robert Wood Johnson Foundation has devoted considerable attention and money to intervention programs to help minorities enter medical school. This study was designed to help provide empirical data on the incidence of such programs and on minority applicants' experiences with them.

A sample of minority students were surveyed to gather information on their strategies for applying to medical school, their participation in intervention programs, and other variables expected to be related to their success in being admitted. Transcript data was collected on each student. A followup survey was conducted to find out whether the students had been accepted in medical school, their enrollment choices, and the alternative plans of those not accepted. Data analysis and report preparation were conducted by the Educational Testing Service, the study's prime contractor.

Funded by the Robert Wood Johnson Foundation, and conducted under subcontract to the Educational Testing Service. The Principal Investigator was Joan Baratz of ETS. The NORC Project Director was Brad Edwards. (1984-85)



## The National Longitudinal Survey of Labor Force Behavior/Youth Cohort

This is a study of the labor force behavior of a sample of 12,000 youth, including oversamples of blacks, Hispanics, and the economically disadvantaged. NLS respondents were first interviewed in 1979 when they were 14 to 21 years old, and have been interviewed annually since then, with an average response rate of 94 percent. The study also collected the respondents' transcripts from their high schools. The interview covers educational and employment history and includes some attitudinal measures.

In 1987, NORC will conduct the ninth annual round of data collection for this study, with the original sample of respondents, who will then be 22 to 29 years old.

In 1986, the biological children of all the mothers in the sample—approximately 5,300 children—were also surveyed, and extensive data was collected on all children over 8 months old. (See "The Family," below, for a fuller description of the NLS Child Supplement.)

Since the study's inception, NORC has worked as subcontractor to the Center for Human Resource Research (CHRR) at Ohio State University.

Funded by the U.S. Department of Labor, with supplementary funding from the National Institute of Child Health and Human Development, the National Institute on Alcohol Abuse and Alcoholism, and the Defense Manpower Data Center, an agency of the U.S. Department of Defense. The Principal Investigator is Kenneth Wolpin of CHRR. The NORC Project Director is Woody Carter. (1977-present)

## Male-Female Differences in Job Mobility

There are two common, and opposing, explanations for the persistent wage gap between men and women in the United States. One explanation is that women expect to drop out of the labor force when they have children, and therefore invest less than men in their own human capital (e.g., on-the-job training, job-specific education), and are therefore paid less. The alternative explanation is that employers deny women access to jobs that would require employer investment in training, on the mistaken assumption that female staff will drop out of the labor force before such training can pay off. This study, part of a broader program of research into the relationship between job turnover and optimal investment in job training, used data from the Panel Study of Income Dynamics to analyze and evaluate these two rival hypotheses. Research on home production was also conducted under this grant.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigator was Reuben Gronau. (1983-1985)

## Life Cycle Fertility and Female Labor Force Experience

The objective of this research is to improve our understanding of the dynamic relationship between fertility and female labor force participation over the life cycle. A three-stage project is being carried out that involves the development of theoretical and econometric models of fertility and of labor force participation decisions, along with an empirical analysis of these models.

The theoretical models characterize optimal decision rules for both fertility and labor force choices, at each stage of the lifecycle, given uncertainty about future income and conception. The econometric models explicitly parameterize the theoretical structure. The empirical analysis of these models uses data from the Panel Study of Income Dynamics to test hypotheses derived from the theory, and examines the impact of demo-

graphic and background characteristics of women upon their conception and labor force participation decisions over the life cycle.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigators are Joseph Hotz and Robert Miller. (1984-1990)

## Air Force Organizational Impact Assessment

The U.S. House Armed Services Committee asked the Air Force to determine its capability to utilize women, and then develop an accession methodology based on that capability. This study addressed these objectives by gathering data on the effects of women's participation in the Air Force's "work groups"—small groups of personnel who normally work together on a day-to-day basis. The questions focused on actual work group conditions for each respondent, and on how the presence of women affected the group's morale, stability, and productivity, rather than on the larger social issue of women's participation in the military.

Funded by the U.S. Air Force. The Principal Investigator was Matthew Black of Systems Research and Application. The NORC Project Director was Mary O'Brien. (1984-1985)

# Empirical and Theoretical Investigations of the Housing and Labor Markets in the U.S.

This project addresses several problems in applied economics. It includes a time-series study of investments in single-family houses in the United States. It will also include an empirical study of entry dynamics in professional labor markets, and the completion of a book on the spatial approach to labor markets. Further work will deal with implicit contracts, specialization, the division of labor, and the organization of production.

Funded by the National Science Foundation. The NORC Principal Investigator is Sherwin Rosen. (1983-present)

## Structural Dynamic Models

This project formulated and estimated dynamic models of labor supply, unemployment, job turnover, occupational mobility, and wage growth. Hypotheses about labor market dynamics were derived from labor market theory, represented in tractable econometric models, and tested by estimating the models. Flexible models were developed that could be used to estimate and test among competing theoretical specifications. Previous work was extended by developing structural equation models for the analysis of duration data.

Structural models of multistate labor force dynamics and job turnover and occupational mobility were estimated using longitudinal data. A class of identification problems that arise in the analysis of discrete longitudinal data was studied, and the sensitivity of estimates of conventional models to ad hoc specifications of the distribution of unobservables was analyzed.

Funded by the National Science Foundation. The NORC Principal Investigator was James Heckman. (1981-1985)

#### Earnings, Data Evaluation, and Economic Duration Analysis

This grant has three major research topics. The first is the formulation and estimation of structural models of labor earnings that test for, and incorporate, self-selection and comparative advantage in the labor market. The goal of this part of the research is to specify an earnings function with clearly interpretable economic parameters in which demand and supply play an explicit, identifiable role.

The second topic is an evaluation of the benefits of longitudinal data for the estimation of well-specified models of market earnings. A major goal of this part of the research is to assess the optimal length of longitudinal studies.

A third topic is the formulation and estimation of structural econometric models, in order to modify and extend standard statistical models for the analysis of duration data to account for the data and behavioral models used by economists.

Funded by the National Science Foundation. The NORC Principal Investigator is James Heckman. (1985-present)

## Topics in Labor Economics and Econometrics

This grant involves two distinct projects. The objective of the first is to develop a framework for formulating aggregate empirical specifications of labor supply that explicitly recognize that part of the population does not work. The second research project has as its objective the development of an approach for testing hypotheses that the distribution of a random variable conditional on a set of variables is a member of a parametric family of distributions.

Funded by the National Science Foundation. The NORC Principal Investigator is Thomas MaCurdy. (1985-present)

## Studies of Military Enlistment and Training

Using data from the National Longitudinal Survey of Labor Force Behavior/Youth Cohort (described above), scholars in NORC's Economics Research Center analyzed the military enlistment decisions of male youth, focusing on the ways in which enlistment competes with other possibilities when young men make choices about their lives after high school. The data analysis was able to take account of the differences among the youths' individual abilities, because the dataset included their scores on the Armed Services Vocational Aptitude Battery (ASVAB), which had been administered to the NLS respondents as part of an earlier NORC study.

Funded by the U.S. Department of Labor. The NORC Principal Investigators were Christopher Winship, Robert Mare, Robert Topel, and Charles Bidwell. (1983-1985)

## Study of the Longterm Impact of Military Experience on Low-Aptitude Youth: Project 100,000

This study is a "natural experiment" comparing education, career, earnings, and other life outcomes of low-aptitude veterans with those of comparable low-aptitude civilians, thereby determining the effect of military experience upon people of initially limited abilities. Original data collection will be carried out with two veteran samples: "Project 100,000" veterans (a low-aptitude group deliberately admitted into the military in the 1960s), and veterans inadvertently admitted when the military entrance exam was misnormed in the 1970s. Findings from these samples will be compared with data already collected from civilian low-aptitude respondents in longitudinal studies conducted by the Census Bureau in 1966 and the Department of Labor and NORC in 1979.

Funded by the U.S. Navy and conducted under subcontract to the Human Relations Research Organization (HumRRO). The Principal Investigator is Barbara Means of HumRRO. The NORC Project Director is Mary O'Brien. (1985-present)

### Job Training Partnership Act Evaluation

This project will measure the effectiveness of the federal Job Training Partnership Act, successor to the now-defunct Comprehensive Employment and Training Act (CETA). The JTPA enabling legislation mandates that the U.S. Department of Labor periodically evaluate the effectiveness of JTPA programs, but past evaluations of federal job training programs have used quasi-experimental methods that did not yield reliable results. The JTPA Evaluation strategy is to provide reliable data by conducting a classical, randomized experiment over a five-year period in up to twenty sites, with approximately 30,000 persons randomly assigned to treatment or control groups. A sample of approximately 7,500 persons who are eligible for JTPA but have not applied to participate in any of its programs will also be selected and studied to determine who participates and who chooses not to.

NORC is conducting the main survey of treatment and control groups for this project, as subcontractor to Abt Associates. In addition, scholars in NORC's Economics Research Center are studying the process of selection into training programs. They are also investigating whether it is possible to successfully evaluate such programs using non-experimental methodologies.

Funded by the U.S. Department of Labor. The NORC Principal Investigators are James Heckman and Joseph Hotz, and the Abt Principal Investigator is Howard Bloom. The NORC Project Director is Eve Weinberg, and the Abt Project Director is Larry Orr. (1986-present)

### Racial Wages in South Carolina, 1910-1978

This purpose of this project was to collect and study the time series of wage rates and employment by race and sex for industrial workers in the South Carolina labor market, for the period 1910-1978. The data were used to study three explanations of black economic progress in the state: improved education, affirmative action programs, and tight labor markets. To address the research issues, models of factor demand for race groups and models of labor supply for specific industries were developed. Other questions were also addressed, including the impact of minimum wage laws on employment and wage rates of specific race-sex groups.

The Principal Investigator is continuing this work as part of a current NSF-funded project, "Earnings, Data Evaluation, and Economic Duration Analysis."

Funded by the National Science Foundation. The NORC Principal Investigator was James Heckman. (1980-1985)



### Economic Analysis of the Family and Demographic Change

This grant provides funding to support a research program in family and demographic change within NORC's Economics Research Center. The objective of the program is to better understand the demographic behavior of families in the postwar era, and to investigate the relationship between this behavior and the changes taking place in the American family. Tools of economic science are used to study the interplay among demographic phenomena (including fertility, migration, marriage, and divorce), economic and social behavior (including schooling, employment, bequests), and the functions of the family as a social institution.

Funded as a P-30 Center by the National Institute of Child Health and Human Development. The NORC Principal Investigators are Robert Michael and Robert Willis. (1984-present)

## Family Economics of Developing Countries

This grant supported the work of the Economics Research Center on population issues, especially policy issues relevant to developing countries, such as the behavior of migrants in Thailand and the relationship between labor force behavior and fertility in Japan. A particular focus of the project was the training of foreign students.

Funded by the William and Flora Hewlett Foundation. The NORC Principal Investigator was Robert Michael. (1983-1985)

## Altruism, Fertility, and Population Growth

This project will integrate several diverse strands of the existing economic and demographic literature. Building on previous research by the Principal Investigator and others in several related areas—including parental altruism toward children, the interaction between quality and quantity of children, and the effect of parents' time and other factors on the cost of children—the project will examine a number of interactions. It will investigate the ways in which interest rates and population growth interact, will consider how fertility decisions and the growth of a social security system influence each other, and will study the ways in which the degree of altruism among family members influences the amount of intergenerational transfers and the support of elderly persons.

Funded by the National Institute of Child Health and Human Development, and the National Science Foundation. The NORC Principal Investigator is Gary Becker; the NORC Co-Principal Investigator for the NICHD component is Kevin Murphy. (1986-present)

# The Influence of Fertility, Marriage, and Family Endowments on the Distribution of Income and Equality of Opportunity

This research analyzed an equilibrium theory of the distribution of income. In addition, inequality of opportunity and intergenerational mobility were studied. At an empirical level, datasets were used containing information on three-generation families, in order to test some of the predictions of the theory that, holding constant the characteristics of parents, the income, wealth, and other characteristics of grandparents and other family members will enter as significant predictors of the success of children.

Funded by the National Science Foundation. The NORC Principal Investigator was Gary Becker. (1982-1985)

## Empirical Analysis of the Timing and Spacing of Births

The goal of this project is to analyze two longitudinal datasets—one from the United States and another from Sweden—using integrated multistate models that control for time-varying variables and unobserved heterogeneity to systematically investigate the socioeconomic determinants of the timing and spacing of births over the lifecycle. The research will also attempt to assess the influence that changes in Swedish social programs have had on fertility behavior over the last thirty years.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigators are James Heckman and Burton Singer. (1984-present)

## Analysis of Family Events Histories of the Class of 1972

An investigation of the ways in which an individual's living arrangements and family structure interact with his or her flows of money and time resources. This five-year project supplements the 1986 data collection on the "NLS-72" (described above in the section

on education) by adding a demographic component to the questionnaire. The supplement obtains life histories on the cohabitation, marriage, and fertility events of a sample of 14,000 high school seniors of 1972. The study also focuses on the flow of money from parents to the NLS-72 respondent for financing college, and the flow of money and time from the respondent to his or her children—with particular attention to subjects who are divorced and noncustodial.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigators are Robert Michael and Robert Willis. (1984-present)

## Implications of Marital Dissolution

Designed to examine the determinants of post-divorce settlements, this project will address such questions as the following: How is the division affected by the income and other characteristics of the husband and wife? How important are within-marriage investments (e.g., the wife works to support the husband in school) on the post-divorce outcome? What is the role of the courts in determining this division? How important are children in affecting the total transfer of resources? These questions and related ones will be addressed through an empirical analysis of data from a special supplement to the Fifth Followup of the National Longitudinal Survey of the Class of 1972.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigator is Robert Willis. His Co-Principal Investigators are Robert Michael and Yoram Weiss of NORC. (1986-present)

## Survey of Absent Parents

A study to determine patterns of, and reasons for, payment and nonpayment of child support. Personal interviews were conducted with a sample of pairs of parents, now divorced or separated, one of whom had custody of the pair's children. The sample was obtained through a three-stage probability sampling process: states were the first-stage sampling units, counties within the selected states were the second-stage units, and the third-stage units were pairs of parents selected from county divorce records and Office of Child Support Enforcement files. This study had several special challenges, including locating hard-to-find respondents, obtaining the cooperation of reluctant ones, and asking highly sensitive questions.

Funded by the U.S. Department of Health and Human Services. The Principal Investigator was Freya Sonenstein of The Urban Institute. The NORC Project Director was Mary O'Brien. (1984-1986)

## The Children's Policy Research Project

These grants were made to further the work of the Children's Policy Research Project, whose objective is to reassess the relations of children to the state. Initial empirical and analytic work focused on Illinois. The first phase of the project involved a series of empirical studies; the second phase involved a series of analytic studies.

Funded by the John D. and Catherine T. MacArthur Foundation, Bowman Lingle Trust, Chicago Community Trust, Bush Foundation, Joyce Foundation, and Pittway Corporation Charitable Foundation. The NORC Principal Investigators were Harold Richman and Mark Testa: (1984-1985)

#### The State of the Child

This is an ongoing project that resulted in the publication of the 1985 State of the Child report. An update of the first (1980) State of the Child report, this publication chronicled the increasingly bleak outlook for Illinois children, especially those living in poverty. It found, for example, that 72 percent of black children and 47 percent of white children who live in households headed by a single female parent live below the poverty line. The publication of this report occasioned considerable attention in the media, in-

cluding demands for improvements in Illinois social services, medical care delivery, job training programs, and education.

Funded by the Lloyd A. Fry Foundation and Chapin Hall for Children. The NORC Principal Investigators were Harold Richman and Mark Testa. (1984-1986)

## Improving the Analysis and Utilization of Child Welfare Information Systems

This is a series of projects that began with a cooperative venture between NORC's Social Policy Research Center—later Chapin Hall—and the Illinois Department of Children and Family Services (DCFS). In 1984, NORC staff restructured the DCFS database on children in foster care so that local DCFS field offices would have access to the data for case planning and analysis at the local level. The final product was a database containing information on approximately 78,000 children who had received services from DCFS, with the system programmed so that caseworkers could obtain the file on a given child's "career" in the foster care system with a few keystrokes.

In 1985, a technical assistance project provided management training to assist DCFS in implementing this new system. In 1986-87, a followup to the 1984 project will provide three additional services to DCFS. These include writing a training curriculum for DCFS to use in monitoring the progress of caseworkers using the database; upgrading the system's communications hardware and software; and documenting the creation of the database and the software used for analysis.

The initial project was funded by the Edna McConnell Clark Foundation. The 1985 technical assistance project was funded by the Illinois Department of Children and Family Services, as is the 1986-87 followup. The NORC Principal Investigator for the original project was Mark Testa, who is also Principal Investigator for the followup; the Principal Investigator for the technical assistance project was Lynn Vogel of the University of Chicago School of Social Service Administration. The NORC Project Directors for the followup are Mary Ann Hartnett and Robert Goerge. (1984-present)

#### Childcare Needs in Illinois

The Chapin Hall Center for Children prepared a report on childcare needs in Illinois for use as a background paper for the special Governor's Task Force on Childcare. The report was completed using existing information on needs, costs, funding patterns, issues that influence day care demand, and examples of recent initiatives in this area. The five sections of the report are: estimates of need, social factors that shape daycare demand, economics of daycare, strategies for meeting daycare needs, and the need for better data.

Funded by the Illinois Department of Children and Family Services. The NORC Project Director is Joan Costello. (1986-present)

## Adolescent Parent Outreach Survey and Adolescent Family Life Survey

A program of longitudinal research on the experience of single mothers living in poverty. The research focus was on the education, employment, health, and childcare needs of this population; a number of the survey questions were designed to identify social support policies that will help promote self-sufficiency and economic independence.

The first study, the Adolescent Parent Outreach Survey, was conducted jointly with the Illinois Department of Public Aid. The plan of the study called for exclusive use of state Department of Public Aid caseworkers as interviewers in the first round of data collection. NORC personnel developed the survey instrument in collaboration with IDPA, and provided training to interviewers and administrative staff in the management of a large-scale survey. Interviews were conducted with a sample of 1,900 mothers aged 18 and under and receiving AFDC payments.

The second study (conducted by NORC staff) collected data from a probability subsample of 500 of the respondents from the Adolescent Parent Outreach Survey, all of whom were living in Cook County.

Funded by the Illinois Department of Public Aid and the Office of Adolescent Pregnancy Programs of the U.S. Public Health Service. The NORC Principal Investigators were Harold Richman and Mark Testa. The NORC Project Directors were Pat Mosena and Linda Bowen. (1981-1985)

## Patterns of Contraceptive Behavior Among Adolescent Mothers on Welfare

This project will analyze data on contraceptive use by young Cook County welfare mothers from the third (1984) wave of the Adolescent Parent Outreach Survey.

Topics of interest include the respondent's knowledge of contraceptive practices, preferred contraceptive method, subjective perception of the likelihood of pregnancy, and opinions on the disadvantages of pregnancy and birth control. Differential patterns of knowledge and use of contraceptives will be determined for black, white, and Hispanic adolescent mothers.

Funded by the Illinois Department of Public Health. The NORC Project Director is Pat Mosena. (1986-present)

## Young Parent Program Evaluation

A randomized experiment designed to evaluate the Illinois Department of Public Aid's Young Parent Program, which IDPA developed to help teenage mothers receiving Aid to Families With Dependent Children (AFDC) payments find jobs and/or return to school. The program attempted to identify and solve the problems that interfered with each individual girl's achieving her goals, on a case-by-case basis. One of the objectives of the study was to compare the women who chose to participate in the program with those who did not. It was found that the program appealed to its target population—women with less welfare history, more negative attitudes toward welfare, and those who had identified problems with their school attendance were more likely to participate than women who did not see themselves as having problems.

Funded by the Illinois Department of Public Aid. The NORC Principal Investigator was John Schuerman. The NORC Project Director was Fred Wulczyn. (1984-1985)

## Teenage Pregnancy and Public Policy: An Exploratory Study of the Relationship Between Teenage Pregnancy and Aid to Families With Dependent Children

This study analyzed data from the second wave of the Adolescent Parent Outreach Survey to explore the welfare attitudes of 493 adolescent mothers. Ethnic and racial comparisons were made, as well as comparisons between those who had been exposed to welfare prior to the birth of their first child and those who had not. Findings indicate that educational and employment aspirations among teenage mothers are high and that welfare attitudes are generally negative, although it appears that previous exposure to welfare may be associated with difficulty in leaving the public welfare rolls.

Funded by the Joyce Foundation. The NORC Principal Investigator was Harold Richman. The NORC Project Director was Linda Bowen. (1986)

### Support Networks and Mother-Headed Families

This study uses a combination of conventional survey data and previously unanalyzed data collected by NORC's Survey Operations Group for use in locating respondents. These information sources are pooled to study aspects of family background that may moderate the effects of single motherhood on young women, and explore whether kin and informal networks can provide support that substitutes for intact family life.

The data source for both kinds of information is the National Longitudinal Survey of Labor Force Behavior/Youth Cohort, a large panel study in which annual interviews are conducted with 11,000 young men and women, including oversamples of black and

economically disadvantaged youth. The NLS survey itself provides information on whom the respondents feel they can turn to for support. The NLS "locating files" contain information—including relationship to the respondent—about persons who are believed to be close enough to the respondents that they will always know where to find them. The project will analyze data from both sources to compare support networks among respondents.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigators are William Parish and Dennis Hogan. (1986-present)

## **NLS Child Supplement**

In 1986, a special supplement to the National Longitudinal Survey of Labor Force Behavior/Youth Cohort (described above, under "The Labor Force") collected data from the biological children of all the mothers in the NLS sample. There are approximately 5,300 such children, ranging in age from a few months to sixteen years. Data collection, which took place in the mother's homes, included cognitive tests and measures of self-perception, all of which were administered by specially trained lay interviewers. The children were also weighed and measured.

The Child Supplement has provided an unusually rich dataset on child development. The NLS database already contains eight years' worth of detailed data on the children's mothers—including their educational background, work experience, socioeconomic status, health (including health during pregnancy), history of drug use, values, and attitudes. Not only can Child Supplement data be analyzed in light of this data on the mothers, but the large sample size also enables analysts to control for economic and social factors.

Funded principally by the National Institute of Child Health and Human Development. A number of private foundations also contributed to the planning, collecting, and dissemination of this dataset. They include the Carnegie Corporation of New York, the Ford Foundation, the William T. Grant Foundation, the William and Flora Hewlett Foundation, the Rockefeller Foundation, and the Alfred P. Sloan Foundation. The Principal Investigators were Robert Michael of NORC and Kenneth Wolpin of the Center for Human Resource Research at Ohio State University. The NORC Project Director was Susan Sprachman. (1985-1986)



## Physicians' Practice Costs and Income Survey, and PPCIS Followup

These projects update and expand on earlier research concerning what it costs physicians to run their practices. The PPCIS collected data on physician participation in public programs (Medicare and Medicaid), and on the ways in which changes in reimbursement policies under these programs may have affected delivery of health care by physicians. It also collected data to enable the Health Care Financing Administration to refine and update the Medicare Economic Index, which sets Medicare reimbursement rates for physicians.

The PPCIS, conducted from 1983 to 1985, was a two-phase project. Phase 1 included an evaluation of physicians' practice cost surveys done in the 1970s; Phase 2 was a national survey of 5,000 physicians using the modified design based on the results of that evaluation.

In 1986, NORC began a followup to the PPCIS that will interview 4,100 physicians from that study's sample. Three major research questions have been identified for followup based on the PPCIS results. These include: Have respondents signed, or do they plan to sign, the Medicare Physician Participation Agreement? Have malpractice costs indeed risen dramatically since the PPCIS was fielded, as is believed to be the case? And

are physicians asking Medicaid to pay too much in reimbursement for certain medical procedures, as some Federal policymakers have alleged?

Funded by the Health Care Financing Administration and Office of the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services. The NORC Project Director for the first study was Susan Sprachman; for the followup, Eve Weinberg. (1983-present)

## National Ambulatory Medical Care Survey

NAMCS was the first national survey ever to collect data on patient care from a sample of office-based physicians. NORC conducted the survey annually from 1973 to 1981; after a three-year hiatus, data collection was conducted again in 1985. Physicians participating in the 1985 NAMCS filled out logs on which they listed every patient seen during the survey week, and a "patient record form" for each patient or for a sample of patients, depending on their patient load. The patient record form reported the details of the patient visit; it covered fifteen areas, including patients' background characteristics, reason for visit, and diagnosis and treatment.

Funded by the National Center for Health Statistics. The NORC Project Director was Ann-Sofi Rodén. (1973-1981; 1985-1986)

## The National Medical Expenditure Survey

This study will build on—and expand—the base provided by earlier large-scale studies of national household expenditures, providing policymakers with new data to reflect the sweeping changes that have taken place in the financing and delivery of health care in the recent past. NMES has many interrelated components, including a household survey of 14,000 families, two surveys of medical care providers, a survey of the household respondents' health insurance providers, and a sample of persons in institutions. Groups of special policy relevance will be given particular attention; these include blacks, Hispanics, Native Americans and Alaskan Natives, the poor, the elderly, and the functionally impaired. NORC is conducting its portion of the study as subcontractor to Westat, Inc.

Because of the magnitude and importance of NMES, a feasibility study was conducted to explore various methodological issues before the main survey was fielded. The NMES Feasibility Study is described under "Methods," below.

Funded by National Center for Health Services Research and the Health Care Financing Administration. The NORC Project Director is Mary Cay Burich. (1986-present)

## Survey of Oncologists

Conducted in two waves during 1985 and 1986, this study sought to determine whether state-of-the-art procedures for treating and managing cancer are being successfully disseminated to the community-based physicians who provide most of the cancer care in the United States. The Community Clinical Oncology Program (CCOP), funded by the National Cancer Institute, is a program designed to disseminate such information; the Survey of Oncologists analyzed CCOP's effectiveness by collecting data on levels of participation in the program, on changes in patient care at the local level as a result of participation in CCOP, and on the factors that contribute to the success of local CCOP programs that are doing well. NORC conducted this two-wave evaluation under contract with the Fred Hutchinson Cancer Research Center of Seattle, Washington.

Funded by the National Cancer Institute. The Principal Investigator was Polly Feigl of the Fred Hutchinson Cancer Research Center of Seattle, Washington. The NORC Project Director was Shirley Knight. (1984-1986)

#### Age-Related Issues in Patient Management

This project, which interviewed physicians in four cities by telephone, defined the issues to be discussed at a conference on geriatric practice at Mt. Sinai Hospital in New

York. The survey focused on physicians' management of aged patients, and the special problems and needs presented by this group.

Funded by Mt. Sinai Medical Center. The Principal Investigators were Dr. Charlotte Muller and Dr. Mariann Fahs of Mt. Sinai. The NORC Project Director was Shirley Knight. (1985-1986)

## A Study of Age-Related Differences in Cancer Management

Using computer-assisted telephone interviewing (CATI), NORC interviewed approximately 1,115 white women over the age of 45 who had experienced either breast or rectal cancer. In addition, 1,000 relatives or friends identified by patients as involved in their primary treatment were interviewed. The aim of the study is to evaluate how age and socioeconomic factors affected the treatment experience, and to evaluate the factors that differentiate older patients from younger ones with regard to cancer management procedures known to reduce morbidity and mortality among women.

Funded by the Memorial Sloan-Kettering Cancer Center. The client's Principal Investigator is Dr. Jon Kerner. The NORC Project Director is Shirley Knight. (1984-present)

#### Patients at Risk of Endocarditis

This study was designed to investigate what precautions are being taken by dentists to prevent endocarditis, a potentially fatal bacterial infection that can occur if there is gum damage during dental procedures. Computer assisted telephone interviews were conducted with a list sample of dentists engaged in general or prosthodontic practice.

Funded by the National Institute of Health and conducted under subcontract to the Albert Einstein College of Medicine. The Principal Investigator was Donald Sadowski, DDS, of the Albert Einstein College of Medicine. The NORC Project Director was Shirley Knight. (1982-85)

## Chicago Cardia Study

A study of the health and lifestyles of young adults in Chicago, who were interviewed on such topics as smoking, diet, and exercise, and then examined by medical personnel. The purpose of the research was to enhance understanding of the relationship between health and lifestyle among certain population subgroups (blacks, whites, men, women, persons of high and low socioeconomic status); to document changes in health over time and explain how lifestyles may relate to the development of heart disease in later life; and to suggest appropriate strategies for more effective prevention of disease before dangerous lifestyles become more established.

Funded by the National Heart, Lung, and Blood Institute and conducted under subcontract to Northwestern University. The Principal Investigator was Dr. Kaing Lui of Northwestern University. The NORC Project Director was Shirley Knight. (1984-1986)

#### Registry of Vietnam Era Veteran Twin Pairs

A study to develop a registry—that is, a sampling frame—of Vietnam Era (1965-1975) U.S. military veteran twin pairs. A mail survey was conducted with 10,000 twin pairs. Questions concerned nature of Vietnam Era combat experience, current health-related problems and health practices, experience of Post-Traumatic Stress Disorder (PTSD), marital and paternal history, and birth disorders among offspring; respondents were also asked to indicate whether they were identical or fraternal twins.

Funded by the Veterans Administration. The Principal Investigator was Dennis Robinette of the National Research Council of the National Academy of Sciences. The NORC Project Director was Mary O'Brien. (1984-1986)

#### United States Air Force Health Studies

The Air Force Health Studies were a research program designed to investigate the longterm health consequences of armed service in Southeast Asia during the Vietnam conflict. During the base year, NORC conducted health status interviews with some 8,000 veterans by telephone, scheduled medical examinations for 2,300 at the Scripps Medical Clinic in LaJolla, California, and conducted interviews with the spouses of 1,900 respondents.

NORC recruited the survey participants by telephone and scheduled their two-day medical examinations at the Scripps Clinic. While participants were at Scripps, they completed a two-hour questionnaire that focused on health issues, fertility, child health, marital and family history, smoking, drinking, exposure to toxic substances, leisure time activities, and residence history.

Funded by the U.S. Air Force and conducted under subcontract to Science Applications International Corporation. The Principal Investigators were Lt. Colonel William Wolfe, Joel Michalek, and Michael Peterson of the U.S. Air Force. The NORC Project Director was Woody Carter. (1985-1986)

## A Survey of Young Adults

This was the third phase of a longitudinal study of New York state high school students' use of drugs and alcohol. Designed to collect information on drug use and social adjustment during adolescence and young adulthood, the study first interviewed respondents in 1971, when they were in the tenth and eleventh grades; interviews were conducted again in 1981 and 1984. The last questionnaire, adapted from the previous instruments, consisted primarily of questions on whether or not, and how often, the respondents used cigarettes, alcohol, and marijuana. A subsection dealt with the use of hard drugs such as cocaine, amphetamines, and barbiturates.

New to the last study was a set of questions designed to determine the social characteristics of social networks that support drug abuse, focusing on the respondent's relationship with family, spouse, and friends in the use of drugs. Another add-on to the survey was a self-administered questionnaire left with the respondent's spouse or partner to complete and mail in to the Principal Investigator.

Funded by the National Institute on Drug Abuse. The Principal Investigator was Denise Kandel of Columbia University. The NORC Project Director was Brad Edwards. (1971; 1981; 1984-1985)

### **Smoking Among Hispanics**

In conjunction with the Cornell University Medical College, NORC evaluated the long-term effectiveness of the Life Skills Training program, which was designed to prevent the onset of smoking among a cohort of New York City Hispanic students. Thirty schools with Hispanic enrollment of 50 percent or more were assigned to either experimental or control groups; the experimental group were exposed to the LST intervention, and will be followed for four years to assess the program's effectiveness. In addition, telephone interviews will be conducted with 4,000 families to obtain data on smoking and drinking behavior.

Funded by the Memorial Sloan-Kettering Cancer Center. The Principal Investigator is Dr. G. Botnin of the Cornell University Medical College. The NORC Project Director is Shirley Knight. (1985-1987)

## A Followup Survey of Problem Drinking Among Women

A followup to a 1981 survey of 917 women that collected data on alcohol consumption, drinking context, sexual behavior, and problems related to alcohol consumption or alcohol dependence among women. The followup survey interviewed a subsample of 364 women from the original survey in order to study drinking patterns and changes in them, and to supplement the earlier study's data on sexual behavior and depression.

Funded by the National Institutes of Health, and conducted under subcontract to the University of North Dakota. The Principal Investigators are Sharon and Richard Wilsnack of the University of North Dakota School of Medicine. The NORC Project Director is Eve Weinberg. (1986-present)

#### IDPA-Longterm Care

The Illinois Department of Public Aid longterm care project provided technical assistance in the evaluation and revision of a form used to assess service needs of residents in longterm care facilities. After a series of meetings and discussions with agency staff to identify problems with the use of the existing form and additional information needed, a new form was designed and submitted to IDPA.

Funded by the Illinois Department of Public Aid. The NORC Principal Investigator was Harold Richman. The NORC Project Director was Pat Mosena. (1985)



## General Social Survey

The General Social Survey is the data collection instrument of the National Data Program for the Social Sciences, which is both a data diffusion project and a program of social indicator research. The GSS is an annual social indicators survey of a national probability sample of 1,500 adults. In addition to a basic core of demographic questions, the GSS has a large number of attitudinal questions that are rotated in and out of the survey, and that preserve the original question wording from previous decades.

For the last several years, the GSS has incorporated topical modules designed to provide greater depth than is possible in the wide-ranging context of the GSS. In 1985, the topical module was devoted to social networks; in 1986, to the feminization of poverty.

From time to time the GSS also adds supplements sponsored by funders other than its prime sponsor, the National Science Foundation. In 1982, and again in 1984, the GSS added a supplemental survey of public attitudes toward the military to its basic questionnaire. This study has many implications for military policy; when results of the 1984 survey were published in 1985, the report received the personal attention of Secretary of Defense Casper Weinberger. Respondents were interviewed on such issues as confidence in the Armed Forces, attitudes toward the All-Volunteer Force, attitudes toward the draft and national service, reactions to women in the service, reactions to minorities in the service, civilian involvement in national defense, and military service as a moral obligation. The GSS Military Supplement was funded by The Ford Foundation; its Principal Investigator was James Davis and its NORC Project Director was Paul Sheatsley.

The GSS is also the American vehicle for the International Social Survey Program (ISSP). The ISSP is a consortium of social scientists from the United States, England, Australia, Germany, Ireland, and Italy that engages in cross-national, collaborative survey research. ISSP questions are jointly formulated by representatives of all participating countries and then added to existing surveys in each country; in the United States, these questions are added to the GSS.

Funded by the National Science Foundation with supplementary funding from Andrew M. Greeley. The Principal Investigators are James Davis of Harvard University and Tom Smith of NORC. (1972-present)

#### Study of Black Political Participation

This study, to be fielded in conjunction with the 1987 General Social Survey (GSS), will replicate a set of questions that were first asked in a pioneering study of black and white political participation in 1967. These questions will be embedded in the GSS questionnaire. The GSS will oversample blacks to obtain a total of about 500 completed interviews with blacks—or 350 more than the 150 interviews with blacks that the GSS

sample generally yields. A key finding of the 1967 study was a large difference between blacks and whites in level and type of political participation, which is also the focus of a substantial literature that spans sociology and political science. The current study will examine changes over time in level and type of black political participation; effects of group consciousness on political participation; and effects of organizational membership on the process of black politicization.

Funded by the National Science Foundation. The Principal Investigator is Lawrence Bobo of the University of Wisconsin at Madison. The NORC Project Director is Woody Carter. (1986-present)

#### Political Tolerance and Freedom in the U.S.

This study seeks a 45-minute reinterview of a subsample of 1,000 respondents in the 1987 General Social Survey (GSS), and all 350 respondents from the Study of Black Political Participation, to be conducted several months after the GSS field period. The questionnaire will explore the relationship between disliking a group and not tolerating political activities by its members. The study also aims to document levels of perceived political freedom in the United States through rigorous empirical indicators, to explore psychological sources of intolerance, and to discover the nature of the way in which democracies allocate political freedom.

Funded by the National Science Foundation. The Principal Investigator is James L. Gibson of the University of Houston. The NORC Project Director is Woody Carter. (1986-present)

## Urban Family Life Survey

This study is using a combination of traditional survey methods and descriptive anthropology to explore some aspects of poverty in Chicago. Focusing on four ethnic groups—blacks, whites, Mexicans, and Puerto Ricans—it will investigate the way each group's ethnographic characteristics interact with economic factors. For example, it will attempt to answer such questions as whether the current welfare system has varying effects on family structure depending on ethnicity.

Funded by the U.S. Department of Health and Human Services, the Carnegie Corporation of New York, and the Ford, Lloyd A. Fry, Joyce, and Rockefeller Foundations. The Principal Investigator is William Julius Wilson of the University of Chicago. The NORC Project Director is Barbara Campbell. (1986-present)

## Utilization of Social Services by Chicago's Welfare Population

This study examined the problem of the lack of connection between Chicago welfare recipients and the system of private social service agencies in the city. A questionnaire was administered to 737 Chicagoans who recently received Aid to Families with Dependent Children or General Assistance, in an attempt to identify respondents' problem areas and explore where they had sought help. The sample was chosen randomly from all Chicago families receiving such assistance at any time during that year—a sampling procedure that insured that those interviewed would be representative of the welfare poor in Chicago, since sampling only from current welfare rolls would have resulted in an oversampling of families who remain on the rolls for long periods. Respondents were interviewed in their homes by NORC interviewers.

Funded by the Amoco Foundation, Inc., Arthur Andersen and Company, Borg-Warner Foundation, Inc., Chicago Community Trust, Chicago Tribune Foundation, Commonwealth Edison Company, Continental Bank, Dart and Kraft Foundation, First National Bank of Chicago, Lloyd A. Fry Foundation, Illinois Bell Telephone Company, Jewel Companies, Inc., Robert R. McCormick Charitable Trust, Prince Charitable Trust, Sears Roebuck and Company, United Way of Chicago, Walter E. Heller International Corporation, and Woods Charitable Fund, Inc. The NORC Principal Investigators are Matt Stagner and Harold Richman. (1985-1986)

### **Exploratory Study of GA Recipients**

The effects of the economic recession and the loss of manufacturing jobs in the Chicago area contributed to a substantial increase in the number of persons receiving General

Assistance between July 1980 and May 1983—from 68,000 to 121,000. This study was a series of indepth interviews, conducted in 1984-85, with 400 newly approved GA recipients. It found that a surprising number of the respondents were well-educated and had good work records. Forty-six percent of those surveyed had graduated from high school or completed some college; an equal percentage came to the rolls directly from a full-time job or after exhausting unemployment compensation. In response to the survey's findings, Illinois Governor James Thompson inaugurated "Project Chance," a program with the stated goal of providing viable jobs within three years to current GA recipients.

Funded by the Illinois Department of Public Aid, and by the Amoco Foundation, Inc., Arthur Andersen and Company, Borg-Warner Foundation, Inc., Chicago Community Trust, Chicago Tribune Foundation, Commonwealth Edison Company, Continental Bank, Dart and Kraft Foundation, First National Bank of Chicago, Lloyd A. Fry Foundation, Illinois Bell Telephone Company, Jewel Companies, Inc., Robert R. McCormick Charitable Trust, Prince Charitable Trust, Sears Roebuck and Company, United Way of Chicago, Walter E. Heller International Corporation, and Woods Charitable Fund, Inc. The NORC Principal Investigators were Harold Richman and Matt Stagner. (1984-86)

## Study of the Homeless of Chicago-Phases I and II

This study was designed to develop a scientifically credible, operationally feasible procedure for systematically counting and studying the homeless in Chicago, and to develop a "snapshot" of this elusive population. Personal interviews were conducted with homeless persons both in shelters and in the street. Two waves of interviewing were conducted—the first in the early fall of 1985, the second in the dead of winter in 1986. Census blocks were stratified according to their likelihood of having homeless persons on them, with the Chicago Police Department acting as an expert informant in the stratification process. Interviewing teams, consisting of two interviewers and two armed offduty police escorts, "swept" their sampled blocks between midnight and six a.m.shining lights into parked cars, moving through abandoned buildings, and screening everyone they encountered, awake or sleeping, to determine if the person was homeless. Those who were homeless were interviewed, providing basic demographic and personal history data about themselves. Respondents were paid \$5 for their participation. Funded by the Pew Memorial Trust, the Robert Wood Johnson Foundation, the Illinois Department of Public Aid, and the Illinois Department of Mental Health. The Principal Investigator was Peter Rossi, of the Social and Demographic Research Institute at the University of Massachusetts. The NORC Project Director was Mary O'Brien. (1985-1986)

## In-Place Adjustments by Elderly Homeowners

The purpose of this project was to better understand the adjustments people make in their housing arrangements in response to their own aging. Single-family homeowners in seven cities—who had already been interviewed for another NORC housing study in 1979 and 1981—provided data on the repairs and improvements they had made to their homes and property. Data was collected in personal interviews, with followup interviews conducted several months later by telephone.

Funded by the U.S. Department of Health and Human Services. The Principal Investigator was Raymond Struyk of The Urban Institute. The NORC Project Director was Brad Edwards. (1982-1985)

### Interviewer Training Assistance Project Concerning Housing of the Elderly

This was a small (400 cases) study of retired members of the Amalgamated Clothing Workers' Union who chose to occupy union housing. The study attempted to identify demographic and health factors associated with those who selected the union housing in comparison with those who chose to forego occupancy there. NORC provided interviewer training.

Funded by the National Institute on Aging. The NORC Project Director was Sara Loevy. The Principal Investigator was Gerald Glandon of Rush University Department of Health Systems Management. (1985-1986)

### Soviet Interview Project

This project seeks to fill specific gaps in Western knowledge about the Soviet social, economic, and political structure. In 1983, NORC interviewed 3,000 recent Soviet emigrants to the United States about their views of contemporary Soviet society and their immigration experiences. The interview—conducted in Russian and averaging  $3\frac{1}{2}$  hours—focused mainly on the "last normal period" of life before applying for permission to emigrate. In 1986, a shorter version of the earlier questionnaire was used to interview a new group of about 600 Soviet citizens who entered the U.S. between the spring of 1982 and the spring of 1985; interviews were also conducted with 1,114 male Soviet emigrants on experiences in and views about the military.

Funded by the National Council for Soviet and East European Research. The Principal Investigator is James Millar of the University of Illinois. The NORC Project Director is Miriam Clarke. (1981-present)



#### Cognitive Processes in Survey Responding

Opinion researchers have shown repeatedly that apparently minor changes in question wording and question order can have large effects on responses to opinion items. This project consists of several studies to illuminate these item wording and context effects. The research program is based on the idea that survey responses to opinion items reflect the underlying cognitive structures that organize views about an issue. For a substantial number of people, several conflicting structures are available for a given issue. How a respondent construes an attitude issue and answers questions about it depends, in part, on which structure the opinion item evokes. This research attempts to identify characteristics of issues, respondents, and items that affect the magnitude of item wording and context effects.

Funded by the National Science Foundation. The NORC Principal Investigators are Roger Tourangeau, Norman Bradburn, and Roy D'Andrade. (1984-1986)

## Cognitive Aspects of Questionnaire Design

This was part of a larger study of the cognitive aspects of survey methodology funded by the National Science Foundation and initiated by the National Center for Health Statistics. The questionnaire design inquiry focused on the dental supplement to NCHS's National Health Interview Survey. It was conducted in three phases.

The first phase was designed to identify some of the processes that respondents use in formulating answers, to analyze the problems respondents experience, and to develop hypotheses about how questions might be improved. It employed laboratory testing and such cognitive techniques as protocol analysis, comprehension probes, and experimental manipulation of questions.

The second phase of the work tested several approaches for improving comprehension of some of the items and stimulating more accurate recall of dental visits during the one-year reference period. The third phase built on the results of phase two in order to develop an experimental version of the supplement, which was then fielded along with another version that had been developed using the standard procedures for NHIS supplements.

Funded by the National Center for Health Statistics Research. The NORC Principal Investigator was Roger Tourangeau. (1984-1986)

## A Feasibility Study for the National Medical Expenditure Survey

This study examined the feasibility of various procedural options for the NMES (described above under "Health Care"), the third in a series of large-scale (14,000 house-holds), longitudinal, household-based studies of medical care needs, access, and utilization in the United States. NORC's responsibilities as subcontractor to Westat on this project included the design, execution, and analysis of the Medical Provider Component of the study, which collected data from medical providers named by respondents in the household survey. The purpose of the MPC was to determine the most cost-effective method of data collection from different kinds of medical care providers, and to investigate the usefulness of giving the providers a list of the dates of patient visits in order to assist them in providing the necessary patient data.

Funded by the National Center for Health Statistics Research. The NORC Project Director is Janet Gans. (1984-present)

# Evaluation of the National Medical Care Utilization and Expenditure Survey

This was an evaluation of the National Medical Care Utilization and Expenditure Survey (NMCUES), conducted between 1979 and 1981. NMCUES was designed to provide detailed information on Americans' health status, patterns of health care utilization, charges for services received, and methods of payment. The NMCUES Evaluation project assessed the effects of the following: data collection mode, data collection frequency, and the use of a computerized summary containing previously reported medical care visits and expenditures. The NMCUES questionnaire was evaluated. An imputation analysis for missing data was performed, and an improved coding scheme for medical conditions was developed. NORC conducted its portion of this study as subcontractor to Westat, Inc.

Funded by the National Center for Health Statistics Research. The NORC Principal Investigator was Martin Frankel. The NORC Project Director was Janet Gans. (1984-86)

## Feasibility Trial of a Duplex Design for Eighth Grade Mathematics

This study is part of a larger program of feasibility studies for the development of a comprehensive, locally unobtrusive educational testing network. NORC is working jointly with the Program Evaluation and Assessment Section of the Illinois Office of Education to conduct a field trial of a new type of educational testing instrument, to be carried out in a sample of public junior high schools. The instrument, called a "duplex design," combines features of conventional pupil achievement testing with those of item sampling designs for assessment of curricular objectives. Theoretical considerations suggest that a single test instrument constructed by duplex design will provide information for pupil guidance and certification, and for curriculum formation and evaluation, at about the same cost as conventional achievement testing.

Funded by the University of California at Los Angeles. The NORC Principal Investigator is Darrell Bock. The NORC Project Director is Eve Weinberg. (1985-1986)

# Factor Analysis of the Armed Services Vocational Aptitude Battery (ASVAB) Computer Aptitude Test (CAT) Item Pool

This project will apply marginal maximum likelihood item factor analysis—a statistical test of the critical assumption of unidimensionality in computer adaptive testing—to the Armed Services Vocational Aptitude Battery, the entrance exam for the military. This method allows for the incorporation of a term in the model that accounts for the effects of guessing on multiple choice items, and provides the possibility of computing Bayes estimates of uncorrelated factor scores. In principle, this provides for the possibility of implementing multi-dimensional computerized adaptive testing.

Funded by the Office of Naval Research, U.S. Department of the Navy. The NORC Principal Investigator is Darrell Bock. (1985-present)

## Maintenance of Aptitude Scales in a Computerized Testing Environment

NORC is one of four organizations participating in a project to develop a statistical system for maintaining the item pool for computer-assisted administration of the Armed Services Vocational Aptitude Battery. Based on item response theory, the NORC contribution to this system is a procedure for estimating parameters of an item response model that allows for "item parameter drift" over the period of time that a given item is in the pool. The procedure also allows items to be added or removed from the pool without the interpretation of the test scores being affected. The system has been tested by application to a large set of simulated item responses representing the expected performance of future recruits taking the ASVAB at the time of their enlistment into the Armed Services.

Funded by the Educational Testing Service. The NORC Principal Investigator is Darrell Bock. (1983-1986)

## Multiple Imputations for Occupation Codes

This project entails the development, implementation, and evaluation of multiple imputation procedures potentially having very general applicability to a variety of problems of incomplete data—nonresponse in surveys, datasets whose classifications have changed over time, and statistical matching of files. A particular focus of the project is the U.S. Census's classification codes for occupations and industries. The project developed procedures for imputing classification codes from the 1980 Census into 1970 Census data, which in turn will facilitate the analysis of industrial and occupational change.

Funded by the National Science Foundation. The NORC Principal Investigator is Donald Rubin. (1983-1987)

## Building and Testing Dynamic Models of Fluctuations and Asset Prices

This research represents a continuation of earlier work on 1) the development of time series econometric methods for estimation and testing; 2) the development of stochastic dynamic models that are tractable for economic analysis; and 3) the empirical implementation of econometric methods to study particular dynamic equilibrium models. Empirical applications of the research include the term structure of bond prices, the role of money in determining risk premia, and the impact of cyclical fluctuations on the behavior of asset prices.

Funded by the National Science Foundation. The NORC Principal Investigator is Lars Peter Hansen. (1985-present)

## Applied Research in Dynamic Economics

This project will use related methodologies to examine several topics of substantive importance. These include the structure of prices and sales activity in the housing market, the relation between the division of labor and economic growth, and the "cattle cycle." (The number of head of cattle in the United States rises and falls according to an extraordinarily regular and periodic cycle, and there are similar and clearly related fluctuations in the price of cattle. This phenomenon is unparalleled in the history of time series data and has never been fully understood.)

Funded by the National Science Foundation. The NORC Principal Investigator is Sherwin Rosen. (1986-present)

## Economic Applications in Longitudinal Data Analysis

This project entails planning for a two-day conference to be hosted during the summer of 1987 by the Economics Research Center. The conference will bring together researchers who will address state-of-the-art economic methods for analyzing longitudinal data. In past years ERC has held a week-long workshop that was essentially a high-level, lecture-format course on new statistical methods for the analysis of longitudinal data

in the social sciences. The 1987 conference will attempt to facilitate and encourage the application and critical assessment of methods that were taught at these workshops, by enabling practitioners of those methods to present their work and discuss it.

Funded by the Alfred P. Sloan Foundation. The NORC Project Director is James Heckman. (1986-present)

## Population Dynamics: Modeling Longitudinal Microdata

This study investigated the extension of duration analysis models to account for unobserved differences in populations of interest in longitudinal studies. In addition, the project dealt with the analysis and extension of statistical procedures used to correct for nonrandomness in sample data.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigators were James Heckman and Burton Singer. (1982-1986)

## Economic and Statistical Models of Lifecycle Fertility

While this methodological project is expected to have many applications, its substantive focus is confined to rural France in the eighteenth and nineteenth centuries. The study will investigate fertility patterns before and after the French Revolution. Detailed population data from France's Institut National D'Études Demographiques show a dramatic change in family size and structure after the Revolution: between 1789 and 1820, the average number of children per family dropped from two to one. The project will investigate the cause of this phenomenon.

Funded by the National Institute of Child Health and Human Development. The NORC Principal Investigator is Thomas Mroz. (1986-present)

## Theory of Diagnostic Inference

The second year of a three-year research program to develop a qualitative model that will refine and extend the theory of diagnostic inference. Although diagnosis is the least researched and least understood aspect of inference, it is probably the most important—diagnosis underlies the generation of hypotheses to make sense of data; it also provides the models on which predictions are based. The project is an investigation of two key questions that underlie diagnosis: What are the psychological bases of causal judgment? And how do people evaluate evidence?

The design employs a series of tests to refine the investigators' original model of how causal judgments between two variables are made. The more complex phenomena to be studied include judgments of causal strength in chain-like structures, issues of multiple causation, and the evaluation of scenarios. Experiments are also being developed to study the evaluation of evidence in ambiguous situations, the link between ambiguity and risk, and the combining of evidence from multiple sources.

Funded by the Office of Naval Research. The NORC Principal Investigator is Robin Hogarth; the late Hillel Einhorn was Co-Principal Investigator. (1983-present)

## Processes of Learning in Probabilistic Environments

Planning a budget, deciding when to plant crops, improving worker productivity—all these endeavors require us to develop an understanding of complex probabilistic relationships. Surprisingly, many researchers conclude that it is virtually impossible for people to learn from experience in probabilistic environments. How, then, can people manage in a probabilistic world? This research examined the characteristics that help or hinder the learning of probabilistic relationships, and the cognitive processes through which such learning can be accomplished.

Funded by the National Science Foundation. The NORC Principal Investigator is Joshua Klayman. (1983-1985)

# NORC Publications: 1985-1986

- This list of selected NORC publications includes both work by NORC researchers and work based on NORC data published between the start of fiscal 1985 and the end of calendar 1986.
- Abowd, John M. and Zellner, Arnold: "Estimating gross labor-force flows." Journal of Business and Economic Statistics, v. 3, no. 3, July, 1985, pp. 254-283.
- Alwin, Duane F. and Krosnick, Jon A.: "The measurement of values in surveys: A comparison of ratings and rankings." *Public Opinion Quarterly*, v. 40, no. 4, Winter, 1985, pp. 535-552.
- Baker, Reginald P.; Beard, Christine; and Taylor, Joseph: "The NORC Integrated Survey System." Proceedings of the 1985 Public Health Conference on Records and Statistics. Hyattsville, Maryland, U.S. National Center for Health Statistics, December, 1985, pp. 139-144.
- Becker, Gary S.: "Human capital, effort, and the sexual division of labor." *Journal of Labor Economics*, v. 3, no. 1, Part 2, January, 1985, pp. S33-S58.
- Becker, Gary S. and Barro, Robert J.: "A reformulation of the economic theory of fertility." ERC/NORC Discussion Paper no. 85-11. October, 1985. 47p.
- Becker, Gary S. and Tomes, Nigel: "Human capital and the rise and fall of families." *Journal of Labor Economics*, v.4, no.3, Part 2, July, 1986, pp.S1-S39 (see also Willis: "Comment on Becker and Tomes").
- Bock, R. Darrell; Gibbons, Robert; and Muraki, Eiji: Full-information item factor analysis. Final report to the U. S. Office of Naval Research. MRC Report 85-1 (revised). July, 1986. ii, 55p.
- Bock, R. Darrell and Mislevy, Robert J.: Comprehensive educational assessment for the states: The duplex design. August, 1986. 45p.
- Bock, R. Darrell and Moore, Elsie G. J.: Advantage and disadvantage: A profile of American youth. Hillsdale, N. J., Erlbaum, 1986. x, 230p.
- Bowen, Linda; Johnson, Earl S.; Wulczyn, Fred; Stagner, Matthew; and Richman, Harold: Teenage pregnancy and public policy: An exploratory study of the relationship between adolescent preg-

- nancy and Aid to Families with Dependent Children. A report to the Joyce Foundation, 1985. 66p.
- Bradburn, Norman M.: "Discussion: Telephone survey methodology." IN Health survey research methods: Proceedings of the fourth conference, Washington, DC, May, 1982. Washington, U.S. National Center for Health Services Research, September, 1984, pp. 146-148.
- Bradburn, Norman M.: "Federal statistics: Emerging lifestyles and living arrangements." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 13p.
- Bradburn, Norman M. and Danis, Catania: "Potential contributions of cognitive research to survey questionnaire design." IN Thomas B. Jabine and others, eds.: Cognitive aspects of survey methodology: Building a bridge between disciplines. Washington, National Academy Press, 1984, pp. 101-129.
- Burdett, Kenneth; Kiefer, Nicholas M.; Mortensen, Dale T.; and Neumann, George R.: "Earnings, unemployment, and the allocation of time over time." Review of Economic Studies, v. 51, no. 4, (Whole number 167), October, 1984, pp. 559-578.
- Burich, Mary C.; Cromwell, Jerry; and Spencer, Bruce: Physicians' Practice Costs and Incomes Survey: Final pretest report. September, 1984. ii, 114p.
- Burrelli, David F.: Evaluation of the program to recruit college bound youth into the army. Chicago, ERC/NORC, August, 1985. xxi, 148p.
- Burt, Ronald S.: "Network items and the General Social Survey." *Social Networks*, v. 6, Winter, 1984, pp. 293-339.
- Burt, Ronald S.: "A note on missing network data in the General Social Survey." GSS Technical Report no. 64. Fall, 1985, 14p.

- Burt, Ronald S.: "A note on sociometric order in the General Social Survey network data." Social Networks, v.8, no.2, June, 1986, pp. 149-174.
- Burt, Ronald S.: "A note on the General Social Survey's ersatz network density item." GSS Technical Report no. 63. Fall, 1985. 13p.
- Burt, Ronald S.: "Strangers, friends, and happiness." GSS Technical Report no. 72. Summer, 1986. 22p.
- Burt, Ronald S. and Guilarte, Miguel G.: "A note on scaling the General Social Survey network item response categories." *Social Networks*, v.8, no.4, December, 1986, pp. 387-96.
- Cafferty, Pastora San Juan and McCready, William C., eds.: Hispanics in the United States: A new social agenda. New Brunswick, N. J., Transaction Books, 1985. vi, 257p.
- Chetty, V. K. and Heckman, James J.: "A dynamic model of aggregate output supply, factor demand and entry and exit for a competitive industry with heterogeneous plants." ERC/NORC Discussion Paper no. 86-10. Revised November, 1985. 34p.
- Cox, Brenda G. and Cohen, Steven B.: Methodological issues for health care surveys. New York, Marcel Dekker, 1985. Chapter 4, "Data collection organization effects," pp. 95-118, discusses NORC and Research Triangle Institute participation in NMCES and NMCUES.
- Davis, James A.: "British and American attitudes: Similarities and contrasts." IN Roger Jowell and others, eds.: British social attitudes: The 1986 report. Hants, England, Gower Publishing Company, 1986, pp. 89-114.
- Davis, James A.: "Happiness in the 1984 GSS." Paper presented at the meetings of the American Sociological Association, San Antonio, TX, August, 1984.
- Davis, James A.: "New money, an old man/lady and 'Two's company': Subjective welfare in the NORC General Social Surveys, 1972-1982." Social Indicators Research, v. 15, no. 4, December, 1984, pp. 319-350.

- Davis, James A.: "Sam Stouffer as gypsy: Cohort analysis and forecasting in the GSS." Talk given at the meetings of the American Association for Public Opinion Research, McAfee, New Jersey, May, 1985. 6p.
- Davis, James A.: "What the GSS tells us about social changes, 1972-1985." GSS Technical Report no. 71. July, 1986. 79p.
- Davis, James A.: "What we have learned about change and continuity in the GSS decade 1972-1983." Paper presented at the meetings of the American Sociological Association, San Antonio, TX, August, 1984. 10p.
- Davis, James A. and Sheatsley, Paul B.: Americans view the military: A 1984 update. December, 1985. (NORC Report no. 132) xiv, 136p.
- Davis, James A. and Smith, Tom W.: General Social Surveys, 1972-1985: Cumulative codebook. (National Data Program for the Social Sciences Series no. 6.) Chicago, NORC, July, 1985. vi, 554p.
- Davis, James A. and Smith, Tom W.: General Social Surveys, 1972-1986: Cumulative codebook. (National Data Program for the Social Sciences Series no. 7.) Chicago, NORC, July, 1986. vi, 620p.
- Eichenbaum, Martin S. and Peled, Dan: "Capital accumulation and annuities in an adverse selection economy." ERC/NORC Discussion Paper no. 85-21. Revised December, 1985. 32p.
- Einhorn, Hillel J.: "Decision making under ambiguity." April, 1986. 49p. (Journal of Business, forthcoming.)
- Einhorn, Hillel J.: "A model of the conjunction fallacy," June, 1985. 23p.
- Einhorn, Hillel J. and Hogarth, Robin M.: "Ambiguity and uncertainity in probabilistic inference." *Psychological Review*, v. 92, no. 4, October, 1985, pp. 433-461.
- Einhorn, Hillel J. and Hogarth, Robin M.: "A contrast/surprise model for updating beliefs." April, 1985. 60p.
- Einhorn, Hillel J. and Hogarth, Robin M.: "Judging probable cause." *Psychological Bulletin*, v. 99, no. 1., January, 1986, pp. 3-19.

- Falaris, Evangelos M. and Peters, H. Elizabeth: "The effect of the demographic cycle on schooling and entry wages." ERC/NORC Discussion Paper no. 85-6, March, 1985. ii, 39p.
- Fernandez, Roberto M. and Nielsen, François: "Bilingualism and Hispanic scholastic achievement: Some baseline results." Social Science Research, v. 15, no. 1, March, 1986, pp. 43-70.
- Fligstein, Neil and Fernandez, Roberto M.: "Educational transitions of whites and Mexican-Americans." IN George L. Borgas and Marta Tienda, eds.: Hispanics in the U.S. economy. New York, Academic Press, 1985, pp. 161-192.
- Fligstein, Neil and Fernandez, Roberto M: "Hispanics and education," IN Pastora San Juan Cafferty and William C. McCready, eds.: Hispanics in the United States: A new social agenda. New Brunswick, New Jersey, Transaction Books, 1985, pp. 113-146.
- Frankel, Martin R.: "A probability sample of the homeless of Chicago." Paper presented at the meetings of the American Statistical Association, Chicago, August, 1986, 4p.
- Frankel, Martin R.: "Sample design, selection, and performance." Chapter 4 of Matthew Black: Organizational assessment study. Arlington, Virginia, Systems Research and Applications Corporation, February, 1985, pp. 4-1—4-18.
- Gans, Janet E.: Evaluation of data collection forms and procedures used on the medical provider component of the National Medical Expenditure Survey Feasibility study. November, 1986. 193p.
- Gans, Janet E.: Evaluation of the National Medical Care Utilization and Expenditure Survey: Data collection and coding for medical conditions. August, 1986. v, 64p.
- Gillroy, John M. and Shapiro, Robert Y.: "The polls: Environmental protection." Public Opinion Quarterly v. 50, no. 2, Summer, 1986, pp. 270-279.

- Gittens, Joan: "The children of the state: Child labor reform and education in Illinois, 1818-1980s." Chapin Hall Center for Children Discussion Paper 001. December, 1985. 157p.
- Gittens, Joan: "The children of the state: Delinquent children in Illinois, 1818-1980s." Chapin Hall Center for Children Discussion Paper 002. August, 1986. 97p.
- Gittens, Joan: "The children of the state: Dependent children in Illinois, 1818-1980s." Chapin Hall Center for Children Discussion Paper 003. February, 1986. 153p.
- Greeley, Andrew M.: American Catholics since the Council: An unauthorized report. Chicago, Thomas More Press, 1985. 235p.
- **Greeley, Andrew M.:** "Catholic high schools: An effective inner-city ministry." *National Catholic Reporter*, v. 20, no. 38, August 31, 1984.
- Greeley, Andrew M.: "Religious imagery as a predictor variable in the General Social Survey." Paper presented at the meetings of the Society for the Scientific Study of Religion, Chicago, October, 1984. 40p.
- **Gronau, Reuben:** "Home production—a survey." ERC/NORC Discussion Paper no. 85-2. December, 1984. Preliminary draft. 60p.
- Gronau, Reuben: "Sex-related differentials and women's interrupted labor careers—the chicken and the egg." Revised March, 1985. 55p.
- Hansen, Lars Peter: "Asymptotic covariance matrix bounds for instrumental variables estimators of linear time series models." ERC/NORC Discussion Paper no. 86-4. May, 1986. 38p.
- Hansen, Lars Peter: "A central limit result for instrumental variables estimators of linear time series models." ERC/Discussion Paper no. 86-6. May 1986. 25p.

- Hansen, Lars Peter: "Econometric modeling of asset pricing under rational expectations." ERC/NORC Discussion Paper no. 85-14. August, 1985. 53p.
- Hansen, Lars Peter: "Using Martingale difference approximations to obtain covariance matrix bounds for generalized methods of moments estimators." ERC/NORC Discussion Papers no. 85-16. November, 1985. 85p.
- Hansen, Lars Peter and Richard, Scott F.:

  "The role of conditioning information in deducing testable restrictions implied by dynamic asset pricing models." ERC/NORC Discussion Paper no. 85-13. October, 1985. 68p.
- **Heckman, James J.:** "The x² Goodness of Fit statistic for models with parameters estimated from microdata." *Econometrica*, v. 52, no. 6, November, 1984, pp. 1543-1547.
- Heckman, James J. and Hotz, V. Joseph: "An investigation of the labor market earnings of Panamanian males: Evaluating the sources of inequality." Journal of Human Resources, v.21, no. 4, Fall, 1986, pp. 507-542.
- Heckman, James J.; Hotz, V. Joseph; and Walker, James R.: "New evidence on the timing and spacing of births." *American Economic Review*, v. 75, no. 2, May, 1985, pp. 179-184.
- "Alternative methods for solving the problem of selection bias in evaluating the impact of treatments on outcomes." IN Howard Wainer, ed.; Drawing inferences from self-selected samples. New York, Springer-Verlag, 1986, pp. 63-107. Includes "Comments by John W. Tukey", pp. 108-110, and "Postscript: A rejoinder to Tukey," pp. 111-113.
- Heckman, James J. and Robb, Richard: "Using longitudinal data to estimate age, period and cohort effects in earnings equations." IN William M. Mason and Stephen E. Feinberg, eds.: Cohort analysis in social research: Beyond the identification problem. New York, Springer-Verlag, 1985, pp. 137-150.

- Heckman, James J. and Scheinkman, Jose: "The importance of bundling in a Gorman-Lancaster model of earnings." ERC/NORC Discussion Paper no. 86-16. Final draft, May, 1986. 25p. (Review of Economic Studies, forthcoming.)
- Heckman, James J. and Sedlacek, Guilherme: "Heterogeneity, aggregation, and market wage functions: An empirical model of self-selection in the labor market." Journal of Political Economy, v. 93, no. 6, December, 1985, pp. 1077-1125.
- Heckman, James J. and Singer, Burton, eds.: Longitudinal analysis of labor market behavior. New York, Cambridge University Press, 1985. xv, 410p.
- High School and Beyond: Annotated bibliography of studies using data from High School and Beyond. Washington, U.S. Center for Statistics, Department of Education, December, 1985. 284p.
- High School and Beyond: Field test report: National Longitudinal Study of the High School Class of 1972 fifth follow-up survey and High School and Beyond third followup survey. By Calvin Jones, Penny A. Sebring, Melody Singleton, Harry Gallaher, and Cassandra Dobrin. July 15, 1985. 132p.
- High School and Beyond: 1980 senior cohort second follow-up (1984) data file user's manual. By Calvin Jones and others. April, 1986. 747p.
- High School and Beyond: 1980 sophomore cohort second follow-up (1984) data file users manual. By Calvin Jones and others. April, 1986. 911p.
- High School and Beyond: Second followup (1984) sample design report. By Calvin Jones and Bruce Spencer. August, 1985. iv, 115p.
- High School and Beyond: Second followup (1984) technical report. By Calvin Jones, Penny Sebring, Bruce Spencer, and Diane Bagües. August, 1985. iii, 126p.

- Hoffer, Thomas; Greeley, Andrew M.; and Coleman, James S.: "Achievement growth in public and Catholic schools." Sociology of Education, v. 58, no. 2, April, 1985, pp. 74-97.
- Hoffer, Thomas and Wolf, James: "Changes in the structure of high school achievement: 1972-1980." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 44p.
- Hogarth, Robin M.: "Generalization in decision research: The role of formal models." IEEE Transactions on Systems, Man, and Cybernetics, v. SMC-16, no. 3, May/June, 1986, pp. 439-449.
- Hogarth, Robin M.: "Why bother with experiments?" May, 1985. 42p.
- Hogarth, Robin M. and Kunreuther, Howard: "Risk, ambiguity, and insurance." August, 1986. 52p.
- Hogarth, Robin M. and Reder, Melvin W.: "Editors' comments: Perspectives from economics and psychology." Journal of Business, v. 59, no. 4, pt. 2, October, 1986, pp. S185-S207.
- Horstmann, Ignatius; MacDonald, Glenn M.; and Slivinski, Alan: "Patents as information transfer mechanisms: To patent or (maybe) not to patent." Journal of Political Economy, v. 93, no. 5, October, 1985, pp. 837-858.
- Hotz, V. Joseph and Avery, Robert B.: "Estimating systems of nonlinear equations with limited dependent variables." ERC/NORC Discussion Paper no. 85-19. November, 1985. 38p.
- Hotz, V. Joseph; Kydland, Finn E.; and Sedlacek, Guilherme L.: "Intertemporal preferences and labor supply." ERC/NORC Discussion Paper no. 85-18. December, 1985. 54p.
- Hotz, V. Joseph and Miller, Robert A.: "The economics of family planning." ERC/NORC Discussion Paper no. 85-5. Revised February, 1985. 69p.
- Hotz, V. Joseph and Miller, Robert A.:

- "An empirical analysis of life cycle fertility and female labor supply." ERC/NORC Discussion Paper no. 86-15. Revised November, 1986. 51p. (Econometrica, forthcoming)
- Ingels, Steven J.: Evaluation of the National Medical Utilization and Expenditure Survey: Item nonresponse in the NMCUES questionnaire. Final draft report to the U.S. National Center for Health Statistics. November, 1985. v,92p.
- Ingels, Steven J. and O'Brien, Mary Utne: "Classroom learning and attitude change: The impact of a ninth grade economics course on social beliefs and values." Paper presented at the Midwestern Educational Research Association meetings, Chicago, October, 1986. 39p.
- Ingels, Steven J. and O'Brien, Mary Utne: An evaluation of the impact on attitudes and values of the text, Our Economy: How it works. Report to the Foundation for Teaching Economics. June, 1985. vi, 48p. plus appendixes (40p.)
- Ingels, Steven J. and O'Brien, Mary Utne: "Factors associated with changes in youths' attitudes toward economic issues." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 28p. plus appendixes (26p.)
- Jones, Calvin; Baker, Reginald; and Borchers, Robert: High School and Beyond Postsecondary Education Transcript Study data file user's manual. (CS 86-223) Washington, U.S. Department of Education, Center for Statistics, September, 1986. 444p.
- Jones, Calvin; Baker, Reginald; and Borchers, Robert: National Longitudinal Study of the High School Class of 1972 Postsecondary Education Transcript Study data file user's manual. (CS 86-221) Washington, U.S. Department of Education, Center for Statistics, August, 1986. 535p.
- Jones, Calvin; Burich, Mary Cay; and Campbell, Barbara: "Motivating interviewers and respondents in longitudinal research designs." Paper presented

- at the International Symposium on Panel Studies, American Statistical Association, Washington, November, 1986. 24p.
- Jones, Calvin C.; Campbell, Susan; and Sebring, Penny A.: Four years after high school: A capsule description of 1980 seniors. Washington, U.S. Center for Statistics, Department of Education, August, 1986. vii, 55p.
- Jones, Calvin; Sebring, Penny A.; and Campbell, Susan: Four years after high school: A capsule description of 1980 sophomores. Washington, U.S. Center for Statistics, Department of Education, 1986. v, 86p.
- King, Benjamin F.: "Surveys combining probability and quota methods of sampling." *Journal of the American Statistical Association*, v. 80, no. 392, December, 1985, pp. 890-896.
- Klayman, Joshua: "Cue discovery in probabilistic environments: Uncertainty and experimentation." November, 1986. 56p. (Journal of Experimental Psychology: Learning, Memory, and Cognition, forthcoming)
- Klayman, Joshua and Ha, Young-Won: "Hypothesis testing in rule discovery: Strategy and structure." Paper presented at the Tenth Research Conference on Subjective Probability, Utility, and Decision Making, Helsinki, Finland, August, 1985. 18p.
- Krosnick, Jon A. and Alwin, Duane F.: "An evaluation of a cognitive theory of response order effects in survey measurement." GSS Technical Report no. 73. February, 1986. 29p.
- Lazear, Edward P. and Michael, Robert T.: "Estimating the personal distribution of income with adjustment for within-family variation." *Journal of Labor Economics*, v. 4, no. 3, Part 2, July, 1986, pp.S216-S239.
- Lessler, Judith T.; Bercini, Deborah; and Tourangeau, Roger: "Results of the cognitive/laboratory studies of the 1986 NHIS dental care supplement." Proceedings of the Section on Survey Research, 1985, American Statistical Association, pp. 460-463.

- Lessler, Judith; Tourangeau, Roger; and Salter, William: Cognitive aspects of questionnaire design: Final project report. Chicago, NORC, May, 1986. 54p.
- Lessler, Judith; Tourangeau, Roger; and Salter, William: "Control of errors in surveys: Questionnaire design in the Cognitive Research Laboratory." Paper presented at the 1986 Conference on Survey Research Methods in Agriculture, June, 1986. 35p.
- Loft, John D.; Sheatsley, Paul B.; and Frankel, Martin R.: Comparison report on the Hospital Ambulatory Medical Care Evaluation Study. April, 1985. v, 246p.
- Loft, John D.; Sheatsley, Paul B.; and Frankel, Martin R.: Methodological report on the Hospital Ambulatory Medical Care Evaluation Study. October, 1984. x, 251p.
- McCready, William C.: "Culture and religion." IN Pastora San Juan Cafferty and William C. McCready, eds.: Hispanics in the United States: A new social agenda. New Brunswick, New Jersey, Transaction Books, 1985, pp. 49-61.
- MacDonald, Glenn M.: "Job mobility and the information content of equilibrium wages: Part I: A finite state space economy." ERC/NORC Discussion Paper no. 86-8. June, 1986. 44p.
- MacDonald, Glenn M.: "Job mobility in market equilibrium." ERC/NORC Discussion Paper no. 86-13. August, 1986. 46p.
- MacDonald, Glenn M. and Markusen, James R.: "A rehabilitation of absolute advantage." *Journal of Political Economy*, v. 93, no. 2, April, 1985, pp. 277-297.
- MacDonald, Glenn M. and Robinson, Chris: "Cautionary tails about arbitrary deletion of observations; or, throwing the variance out with the bathwater." *Journal of Labor Economics*, v. 3, no. 2, April, 1985, pp. 124-152.
- MacDonald, Glenn M. and Robinson, Chris: "An operational theory of monopoly union-competitive firm interaction: New predictions, a simple framework for interpreting existing empirical data, and proposed tests." ERC/NORC Discussion Paper no. 85-10. April, 1985. 44p.

- McElroy, Marjorie B.: "The joint determination of household membership and market work: The case of young men." *Journal of Labor Economics*, v. 3, no. 3, July, 1985, pp. 293-316.
- MaCurdy, Thomas E.: "A framework for relating microeconomic and macroeconomic evidence on intertemporal substitution." ERC/NORC Discussion Paper no. 85-22. August, 1985. 47p.
- MaCurdy, Thomas E.: "A guide to applying time series models to panel data." ERC/NORC Discussion Paper no. 86-12. Revised December, 1985. 57p.
- Mare, Robert D. and Winship, Christopher: The enlistment, employment, and schooling decisions of young men: A discrete choice, discrete time Markov model. November, 1986. 109p.
- Mare, Robert D. and Winship, Christopher: "School enrollment, military enlistment, and the transition to work: Implications for the age pattern of employment." IN James J. Heckman and Burton Singer, eds.: Longitudinal analysis of labor market behavior. New York, Cambridge University Press, 1985, pp. 364-399.
- Marsden, Peter V.: "The discussion networks of the American population." GSS Technical Report no. 59. October, 1985. 25p.
- Michael, Robert T.: "Consequences of the rise in female labor force participation rates: Questions and probes." *Journal of Labor Economics*, v. 3, no. 1, Part 2, January, 1985, pp. S117-S146.
- Michael, Robert T. and Tuma, Nancy Brandon: "Entry into marriage and parenthood by young men and women: The influence of family background." *Demography*, v. 22, no. 4, November, 1985, pp. 515-544.
- Miller, Robert A.: Innovation and reputation." ERC/NORC Discussion Paper no. 86-2. April, 1986. 36p.
- Mislevy, Robert J.: "Estimation of latent group effects." *Journal of the American Statistical Association*, v. 80, no. 392, December, 1985, pp. 993-997.
- Mooney, Geraldine; Sudman, Seymour;

- and Schoua, Alisu: Survey of Absent Parents design report. July, 1985, 63p.
- Mosena, Pat W.: Adolescent Parent Outreach Follow-Up Survey. Chapin Hall Center for Children Discussion Paper no. 010. 1985. iv, 119p.
- Mroz, Thomas A.: "The sensitivity of an empirical model of married women's hours of work to economic and statistical assumptions." ERC/NORC Discussion Paper no. 84-8. October, 1984. 65p.
- Muraki, Eiji: "Full-information factor analysis for polychotomous item response." Paper presented at the meetings of the American Educational Research Association, Chicago, 1984. 19p.
- Muraki, Eiji: "Implementing fullinformation factor analysis: Testfact program." Paper presented at the meetings of the Psychometrica Society, 1984. 22p.
- Muraki, Eiji: "Marginal maximum likelihood estimation for three-parameter polychotomous item response models: Application of an EM algorithm." Paper presented at the meetings of the American Educational Research Association, New Orleans, 1984, 69p.
- Muraki, Eiji and Engelhard, George, Jr.:
  "Affective outcomes of schooling: Fullinformation item factor analysis of a
  student questionnaire." Paper
  presented at the meetings of the
  American Educational Research Association, Chicago, March, 1985. 34p.
- Muraki, Eiji and Engelhard, George, Jr.: "Full-information item factor analysis: Applications of EAP scores." Applied Management Psychology, v. 9, no. 4, December, 1985, pp. 417-430.
- Nielsen, François: "Hispanics in High School and Beyond." IN Michael A. Olivas, ed.: Latino college students. New York, Teachers College Press, 1986, pp. 71-103.
- Nielsen, François and Lerner, Steven J.: "Language skills and school achievement of bilingual Hispanics." Social Science Research, v. 15, no. 3, September, 1986, pp. 209-240.

- NORC, A Social Science Research Center, University of Chicago: "A report to participants in the Longitudinal Studies Program of the National Center for Education Statistics: The high school classes of 1972, 1980 and 1982." Chicago, 1985. 15p.
- NORC, A Social Science Research Center, University of Chicago: Report 1983-1984. Chicago, 1985. iii, 116p. (Contains a report on current activities, list of staff, projects and publications for the period.)
- NORC, A Social Science Research Center, University of Chicago: Soviet Interview Project methodological report. Esther Fleishman, Project Director. October, 1985. iv, 107p.
- O'Brien, Mary Utne: "Do sex of interviewer and sex of respondent interact to affect responses when questions are gender-related?" January, 1985. 7p.
- O'Brien, Mary Utne: "Survey methodology and data collection." Chapter 3 of Matthew Black: Organizational assessment study. Arlington, Virginia, Systems Research and Applications Corporation, February, 1985, pp. 3-1—3-36.
- O'Brien, Mary Utne and Ingels, Steven J.: "The Economics Values Inventory." Paper presented at the meetings of the American Educational Research Association, Chicago, April, 1985. (Journal of Economic Education, forthcoming.)
- Olson, Lorayn and Rosenfeld, Rachel A.: "Parents and the process of gaining access to student financial aid for higher education." *Journal of Higher Education*, v. 55, no. 4, July/August, 1984, pp. 455-480.
- Olson, Lorayn and Rosenfeld, Rachel A.: "Parents, students, and knowledge of college costs." Paper presented at the meetings of the American Sociological Association, San Antonio, TX, August, 1984. 33p.
- Osawa, Machiko: "The wage gap in Japan: Changing patterns of labor force participation, schooling and tenure." ERC/NORC Discussion Paper no. 86-1. April, 1986. 54p.

- Osawa, Machiko: "Working mothers: Changing patterns of employment and fertility in Japan." ERC/NORC Discussion Paper no. 86-5. June, 1986. 54p.
- Owings, Jeffrey A. and Stocking, Carol B.: Characteristics of high school students who identify themselves as handicapped. National Center for Education Statistics, June, 1985. ix, 42p. (NCES 84-214)
- Page, Benjamin I.; Shapiro, Robert Y.; and Dempsey, Glenn R.: "The mass media do affect policy preferences." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 59p.
- Page, Benjamin I.; Shapiro, Robert Y.; and Dempsey, Glen R.: "What moves public opinion." Paper presented at the meetings of the American Political Science Association, New Orleans, La., August, 1985. 75p.
- Page, Benjamin, I.; Shapiro, Robert Y.; Gronke, Paul W,; and Rosenberg, Robert M.: "Constituency, party, and representation in Congress." Public Opinion Quarterly, v. 48, no. 4, Winter, 1984, pp. 741-756.
- Peters, H. Elizabeth: "Marriage and divorce: Informational constraints and private contracting." *American Economic Review*, v. 76, no. 3, June, 1986, pp. 437-454.
- Peterson, Bruce L.: Codebook for the combined 1982 General Social Survey and Allegemeine Bevoelkerung-sumfrage der Socialwissenschaften (ALLBUS). February, 1985. 382p.
- Peterson, Bruce L.: "Confidence: Categories and confusion." GSS Technical Report no. 50. September, 1985. 50p.
- Peterson, Bruce L.: "Public opinion and abortion: A national comparison." Paper presented at the meeting of the World Association for Public Opinion Research, St. Petersburg, Florida, May, 1986. 42p.
- Peterson, Paul E.: The politics of school reform, 1870-1940. Chicago, University of Chicago Press, 1985. x, 241p.

- Peterson, Paul E.; Rabe, Berry G.; and Wong, Kenneth K.: When federalism works. Washington, Brookings Institution, 1986. xvi,245p.
- Porst, Rolf: "Educational aims in the United States of America and in the Federal Republic of Germany—A crossnational comparison." GSS Technical Report no. 51. August, 1984. (Revised version of a paper presented at the Conference on the NORC General Social Survey (GSS) and the German General Social Survey (ALLBUS), Harvard University, September, 1982.) 29p.
- Rasinski, Kenneth A.: "What's fair is fair—or is it?" Paper presented at the meeting of the Midwest Political Science Association, Chicago, April, 1986. Revised May, 1986. 34p. (Journal of Personality and Social Psychology, forthcoming.)
- Rasinski, Kenneth A. and Rosenbaum, Susan M.: "Predicting citizens support of tax increases for education: A comparison of two social psychological perspectives." August, 1986. 29p. (Journal of Applied Social Psychology, forthcoming.)
- Rasinski, Kenneth A. and Tyler, Tom R.: "Fairness and vote choice in the 1984 Presidential Election. 21p. (American Politics Quarterly, forthcoming)
- Raut, L.K.: "Capital accumulation, income distribution and endogenous fertility in an overlapping generations general equilibrium model." ERC/NORC Discussion Paper no. 86-11. Revised October, 1986. 38p.
- Rhoton, Patricia: "Attrition and the National Longitudinal Surveys of Labor Market Experience: Avoidance, control and correction." IASSIST Quarterly, v. 10, no. 2, Summer, 1986, pp.23-28.
- Richman, Harold A. and Stagner, Matthew W.: "Children in an aging society: Treasured resource or forgotten minority?" *Daedalus*, v. 115, no. 1, Winter, 1985, pp. 171-189.
- Robinson, Chris: "The joint determination of union status and union wage effects: Some tests of alternative models." ERC/NORC Discussion Paper no. 86-14. Revised May, 1986. 54p.

- Rosen, Sherwin: "Easy animal economics." ERC/NORC Discussion Paper no. 87-2. September, 1986. 34p. (American Journal of Agricultural Economics, forthcoming).
- Rosen, Sherwin: "Prizes and incentives in elimination tournaments." *American Economic Review*, v. 76, no. 4, September, 1986, pp. 701-715.
- Rosen, Sherwin: "The theory of equalizing differences." ERC/NORC Discussion Paper no. 85-3. January, 1985. 95p.
- Rosenfeld, Rachel A.: Farm women: Work, farm, and family in the United States. Chapel Hill, NC, University of North Carolina Press, 1985. xiii, 354p.
- Rossi, Peter H.; Fisher, Gene A.; and Willis, Georgianna: The condition of the homeless in Chicago: A report based on surveys conducted in 1985 and 1986. Amherst, Mass., and Chicago: Social and Demographic Research Institute, University of Massachusetts, and NORC, September, 1986. xiii, 221p.
- Salter, William; Tourangeau, Roger; and Lessler, Judith: Cognitive aspects of questionnaire design: Agenda for future research. Chicago, NORC, May, 1986. 34p.
- Schuerman, John R. and Wulczyn, Fred H.: "Building a social experiment from survey data: Maximizing policy impact." October, 1984. 9p.
- Schuerman, John R.; Wulczyn, Fred; and Farber, Naomi: "Evaluation of the Illinois Department of Public Aid Young Parent Program." Chapin Hall Center for Children Discussion Paper no. 009. November, 1984. ii, 67p.
- Schuman, Howard; Steeh, Charlotte; and Bobo, Lawrence: Racial attitudes in America: Trends and interpretations. Cambridge, MA, Harvard University Press, 1985. xiii, 260p.
- Sebring, Penny A.: "Raising high school graduation requirements: A look at the assumption and the evidence." Paper presented at the meetings of the Evaluation Network and the Evaluation Research Society, Toronto, October, 1985. 22p.

- Sebring, Penny A. and Jones, Calvin: "Thirteen years of data: What do we have to show for it?" Paper presented at the meetings of the American Educational Research Association, San Francisco, CA, April, 1986.
- Shapiro, Robert Y. "What influences public opinion: The media and their sources." Center for the Social Sciences (Columbia University) News, v. 5, no. 2, Spring, 1986, pp. 5-8.
- Shapiro, Robert Y. and Mahajan, Harpreet: "Gender differences in policy preferences: A summary of trends from the 1960s to the 1980s." Public Opinion Quarterly, v. 50, no. 1, Spring, 1986, pp. 42-61.
- Shapiro, Robert Y. and Patterson, Kelly D.: "The dynamics of public opinion toward social welfare policy." Paper presented at the meetings of the American Political Science Association, Washington, August, 1986. 67p. (plus 88 pages of tables)
- Shapiro, Robert Y. and Smith, Tom W.: "The polls: Social security." *Public Opinion Quarterly*, v. 49, no. 4, Winter, 1985, pp. 561-572.
- Shapiro, Robert Y. and Young, John T.: "The polls: Medical care in the United States." *Public Opinion Quarterly*, v. 50, no. 3, Fall, 1986, pp. 418-428.
- Sheatsley, Paul B.: "In memoriam: Herbert H. Hyman, 1918-1985." Public Opinion Quarterly, v. 50, no. 1, Spring, 1986, pp. 119-120.
- Sheatsley, Paul B.; Rodén, Ann-Sofi; and Beard, Christine: Contractor's final report for the National Ambulatory Medical Care Survey of 1985. October, 1986. Vol. 1, xv, 66p.; Vol. 2 (includes survey forms), v.p.
- Smith, A. Wade: "Cohorts, education, and the evolution of tolerance." Social Science Research, v. 14, no. 3, September, 1985, pp. 205-225.
- Smith, A. Wade: "Evaluating the products of alternative sampling methods." Paper presented at the meetings of the American Sociological Association, San Antonio, TX, August, 1984.

- Smith, A. Wade: "Social class and racial cleavages on major social indicators." IN Cora Bagley Marrett and Cheryl Leggon, eds.: Research in race and ethnic relations, vol. 4. Greenwich, CT, Jai Press, 1985, pp. 33-65.
- Smith, A. Wade and Meitz, June E. G.: "Family studies: Cautious progress vs. quibbling parochialism." Journal of Marriage and the Family, v. 47, no. 1, February, 1985, pp. 236-238. (Rejoinder to a comment by Morgan and Liao to an earlier article in the same journal, titled "Cohorts, education, and the decline in undisrupted marriages".)
- Smith, Tom W.: "America's heroes and heroines: A trend analysis of the 'Most admired person' series." Paper presented at the meeting of the American Sociological Association, New York City, September, 1986. 27p.
- Smith, Tom W.: "An analysis of the accuracy of spousal reports." GSS Technical Report no. 57. November, 1985. 15p.
- Smith, Tom W.: "Atop a liberal plateau? A summary of trends since World War II." IN Terry N. Clark ed.: Research in urban policy, Volume 1. Greenwich, CT, Jai Press, 1985, pp. 245-257.
- Smith, Tom W.: "Attrition and bias on the International Social Survey Program (ISSP) supplement." GSS Technical report no. 66. February, 1986. 21p.
- Smith, Tom W.: "Catholic attitudes on abortion." Conscience, v. 51, July/August, 1984, pp. 6,7,10.
- Smith, Tom W.: "Classifying Protestant denominations." GSS Technical Report no. 67. October, 1986. 44p.
- Smith, Tom W.: "Conditional order effects." GSS Technical report no. 33. Updated July, 1986. 30p.
- Smith, Tom W.: "Cycles of reform? A summary of trends since World War II." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 34p.
- Smith, Tom W.: "Did Ferraro's candidacy reduce public support for feminism?" November, 1985. 14p.

- Smith, Tom W.: "Laughing at the polls: How the comics and cartoons view public opinion surveys." Paper presented at the meetings of the American Association for Public Opinion Research, McAfee, NJ, May, 1985. 9p.
- Smith, Tom W.: "The 1985 survey of users of the General Social Surveys: A summary report." GSS Technical Report no. 65. January, 1986. 21p.
- Smith, Tom W.: "The polls: America's most important problems, part I: National and international." *Public Opinion Quarterly*, v. 49, no. 2, Summer, 1985, pp. 264-274.
- Smith, Tom W.: "The polls: America's most important problems, part II: Regional, community, and personal." *Public Opinion Quarterly*, v. 49, no. 3, Fall, 1985, pp. 403-410.
- Smith, Tom W.: "The polls: The most admired man and woman." Public Opinion Quarterly, v. 50, no. 4, Winter, 1986, pp. 573-583. (Originally a paper presented in adapted form and under the title "America's heroes and heroines," at the meetings of the American Sociological Association, New York City, September, 1986.)
- Smith, Tom W.: "The pope, the pill and the public: Trends in Catholic attitudes on sexual and reproductive issues." Paper prepared for U.S. Population and Development Policy: A religious perspective: A briefing for legislators, 24th April, 1985. Washington, Catholics for a Free Choice. 17p.
- Smith, Tom W.: "A preliminary analysis of methodological experiments on the 1984 GSS." GSS Technical Report no. 49. September, 1984. 44p.
- Smith, Tom W.: "Recalling attitudes: An analysis of retrospective questions on the 1982 GSS." Public Opinion Quarterly, v. 48, no. 3, Fall, 1984, pp. 639-649.
- Smith, Tom W.: "Summary of findings from the General Social Survey." GSS Technical Report no. 70. July, 1986. 28p.
- Smith, Tom W.: "That which we call welfare by any other name would smell sweeter: An analysis of the impact of

- question wording on response patterns." GSS Technical Report no. 55. July, 1985. 13p.
- Smith, Tom W.: "Unhappiness on the 1985 GSS: Confounding change and context." GSS Technical Report no. 56. Revied July, 1986. 13p.
- Smith, Tom W.: "Who, what, when, where, and why: An analysis of usage of the General Social Surveys, 1972-1985." GSS Technical Report no. 68. July, 1986. 18p.
- Smith, Tom W.: "Working wives and women's rights: The connection between the employment status of wives and the feminist attitudes of husbands." Sex Roles, v. 12, nos. 5/6, 1985, pp. 501-508.
- Smith, Tom W. and Fujimoto, Ruth: Annotated bibliography of papers using the General Social Surveys. 6th Edition. Chicago, NORC, May, 1986. 392p.
- Smith, Tom W. and Peterson, Bruce L.:

  "The impact of number of response categories on inter-item associations: Experimental and simulated results."

  Paper presented at the meetings of the American Sociological Association, Washington, August, 1985. 41p.
- Smith, Tom W. and Sheatsley, Paul B.: "American attitudes toward race relations." *Public Opinion*, v. 7, no. 5, October/November, 1984, pp. 14, 15, 50-53.
- Spencer, Bruce D.: "Conceptual issues in measuring improvement in population estimates." The Second Annual Research Conference, Washington, DC: U.S. Bureau of the Census, 1986, pp. 393-402.
- Spencer, Bruce D.: "Optimal data quality." *Journal of the American Statistical Association*. v. 80, no. 391, September, 1985, pp. 564-573.
- Spencer, Bruce D.: "Test score decline: What and how well does it measure?" Proceedings of the Social Statistics Section, 1985, American Statistical Association, pp. 57-64.
- Spencer, Bruce D.: "Toward conducting benefit-cost analysis of data programs." IN Robert W. Pearson and Robert F. Boruch: Survey research designs: Towards

- a better understanding of their costs and benefits. (Lecture Notes in Statistics, no. 8.) New York, Springer-Verlag, 1986, pp. 38-59.
- Sprachman, Susan; Burich, Mary C.; Rosenbach, Margo; Cromwell, Jerry; Spencer, Bruce; and Frankel, Martin: Physicians' Practice Costs and Income Survey final methodological report. December, 1985. xxii, 254p.
- Sprachman, Susan; Burich, Mary C.; Rosenbach, Margo; Cromwell, Jerry; Spencer, Bruce; and Frankel, Martin: Physicians' Practice Costs and Income Survey user's guide and codebook. December, 1985. iv, 406p.
- Sprachman, Susan and Rosenbach, Margo L.: Report to participants in the Physicians' Practice Costs and Income Survey. September, 1986. 7p.
- Stagner, Matthew and Richman, Harold: General assistance profiles: Findings from a longitudinal study of newly approved recipients. June, 1985. 64, vii p.
- Stagner, Matthew and Richman, Harold: Help-seeking and the use of social service providers by the welfare families in Chicago. Chapin Hall Center For Children, August, 1986. xi, 64p.
- Stagner, Matthew and Richman, Harold: "Re-examining the role of General Assistance." *Public Welfare*, Vol. 44, No. 2, Spring, 1986, pp. 26-32, 42.
- Sykes, Robert and Bock, R. Darrell: California Assessment Program: Report on the calibration, item equation and scoring of the 1985 eighth grade assessment. June, 1986, 11, 37p. plus tables (109p.)
- Taylor, D Garth: "Awareness of public opinion and school desegregation protest." IN Sandra Ball-Rokeach and Muriel G. Cantor, eds.: Media, audience, and social structure. Beverly Hills, CA, Sage Publications, 1986, pp. 252-270.
- **Taylor, D Garth:** Public opinion and collective action: The Boston school desegregation conflict. Chicago, University of Chicago Press, 1986. 256p.
- Taylor, D Garth; Taub, Richard P.; and Peterson, Bruce L.: "City residents and social theorists: Some microanalytic

- surprises on crime and the causes of neighborhood decline." Winter, 1985. 30p.
- Testa, Mark F.: "Child welfare in sociological and historical perspective.: Chapin Hall Center for Children Discussion Paper no. 004. Revised, October, 1985. 38p. (Forthcoming in J.F. Gilgun and others, eds: Rethinking child welfare: International perspectives. Sage Publications.)
- Testa, Mark F.: "Using computerized information systems to measure progress toward achieving permanence after foster placement." Paper presented at the American Association of Public Welfare Information Systems Management Conference, Austin, Texas, September, 1985. 20p.
- Testa, Mark F.; Hartnett, Mary Ann; and Goerge, Robert: Improving the analysis and utilization of child welfare information systems: Final report. Chapin Hall Center for Children. April 15, 1986. 200p.
- Testa, Mark F. and Lawlor, Edward: State of the child: 1985. Chicago, Chapin Hall Center for Children, University of Chicago, 1985. xviii, 126p.
- Tomes, Nigel: "The effects of religion and denomination on earnings and the returns of human capital." *Journal of Human Resources*, v. 19, no. 4, Fall, 1984, pp. 472-488.
- Topel, Robert H.: "Local labor markets." Journal of Political Economy, v. 94, no. 2, Part 2, June, 1986, pp. S111-S143.
- **Topel, Robert H. and Rosen, Sherwin:** "A time series model of housing investment on the U.S." ERC/NORC Discussion Paper no. 85-17. December, 1985. 70p.
- Tourangeau, Roger: "Cognitive science and survey methods." IN Thomas B. Jabine and others, eds.: Cognitive aspects of survey methodology: Building a bridge between disciplines. Washington, National Academy Press, 1984, pp. 73-100.
- Tourangeau, Roger: "Nonresponse problems in surveys and experiments". Proceedings of the Second Annual Research Conference, Washington: U.S. Bureau of the Census, 1986, pp. 319-324.

- Tourangeau, Roger; Lessler, Judith; and Salter, William: Cognitive aspects of questionnaire design: Part C report. Chicago, NORC, May, 1986. 63p.
- Tourangeau, Roger and Rasinski, Kenneth A.: "Contextual effects in attitude surveys." Paper presented at Context Effects in Surveys: An NORC Methodology Research Center Conference, Chicago, July 14, 1986. 43p.
- Tourangeau, Roger and Rasinski, Kenneth A.: Evaluation of the National Medical Care Utilization and Expenditures survey: Data collection frequency and the use of the summary. October, 1985. iii, 62p.
- Tourangeau, Roger and Smith, A. Wade: "Finding subgroups for surveys." *Public Opinion Quarterly*, v. 49, no. 3, Fall, 1985, pp. 351-365.
- Townsend, Robert M.: "Arrow-Debreu programs as microfoundations for macroeconomics." ERC/NORC Discussion Paper no. 86-7. Revised, June, 1986. 81p.
- Townsend, Robert M.: "Economic organization with limited communication." ERC/NORC Discussion Paper no. 86-3. April, 1986. 50p.
- Tuma, Nancy Brandon and Michael, Robert T.: "A comparison of statistical models for life course analysis with an application to first marriage." ERC/NORC Discussion Paper no. 85-7. April, 1985. 52p.
- Wegner, Toni Giuliano and Ree, Malcolm James: Armed Forces Vocational Aptitude Battery: Correcting the speeded subsets for the 1980 youth population. (AFHRL-TR-85-14) Brooks Air Force Base, TX, Air Force Human Resources Laboratory, July, 1985. 42p.
- Weiss, Yoram and Willis, Robert J.: "Children as collective goods and divorce settlements." *Journal of Labor Economics*, v. 3, no. 3, July, 1985, pp. 268-292.
- Willis, Robert J.: "Comment on Becker and Tomes." *Journal of Labor Economics*, v. 4, no. 3, Part 2, July, 1986, pp. S40-S47. (See Becker and Tomes: "Human capital and the rise and fall of families.")

- Willis, Robert J.: "A theory of the equilibrium interest rate in an overlapping generations model: Life cycles, institutions, and population growth." ERC/NORC Discussion Paper no. 85-8. April, 1985. 54p.
- Willis, Robert J.: "Wage determinants: A survey and reinterpretation of human capital earnings functions." ERC/NORC Discussion Paper no. 85-9. Revised May, 1985. 126p.
- Willis, Robert J.: "What have we learned from the economics of the family?" ERC/NORC Discussion Paper no. 87-1. Paper presented at the meetings of the American Economic Association, New Orleans, LA, December, 1986. 32p.
- Winship, Christopher: "Heterogeneity and interdependence: A test using survival models." IN Nancy Brandon Tuma, ed.: Sociological methodology, 1986. (vol. 16) San Francisco, Cal., Jossey-Bass, 1986, pp. 250-282.
- Wittberg, Patricia: "The effects of local activity on neighborhood attitudes: A comparison of black and white urbanites." *Urban Affairs Quarterly*, v. 20, no. 2, December, 1984, pp. 185-200.
- Wong, Yue-Chim: "The role of husband's and wife's economic activity status in the demand for children." ERC/NORC Discussion Paper no. 85-20. June, 1985, 39p.

Editor: Susan Campbell Writers: Suzanne Erfurth, Paul Sheatsley, Jeff Hackett Designer: Monica Tyrpak Principal Photographer: © Patricia Evans Additional Photographs: University of Chicago, p. 61; Vicki Fanfer, p. 72; Sheryl Cook Bates, p. 73; © Boston Globe, Tom Landers, p. 79 Typesetter: RT Associates, Inc. Printing: Printing Arts, Inc.

## OFFICERS OF THE CORPORATION

President, Norman M. Bradburn Vice President, Edward O. Laumann Secretary, Robert T. Michael Treasurer, Thomas G. Gerst Assistant Treasurer, Aurora Punzalan

#### **BOARD OF TRUSTEES**

Robert McC. Adams
Smithsonian Institution
Vincent P. Barabba
General Motors Corporation

William B. Cannon
The University of Chicago

Evelyn M. Kitagawa
The University of Chicago
William H. Kruskal

The University of Chicago Edward O. Laumann

The University of Chicago John J. Louis, Jr.

Northbrook, Illinois

Albert Madansky
The University of Chicago

Walter E. Massey
The University of Chicago

Robert T. Michael NORC

Ralph W. Muller
The University of Chicago

Arthur C. Nielsen, Jr. A.C. Nielsen Company

Harry V. Roberts
The University of Chicago

Eleanor B. Sheldon New York, New York

Joseph P. Sullivan Sullivan and Proops

#### Life Trustees

D. Gale Johnson
 The University of Chicago

 Nathan Keyfitz
 Laxenburg, Austria

 William H. Sewell
 The University of Wisconsin

#### **EXECUTIVE MANAGEMENT COMMITTEE**

Director, Robert T. Michael
Associate Director for Administration, Thomas G. Gerst
Associate Director for Survey Operations, Celia E. Homans
Codirector of the Center for the Study of Politics and Society, Christopher H. Achen
Director of the Center for Computing and Information Systems, Reginald P. Baker
Director of the Chapin Hall Center for Children, Harold A. Richman
Director of the Methodology Research Center, Bruce D. Spencer
Director of Economics Research Center, Robert J. Willis
Associate Director and Special Assistant to the Director, Pearl R. Zinner

