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# The Wisconsin Longitudinal Study: Adults As Parents And Children At Age 50<sup>1</sup>

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## Summary

We are carrying out a survey of more than 9000 American men and women who were first interviewed as seniors in high school in 1957 and have subsequently been followed up in 1957, 1964, and 1975; they will be about 53 years old when they are interviewed in late 1992 or early 1993. Each interview, about one hour in length, will be followed by a shorter mail questionnaire. We shall also interview a randomly selected sibling of each respondent, using a slightly shorter version of the telephone interview. We also hope to obtain a waiver that will permit us to link our survey records to information from the Social Security system, but this part of the design is currently under negotiation with the Social Security Administration. Finally, we expect to obtain enough information to link our records to the National Death Index.

Data from the Wisconsin Longitudinal Study (WLS) will be a valuable public resource for studies of aging and the life course, inter-generational transfers and relationships, family functioning, social stratification, physical and mental well-being, and mortality. The study has 5 specific goals: (1) To extend models of occupation and earnings and to elaborate the roles of aspirations in adolescence and at mid-life, of previous achievements, and of familial responsibilities in current economic and social standing, subjective well-being, mental and physical health, disability, and wealth; (2) To identify and measure local effects on opportunity, that is, specific characteristics of a person, firm, or economic sector that directly influence the chances of obtaining a job or a limited range of jobs; (3) To extend and elaborate models of sibling resemblance that will elucidate influences of the family of origin on the life course; (4) To investigate self-assessments of well-being in the context of aspirations, accomplishments, and social relationships with significant others; (5) To measure social and economic exchange relationships with parents, children, and siblings and assess the consequences of those relationships for well-being.

We are planning a follow-up survey of more than 9000 American men and women who were first interviewed as

seniors in Wisconsin high schools in 1957 and have subsequently been followed up in 1958, 1964, and 1975; these individuals will be approximately 53 years old when they are interviewed in 1992.<sup>3</sup> At the same time, we will interview a randomly selected sibling of most respondents. Approximately 2000 of these siblings were previously interviewed in 1977, and we have sufficient resources to interview approximately 4000 more siblings during this round of the study. The data collection process will include a 1-hour telephone interview, followed by a self-administered mail questionnaire, and a waiver that will permit us to link our survey records to information from the Social Security system. Also, we are collecting sufficient data to link our records with the National Death Index.

These new follow-up data, combined with our existing files, will become a valuable public resource for studies of aging and the life course, inter-generational transfers and relationships, family functioning, social stratification, physical and mental well-being, and mortality. We expect that it will be possible to enhance the value of the sample and data with additional data collection and data linkages. We believe that the cost and effort of this project are fully justified by five specific goals outlined herein: (1) To extend the series of measurements and models of occupational achievement and earnings of the members of this cohort that have been obtained in their younger years and, in particular, to elaborate the roles of aspirations in adolescence and at mid-life, of previous achievements, and of familial responsibilities in current economic and social standing, subjective well-being, mental and physical health, disability, and wealth; (2) To identify and measure local effects on opportunity, that is, specific characteristics of a person, firm, or economic sector that directly influence the chances of obtaining a job or a limited range of jobs;<sup>4</sup> (3) To develop models of sibling resemblance that will elucidate influences of the family of origin on the life course, including social and economic achievements, social participation, subjective well-being, mental and physical health, success in child-rearing, provision for retirement and old age, and patterns of morbidity and mortality; (4) To investigate self-assessments of well-being in the context of comparisons with previous aspirations and accomplishments, social statuses of parents, childhood friends, siblings, spouses,

and children, and in the context of past and current social relationships with those significant others; (5) To measure social and economic exchange relationships with parents, children, and siblings and assess the consequences of those relationships for well-being.

### **Background And Significance**

The Wisconsin Longitudinal Study (WLS) is a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957. Survey data were collected from the original respondents or their parents in 1957, 1964, and 1975. These data provide a full record of social background, youthful aspirations, schooling, military service, family formation, labor market experiences, and social participation of the original respondents. In 1977 the study design was expanded with the collection of parallel interview data for a highly stratified subsample of 2000 siblings of the primary respondents.

### **The WLS Data**

The WLS is a rich source of data on life-cycle processes that is of continuing interest to scholars in sociology, education, psychology, and economics.<sup>5</sup> The interview data have been supplemented by mental ability tests (of primary respondents and siblings), measures of school performance, and characteristics of communities of residence, schools and colleges, employers, and industries. The WLS records for primary respondents are also linked to those of three, same-sex high school friends within the study population. The measurement of social background includes earnings histories of parents obtained from Wisconsin state tax records, and the data on the socioeconomic careers of men in the main sample are supplemented by social security earnings histories from 1957 through 1971. The WLS is widely recognized as one of the most useful bodies of longitudinal data on the lives of Americans because of the quality of the survey measurements (and our efforts to measure that quality), extremely high retention of panel members, complete, multi-layered documentation of the data, and multiple linkages to personal and institutional records.

### **Research Based on the WLS**

The WLS panel has been used to develop the well-known "Wisconsin Model" of social and psychological factors in socioeconomic achievement. We have located more than 800 SSCI Citations to 7 core WLS publications since 1972. In addition, or in extensions of this central line of research, the WLS data have been used in studies of geographic constraints on college access; recruitment into teaching, nursing, and other occupations; choice of marital partner; differential family formation and fertility; gender differences in market participation and success; religious and ethnic differences in achievement processes; birth order effects on

ability and achievement; effects of high schools and colleges on aspirations and achievements; and inter-firm and inter-industry differences in compensation. Also, the project has been the locus of many useful methodological developments built around the design, collection, or analysis of data from the WLS. These include successful methods for tracing respondents over long intervals; the analysis of unit record data from the Social Security Administration without compromising confidentiality; structural equation models of achievement processes; methods for comparative analysis of social mobility; models with errors in the reporting of social and economic variables; and models of common family factors in the achievements of siblings<sup>6</sup>

Our last direct contact with the primary WLS respondents took place in 1975, when they were about 36 years old. At that time, most of the women were completing childbearing and were participating in the labor market or planning a return to it; men were well established in their occupational careers, but - because they married younger women - were not as far along in family formation. Using these data, we have analyzed the process of socioeconomic achievement from adolescence to mid-life and compared the socioeconomic achievement processes of men and women. WLS siblings varied widely in age, but 80 percent were between 27 and 45 years old in 1975, and for adult sibling pairs, we were able to conduct studies of family resemblance and intra-family differences in education, occupation, earnings, and fertility. Among our main research goals are to extend our models of social and economic achievement and participation of primary respondents and their siblings.

### **Planned Follow-Up Surveys**

In summer 1992 we began to interview the 9000 primary respondents and, whenever possible, a randomly selected sibling of each. The primary respondents will be 53 years old, and four fifths of their siblings will be 44 to 62 years old. At those ages, the WLS respondents and their siblings will be anticipating their own retirement and aging as well as managing relationships with one another, their adult children and their elderly parents: (1) In 1975, 92 percent of respondents had at least one living sibling, and 71 percent had at least two. Moreover, because of their position at the leading edge of the baby boom, siblings tended to be younger than primary respondents. Thus, we expect that an overwhelming majority of WLS respondents will still have at least one living sibling. (2) In 1975, 93 percent of the respondents had at least one living child; since child-bearing began around age 18 (for women) and was not yet complete in the cohort, we expect that almost all respondents will have at least one adult child. (3) Survivorship is much less among the respondents' parents. We ascertained the

father's year of birth in 1975, and we estimated that 18 percent of respondents will have a living father in 1992, while 42 percent of respondents will have a living mother. We estimate that about half the respondents will have at least one living parent, and the age of these parents will be around 80 years.<sup>7</sup> Thus, we believe that our respondents are ideally suited for a study of aging and of intergenerational relations among adults.

In our 1992 interviews, we are updating our measurements of marriage and divorce, child-rearing, education, labor force participation, jobs and occupations, social participation, and future aspirations and plans among primary respondents and siblings. In addition, we are expanding the content of the study by obtaining data about psychological well-being, mental and physical health, wealth, and social and exchange relationships with parents, siblings, and children. In designing the new measurements, we have attempted to maintain an appropriate balance between comparability with our own previous concepts and methods (which are similar to those used in the Current Population Survey and the 1973 Occupational Changes in a Generation Survey) and comparability with other significant research efforts, e.g., the new Survey of Health and Retirement, the National Survey of Families and Households, NIH surveys of work and psychological functioning, and the NORC General Social Survey; in addition, we have coordinated our design efforts with those of members of the MacArthur Foundation Research Network on Successful Midlife Development. Finally, we plan to obtain information and waivers that will eventually link our survey data to Social Security records and the National Death Index.

We have considered whether the collection of new data for the WLS is warranted, given the existence of other longitudinal studies and the possibility of collecting similar data for a new national sample. The latter alternative may be desirable for some purposes, but it would be most difficult, and probably impossible, to provide the wealth of background and life history data that are available from the WLS or other longitudinal studies. The more serious question is whether the WLS is worth further investment, relative to other longitudinal studies of similar vintage. We think it is, for several reasons: (1) The WLS data on the life course are unique in richness and quality. (2) Major national longitudinal studies that began in youth cover more recent cohorts. These cohorts are of interest in their own right, but none has reached the pre-retirement years. For example, members of the National Longitudinal Study of 1972 will be around 38 years old in 1992, and there are currently no resources for further follow-up activities. Those in the HSB samples of 1980 and 1982 will be 26 to 28 years old in 1992; members of the two younger panels in the 1967-68 National Longitudinal Studies of Labor Market Experience will be 40 to 50 years old in 1992; the oldest cohorts

covered in the Monitoring the Future Surveys will be about 35 years old in 1992. (3) Other longitudinal studies are restricted in similar ways to the WLS, which covers high school graduates from Wisconsin, almost all of whom are white. For example, members of the Career Development Study were juniors or seniors in the State of Washington in 1965-66, and they will be about 43 years old in 1992. The members of the NORC survey of 1961 college graduates are essentially the same in age as those in the WLS, but the sample is substantially more restricted with respect to educational attainment. (4) Project Talent may provide a national sample that is just 3 years younger than the WLS. However, it lacks the linkages of the WLS to socioeconomic data, and there have been serious problems of sample coverage and data access throughout the history of Project Talent.<sup>8</sup>

### **New Directions for Research in the WLS**

We have considered several ways in which the research agenda of the WLS could be extended. We have decided to focus on three of these opportunities in our initial work, without foreclosing the development of others at a future date. We believe that each of these is scientifically important and that they are complementary to the design and content of the WLS: (1) Effects of special preferences, skills, and attachments; (2) mental and physical health at midlife; and (3) social and economic exchanges and well-being.

### *Local Effects*

Most of the previous analyses of the WLS data have used continuous measures of outcomes — particularly, years of education, occupational status, and earnings — as dependent variables in structural equation models. This has improved our understanding of the relationships of a number of background and social psychological variables to education, occupation and earnings. However, the amount of variance explained by these linear models has always been relatively modest. This has been attributed to the operation of “luck” in individual outcomes (Jencks et al. 1972), but it may also arise from a systematic neglect of factors that are not easily captured by linear models. The planned new wave of data collection will attempt to measure persistent effects of some of these factors, called “local” effects.

A local effect on occupational opportunity is any characteristic of a person or of a firm or economic sector which directly influences the chances of obtaining only a limited range of jobs. It is contrasted with a “general” effect, such as the effect of general education, which influences chances of employment in a wide range of jobs. An example of a local effect would be a particular skill or aptitude, such as mechanical aptitude. There are some jobs, mostly in the middle range of prestige and income, which demand high mechanical aptitude. Possession of this aptitude should have a local effect on

an individual's occupational chances, raising the probability of landing the jobs requiring it, but not raising the probability of landing good jobs in general.

Aside from specific skills or aptitudes, three other main types of local effects can be distinguished, namely, preferences, contacts and structural shifts: (1) Individuals may, for reasons subject to empirical study, have preferences for certain kinds of work, such as outdoors jobs, jobs with less than usual amounts of direct supervision, or jobs with high creative or artistic potential. Jencks, Perman and Rainwater (1988) have examined non-monetary, non-prestige attributes of jobs and found them highly predictive of individuals' reports of job satisfaction, yet only poorly related to demographic measures such as age, sex, and education. We want to examine the relationship of such non-monetary, non-prestige preferences to particular life course developments, rather than to the measures just named. For example, preferences for certain job characteristics may vary with inter- and intra-generational family responsibilities, and stage of the life course. (2) Individuals may have direct or indirect personal contacts among those making hiring decisions in certain jobs. The desire of a parent to pass along a business to a child, the preference of a union for enrolling the children of its members, and the general social contacts of a parent or child which may be useful job leads for the child are all examples. Appropriate methods, which we expect to apply and refine, will make it possible to estimate the magnitude of these social network effects in a well-defined, general population. (3) Finally, the economy as a whole may experience contractions or expansions of opportunity in certain types of work. Such structural shifts cause transitory increases or decreases of opportunity in limited ranges of jobs. We are asking for retrospective descriptions of the first and last occupations held by respondents in their first two and last two businesses or organizations where each respondent has worked since 1975; in most cases, this will give us a complete employment history. Thus our occupational data will cover years with widely different levels of overall economic activity. It is important that models of local effects in occupational outcomes are not confounded with local structural effects; the broad temporal scope is intended to aid in distinguishing the two.

To put the overall point most simply, measuring and modeling "local effects" may explain more of the variation in occupational (and related) outcomes than can be done with regression, and may increase the qualitative detail of the explanations associated with multivariate studies of life course achievement in general populations. As individuals age and experience changes in their priorities and responsibilities in the post-childrearing, pre-retirement years of their fifties, qualitative aspects of the choices they make — as reflected in local effects — may produce more concrete explanations of behavior.

### *Mental and Physical Health*

We plan to examine the influence of educational and occupational pursuits on mental and physical health. The inclusion of detailed measures of psychological and physical functioning to the telephone and mail instruments will strengthen the multidisciplinary significance of the WLS by linking the attainment process, typically the domain of sociology, to mental and physical health, typically the domain of psychology. The proposed linkage affords significant strides in several research domains. First, prior studies of well-being have documented connections with education and income for men and women in American society (Diener 1984; Veroff, Douvan, and Kulka 1981), but the effects have been small. However, previous studies have used single-item measures of well-being that are of questionable reliability and validity (Larsen, Diener, and Emmons 1985). These measures have shown no connection to theories of psychological health (Coan 1977; Jahoda 1958; Lawton 1984; Ryff 1989a) nor to related empirical measures (Ryff 1989b). The WLS employs a differentiated, multifactorial concept of positive functioning that incorporates not only global happiness and satisfaction, but also the respondents' assessments of their effectiveness in dealing with the external world (autonomy, environmental mastery), and their sense of direction and progress in life (purpose in life, personal growth). With additional measures of physical health status, it will thus be possible to map the effects of educational and occupational attainment on an array of mental and physical outcomes.

Previous research on the relation of social structural factors (e.g., education, income) to psychological functioning has also been largely descriptive. Previous studies chart the magnitude and direction of linkages between demographic characteristics and subjective well-being, but do not specify the mechanisms through which educational and occupational achievements affect self-evaluations.

Two central social-psychological mechanisms will be explored in the research: (1) We will examine how social comparisons with significant others influence subjective well-being in midlife. The parallel sibling sample in the WLS provides vital comparative data about the respondents' attainments relative to a key group of significant others. This question constitutes a significant departure from prior psychological research on siblings, which has focused on effects of sibship variables (e.g., number of siblings, birth order) on achievement, intelligence, and personality (Zajonc 1976), as well as on disaggregating the comparative effects of genetic and environmental factors on behavior (Plomin and Daniels 1987). Few studies have examined the nature of sibling relationships in adulthood and later life (Cicirelli 1989) or the consequences of these relationships for psycho-

logical well-being. It is likely that adults use their siblings as "measuring sticks" to evaluate their lot in life (Troll 1975). The WLS thus provides a compelling data set with which to study the influence of sibling relationships — and their inherent social-comparative features — on self-evaluations, subjective well-being, and physical health in midlife. The specific cognitive mechanisms through which such comparisons influence well-being are derived from a synthesis of relative deprivation theory (Suls 1986), Tesser's (1988) self-evaluation maintenance model, and various strands of attribution theory (Mirowsky and Ross 1990). Additional comparative data will be obtained on the attainments of the respondents' parents and children. Adults who have accomplished less than their parents may be at greater risk for psychological distress. Alternatively, the "American dream" suggests that parents hope to have children who do at least as well, if not better, than themselves, so negative discrepancies with children (i.e., when children have accomplished more) may be conducive to positive self-evaluations. These expanded self-other comparisons offer important new directions to research on intergenerational relations, which has neglected the midlife era when one's children are becoming young adults and one's parents are growing old (Hagestad 1987).

(2) The second proposed social-psychological mechanism through which educational and occupational attainments influence self-evaluations is temporal comparisons. Those who have advanced considerably beyond their starting resources are expected to show more positive self-evaluations than individuals who have made little gain or have lost ground. It may not be absolute levels of education, income, or status that predict psychological well-being, but the magnitude of those attainments relative to the resources with which one began. The WLS provides significant advances over prior studies because we can operationalize temporal comparisons in a behavioral, performance-oriented domain (educational and occupational achievement). Previous research has examined only subjective perceptions of personality change (Markus and Nurius 1986).

In sum, the planned study combines a theory-guided view of psychological well-being with fresh ideas about the relevant social-psychological processes by which people evaluate their accomplishments within the context of enduring family bonds across the life course. The design weaves data on three generations and multiple siblings, enabling us to explore the dynamics of individual development in the context of family histories and generational succession.

#### *Social and Economic Exchanges*

Esgebeen and Hogan (1990, p. 4) have nicely stated the case for improved measurements of social and economic exchanges among parents and children: "In small-family

societies, ... [t]heory thus suggests that parental investment will be diluted when a large number of children compete for resources, and that it will be more heavily concentrated on children who bear them grandchildren. ... These hypotheses have been difficult to evaluate for modern societies because of the paucity of data documenting patterns of exchange." Our new data will include measures of exchanges including patterns of kin contact, financial assistance, and the provision of services and care-giving. In the context of extensive WLS information on family origins, marital and fertility histories, earnings records, and status attainments, measuring these exchange variables should permit major advances in our ability to test a variety of hypotheses about inter-generational transfers.

Following the family sociology tradition of Adams (1968), recent findings from the National Survey of Families and Households (Sweet, Bumpass, and Call 1988) have again demonstrated that patterns of kin contact, care-giving, and financial support tend to be intertwined. Relatives who help each other with one type of assistance tend to provide the others as well, and to communicate more frequently in person and via mail and telephone contacts. Although the most intensive care-giving assistance is provided for severely ill or disabled persons, help in the form of child care remains very important despite the trend toward purchasing that care on the market.

As opposed to receiving aid, giving follows a U-shaped pattern by age, and in a manner that is particularly salient for persons of the WLS sample's ages: young and elderly adults get more aid, and middle-aged adults are much more likely to provide aid (Lee 1979; Morgan 1982). Additionally the female members of the sample are more likely to exchange services with their kin, with males involved more in financial exchanges (Esgebeen and Hogan 1990).

Along with the likelihood that WLS members are heavily involved in family transfers and exchanges because of their stage in the life-cycle and the interaction effects of gender and age, their social exchanges should also tell us more about the impact of several recent trends. These include increased female labor force participation, rising divorce rates, increased demands for government spending on programs for children, and the slow growth in wages since the early 1970s. Furthermore, the extent to which prime-age parents may have been able to offset the effects of these influences on their children may have been restricted by their own economic and personal difficulties, as well as by the need to plan for new obligations that arise from increased life expectancy for themselves and their parents.

The current sources of family financial support for WLS sample members will include gifts and loans from older

parents and other relatives, as well as actual and expected bequests. However, many WLS members are likely to donate substantial time and financial support to their parents, as well as to their own offspring. Also, donations by grandparents to the children of WLS respondents may alleviate financial pressures for some. Economists who have studied these inter-household transfers (ITs) emphasize them as potentially important determinants of economic status that may have substantial redistributive effects (Cox and Raines 1985; Kurz 1984). Furthermore, the literature about the effect of Social Security on savings and retirement behavior has long recognized the potential of ITs to either complement (Cox 1987) or offset income opportunities from public transfer programs (Barro 1974, Lampman and Smeeding 1983). Whatever their effect on the mix of support from family and public sources, it is clear that if ITs substantially augment the resources available to pre-retirees, they are likely to affect work behavior via wealth effects on labor supply and savings decisions (Kotlikoff 1987). Consequently, there is a need to identify which WLS respondents receive substantial ITs, to improve understanding about their role as a potentially important reason for heterogeneity in work behavior, social exchanges with kin, and psychological well-being. Additionally, analyses of the circumstances that motivate WLS respondents to donate substantial ITs to their parents, children and siblings can help to elucidate how the financial pressures of those responsibilities influence earnings and other economic status variables.

### Previous Research<sup>9</sup>

Previous research with the WLS developed comprehensive social psychological models of socioeconomic achievement from adolescence through age 36. In recent work, our aim has been to incorporate estimates of response errors in variables entering into the models and to account analytically for similarities and differences between siblings. We studied the extent to which the parameters of our stratification models were distorted by random and correlated errors in reports of parental status, social influences, and educational and occupational aspirations and attainments. We incorporated our estimates of errors in these variables into attainment models both for men and for women. We have made considerable progress in our research on sibling similarities and differences in socioeconomic careers and in family formation and fertility behavior.<sup>10</sup>

### *Socioeconomic Achievements of Men and Women*

Throughout the project one of our principal efforts has been to develop models of social and psychological influences on educational and occupational attainments of men and women that incorporate our best estimates of errors in parental status variables, social influences, educational and occupational aspirations and attainments. We began our efforts by developing a model for men that

incorporates some 26 measured variables into a recursive system of 14 unobservable (latent) constructs; the functioning of 9 of the latter variables is further simplified by postulating 3 other unobservable variables (Hauser, Tsai and Sewell 1983). Briefly, the model specifies that social origins and ability affect post-secondary schooling and occupational careers by way of aspirations and social influences in late adolescence. The analysis asks whether the Wisconsin data are consistent with the modified causal chain hypothesis proposed in the original formulation of the model (Sewell, Haller, and Portes 1969), rather than with models that incorporate many more lagged effects. The causal chain hypothesis receives far greater support than in previous analyses of the data that have not taken account of survey response error (and other stochastic components of latent variables in the model); that is, the lag-1 effects postulated in the model are far stronger than has been found in the past, and few delayed effects are present. For example, the model accounts for 69 percent of the variance in post-secondary schooling, for 73 percent of the variance in the status of first jobs, and for 69 percent of the variance in occupational status at age 36. The model identifies random response errors and correlations among responses obtained on the same occasion, from the same person, or using the same method. The model also allows analysis of the contamination of retrospective reports of social influences and aspirations by intervening events. Thus, the analysis provides new evidence about the stratification process, about the validity of retrospective and contemporaneous reports of status variables, and about the social psychology of retrospection.

This model has also been estimated for women in our sample in order to compare the educational, occupational and economic achievements of men and women (Tsai 1983; also, see Sewell, Hauser, and Wolf 1980). We find that, although women have gained parity in educational attainment, their labor force activities and outcomes are still restricted. Whatever occupational equality may exist at any one stage of the life cycle, women have fewer opportunities for gains in occupational status over the life course. Women obtain smaller returns on their earlier occupational achievement than men do. Whereas women are forced to rely more on academic performance and formal education for occupational placement, men increase their occupational status over the life cycle mainly as a result of their earlier occupational experiences. Moreover, parents transmit direct occupational and economic advantages across generations to their sons, but not to their daughters. On the other hand, women receive larger earnings returns to educational attainment and occupational status than do their male counterparts. The comparisons also indicate that men's earnings are primarily determined by their occupational status, whereas women's earnings are primarily deter-

mined by the amount of labor supplied to the market. Finally, marriage and childbearing have positive effects on men's earnings, but negative effects on women's earnings. However, the negative effects of marriage and childbearing for women disappear when labor force participation is controlled.

#### *Effects of Family Structure and Sibling Resemblance*

We have examined the effects of birth order and size of sibship on educational attainment for the full sibships of our primary respondents (Hauser and Sewell 1985). We have undertaken this analysis because of the recent revival of interest in birth order effects resulting from theories proposed by Zajonc and Markus (1975) and by Lindert (1977). In our study of the 30,000 men and women in the full sibships of our 9,000 primary respondents we find no effects of birth order on educational attainment when size of sibship and other relevant variables are controlled, whether we look at selection into the sample of high school graduates, post-secondary educational attainments of those graduates, or educational attainments within full sibships. Educational attainment appears to increase with birth order when family size is controlled but this happens when secular increases in schooling have occurred within as well as across families. Thus, when we control birth year and parental education, there is no significant association between birth order and educational attainment: there are no linear or non-linear effects, there are no effects of being first or last born, and there are no statistically significant or patterned differences among ordinal positions. Thus, there is no need to invoke any of the more complex theories of child development or intra-familial resource allocation to explain the effects of birth order on educational attainment because there is nothing to explain. Retherford and Sewell (1991) have carried out a comprehensive test of the confluence model using data on the mental ability of WLS primary respondents and siblings, and there, too, the findings have been clear and negative.

We have studied sibling resemblance in education, occupational status, and earnings and in age at marriage and fertility (Clarridge 1983). We find little resemblance between in fertility between sisters, but there is a great deal of family resemblance in socioeconomic achievement and its antecedents. For example, we estimate that family origins are associated with 49 percent of the variance in measured ability, 46 percent of the variance in educational attainment, 41 percent of the variance in the status of first jobs, 38 percent of the variance in status of current jobs (in 1975), and 27 percent of the variance in earnings. Much of this research has involved the development of structural equation models of sibling resemblance in educational and occupational status (Hauser 1984; Hauser and Mossel 1985; Hauser and Mossel 1987; Hauser 1988). In this work multiple measurements of educational attainment and occupational status for male

high school students and their brothers are used to develop and interpret skeletal models of the regression of occupational status on schooling that correct for response variability and incorporate a family variance component structure. These analyses have provided a methodological template for the specification of more complete models of stratification (Hauser and Sewell 1986), and we are very excited about the prospect of extending them to cover the later achievements of WLS respondents and siblings. We have not yet exhausted the possibilities for analyses of sibling resemblance in the existing WLS data, and we are continuing to work on several topics: inter-sibling influence on educational attainment (Lee 1989); the factorial complexity of schooling; sibling resemblance in social participation; and the social psychology of adolescent status attainment. Much of our previous analytic effort has been spent in developing models and methods for these analyses. With the combination of the sibling pair design and multiple measurements obtained from self- and proxy reports by siblings, we believe that it will be possible to make dramatic progress in modeling effects of family background, of individual differences in achievement, and of cross-sibling effects on achievement (Hauser and Wong 1989). We believe that similar models and methods will also help to elucidate social influences on the broader array of outcomes that will be measured in the 1992 survey, especially those pertaining to physical and mental health.

#### *Mental and Physical Health*

Psychological well-being will be assessed with a multidimensional formulation of positive functioning based on the integration of clinical, mental health, and life-span developmental theories (Ryff 1989a). The points of convergence in these theories constitute six key dimensions of well-being (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self-acceptance), which have been operationalized with structured self-report scales (Ryff 1989b). Preliminary research indicates that the scales have acceptable psychometric properties, and that certain of them, particularly positive relations with others, personal growth, autonomy, and purpose in life, account for additional and independent variance beyond that covered by earlier measures of well-being (e.g., life satisfaction, happiness, self-esteem).

In addition to these instruments, the multifactorial assessment of well-being will include global, single-item indicators as employed in prior survey research (Veroff, Douvan, and Kulka 1981), measures of psychological distress (i.e., depression), and physical health status. These instruments will enable comparisons with other data sets (e.g., ISR Surveys) as well as afford more precise evaluation of the impact of the attainment process on multiple aspects of mental and physical health.

Depression will be measured by the Center for Epidemiological Studies' Depression Scale (CES-D) (Radloff 1977). Physical health will be assessed with the OARS (Duke University 1978) checklist of illness, measures of height and weight, and items regarding subjective health evaluations and perceived changes in health since age 40. Additional items, as developed by the MacArthur Midlife Research Network, have been included to assess activities and time devoted to health maintenance.

The self-evaluation maintenance (SEM) model (Tesser 1980) predicts the conditions under which people will react with either jealousy or pride to the success of comparison others. Specifically, closeness/likeness (e.g., in age, sex) is hypothesized to moderate the effect of relative performance. Thus, the interaction effect predicts that if the sib performs better than the self *and* the sib is more like the self, there will be greater friction. Using this general model, we can examine the implications of social comparisons in the family for subjective well-being as well as for patterns of support and assistance between family members. We will also examine how sibs cope with discrepancies in their individual achievements. Within-family achievement differentials are hypothesized to be a source of psychological discomfort. To alleviate distress individuals may reconcile their achievements relative to their sibs by discounting the success of comparison of others and relinquishing responsibility for their own shortcomings, e.g., denying responsibility for failure: "I've had little control over the things that happen to me."

Just as people compare their attainments to those of others, they also compare their present selves with their past attainments. Our objective here is to first predict people's present achievements (occupational status, earnings) using the Wisconsin Model. Our interest lies in the effects of achievements, net of individual endowments, education, and achievement in the early career. First, we are concerned with the implications of these differing relative locations for mental and physical well-being in midlife. For example, individuals who have gone beyond their original resources are predicted to show positive self-evaluations (self-acceptance), a sense of effectiveness (autonomy, environmental mastery), and personal progress (purpose in life, personal growth). Second, we are concerned with respondents' aspirations for the future and for their offspring as a function of where they are relative to where they began. Of special interest is whether the success of children helps to mitigate the adverse psychological effects of underachievement among midlife adults. Finally, we will examine how people revise their past as a function of what they have or have not attained. Among the hypotheses derived from control theory is that people rewrite the past. For example, they may look back to an earlier period and recall having lower aspirations than

they actually reported at the time. They can thus exaggerate change when in fact little change has occurred (Ross 1989).

### *Social and Economic Exchanges*

In work on household economics with the National Survey of Families and Households, we have been studying the determinants of inter-household transfers (ITs) by focusing on the respective roles of family background, life-course events, and government transfer income opportunities. Our analysis has established that ITs may be particularly important for certain types of households, and especially after age 45. Beyond that age, most NSFH respondents give more in gifts and loans than they receive on average. However a substantial minority reported receiving much more than they gave during the NSFH's 1982-86 recall period. For the 45-59 year subgroup, 12 percent received gifts averaging nearly \$9,000, with 7 percent reporting loans that averaged about \$10,000. After age 60, the average of gifts and loans received are substantially less—roughly half of their pre-retirement levels. Although the percentage receiving bequests is about 2 percent for all persons over 45 the average amounts of these ITs are large—at about \$20,000 for the 45-59 group, and \$50,000 for older respondents. Hence although mature adults continue to help their own children via gifts and loans, those who receive help from their relatives (primarily parents) get substantial support from them, and a few can expect to receive very large bequests.

As in our work with the NSFH, we plan to use WLS histories on demographics, earnings, and other experiences to construct variables that describe whether and how recently the respondents had experienced events that would increase (or decrease) their needs for gifts and loans. Events such as the onset of a severe illness influence the timing of these transfers. Given that a transfer occurs, family background, respondent's earnings, and government income opportunities determine how much help gets provided.

For younger persons ITs seem to be associated with major life-course events such as births and marriages that create need for help with basic living expenses. However after age 45 NSFH respondents tend to report that gifts and loans they received were more often for home-buying and other investments, i.e., intended to help them accumulate wealth. Accounting for wealth transfers and their potential influence on well-being and the rigidity of the class structure requires a more comprehensive model that links prior transfers, such as those to fund educational achievement, to current transfer behavior. To study that process we intend to adapt the Wisconsin status attainment model, by elaborating it to include ITs as an influence on status achievements. An NSFH result that motivates our interest in ITs as a potentially impor-

tant intervening variable is that the net effect of respondent's education on gifts and loans received is highly positive in models that control for father's education and current earnings. Education may be tapping otherwise unmeasured influences of family wealth operating through educational achievement. However families that provide help to educate their children may continue to support them throughout the life-cycle, for which they presumably get better support in their old age—in which case educational differences tap differences in preferences, not wealth. The family background measures in the WLS are more complete for the purpose of analyzing IT effects than in any other data set. Specifically the parent's income data from Wisconsin tax records will control much better for initial differences in ability to provide transfers.

Finally, we plan to analyze whether and to what extent both receiving and giving ITs and care-giving assistance influence WLS respondent's psychological well-being. Douthitt and MacDonald (1990) have been using the Wisconsin Basic Needs survey to study the relative contribution of life-cycle variables and alternative measures of financial status to variation in the Andrews-Withey Delighted-Terrible scale on subjective well-being. As part of that work for NIMH, they have been able to separate the effects of wealth and measures of net worth from current earnings. A WLS follow-up that included a match with Social Security earnings would permit better analyses of the financial sources of variation in global satisfaction measures. Additionally placing perceived well-being as the ultimate dependent variable in a model that includes family background, current economic statuses, and measures of inter-family transfers would yield information about the relative importance of these transfers, as gauged by measures of satisfaction and not merely in dollar terms. In particular, we note that although economists have been very active in modeling the determinants of family assistance, they have not been very explicit about the importance of that assistance—either in economic terms, or as otherwise evaluated by the recipients themselves.

### Design and Methods

The study is based on a telephone interview and self-administered mail-out, mail-back questionnaire of WLS primary respondents and their siblings. It will build on information about the life course previously obtained in surveys in 1957, 1964, 1975, and 1977 and from various public records. This section describes the means by which new survey information is being collected, integrated with the existing data (excepting confidential Social Security records), subjected to preliminary analyses, and made available to other cooperating researchers as core information on which additional data collection efforts and analyses may be based.

The WLS sample is large and heterogeneous, and it is broadly representative of white American men and women who have completed at least a high school education. The sample is mainly of German, English, Irish, Scandinavian, Polish, or Czech ancestry. Some strata of American society are not well represented in the WLS. Everyone in the primary sample graduated from high school; about 7 percent of their siblings did not graduate from high school. We have estimated that about 75 percent of Wisconsin youth graduated from high schools in the late 1950s. Minorities are not well represented; there are only a handful of African American, Hispanic, or Asian persons in the sample. The WLS sample is sometimes criticized for over-representing persons of farm origins. That is not correct. About 19 percent of the WLS sample is of farm origin, and that is consistent with national estimates of persons of farm origin in cohorts born in the late 1930s. In 1964 and in 1975, about two thirds of the sample lived in Wisconsin, and about one third lived elsewhere in the U.S. or abroad.<sup>11</sup>

There has been very little attrition in the course of the WLS. Response rates, relative to the full, initial cohort sample of 10,317, were 86.5 percent in 1964 and 88.6 percent in 1975. (That is, in the 1975 follow-up we did not drop individuals for whom no response had been obtained in 1964.) In the current round of the study, we originally planned to include only the 9138 individuals who participated in the 1975 survey and a surviving sibling (if any) of those individuals. In addition to individuals who died by 1975, this excluded about 3 percent of the original sample who were dropped from the 1975 survey because they could not be found, about 6 percent who were dropped from the sample because they could not be interviewed by telephone (because of illness, institutionalization, or residence outside the U.S., or because they could not be reached by telephone), and another 4 percent of the original sample who refused to participate in the 1975 study.

Before the tracing began (in July 1991), we knew that we would achieve substantial success in tracing the 1975 respondents, for we had found 92 percent of a pilot sample of 184 respondents in the 1975 survey. For the production tracing operation, we divided the sample into three broad strata: 1975 respondents for whom no brother or sister had been drawn into the 1977 sibling survey (about 6500 persons);<sup>12</sup> 1975 respondents for whom a brother or sister had been drawn into the 1977 sibling survey (about 2500 persons); and 1975 non-respondents who were not known to have died (about 1000 persons). Each of these groups was divided into 10 stratified random replicates. The main lines of stratification are the sex of the respondent and his or her selected sibling, and the educational attainments of the respondent and sibling. We carried out production tracing one

subsample at a time, beginning with the non-sibling subsamples, followed by the sibling subsamples. The subsample design gave us rapid and reliable feedback about our overall success rate, and it also smoothed the flow of easy- and hard-to-find cases. As of September 1992, we have successfully located between 96 and 98 percent of both members of each potential respondent sibling pair in each of the first five replicates of both the non-sibling and sibling-pair samples. We are continuing the tracing operation to complete the remaining subsamples and to relocate respondents who move between the initial trace and the attempted telephone interview.

Our tracing efforts are carried out almost entirely by telephone. We begin with a direct call to the primary respondent or selected sibling at the last known telephone number, and we continue with a call to the parents' last known number. Those methods yield sufficient information for about half the cases. We find the remaining cases using a variety of methods, based on previously known addresses, siblings' and childrens' names, high schools or colleges attended, and places of employment. Two key tools have been a commercial credit union database (in which we have no access to financial information) and a national database of names, addresses, and telephone numbers on CD ROM. We count a case as completed only when we have confirmed names, addresses, and telephone numbers (or lack thereof) for both members of a sibling pair with a responsible adult in their family.

Given the success of the main tracing effort, we decided to carry out a pilot effort to find persons who did not respond in 1975 and were not known to be dead. Using our standard methods we were able to locate 86 percent of a random pilot sample of 99 persons, and — after considering the need to collect additional background material — we decided to include 1975 non-respondents in the new follow-up.

### *Study Design*

The WLS cohort of men and women, born about 1939, precedes by about a decade the bulk of the baby boom generation that continues to tax social institutions and resources at each stage of life. For this reason, the study can provide early indications of trends and problems that will become important as the larger group passes through its fifties. This adds to the value of the study in obtaining basic information about the life course as such, independent of the cohort's vanguard position with respect to the baby boom. In addition, the WLS is also the first of the large, longitudinal studies of American adolescents, and it thus provides our first large-scale opportunity to study the life course from late adolescence through the mid-50s in the context of a complete record of ability, aspiration, and achievement.

Past waves of the study have provided multiple, often overlapping measures of factors affecting life-course aspirations and outcomes. In addition to the fundamental advantage of obtaining true longitudinal measures for causal modeling, multiple measures have been valuable in estimating the effects of measurement error on the parameters of causal models of aspiration and attainment. Of all the multiple measurements, however, the most fruitful have perhaps been the parallel questions asked of core respondents and their siblings. A recent series of papers, described above, has shown the power of this design for discovering the effects of unmeasured factors which operate within families to influence a variety of outcomes in later life (Hauser and Mossel 1985, Hauser and Sewell 1986). Unfortunately, as the possibilities of this feature of the study design have come to seem ever more promising, the smaller size of the sibling sample (about 2000) compared with the core sample (9,138), has become a limiting factor. Some analyses cannot be done with the low statistical power available at this sample size, for example, when we work with subsamples of sibling pairs defined by the sex of the primary respondent and his/her brother/sister (Lee 1989). For this reason, and because of the substantive importance of investigating family effects, we proposed that a randomly designated sibling of every primary respondent, an additional 5500 persons, be interviewed in this round of the study; at this writing, we expect to have enough support to interview about 4000 of these brothers or sisters, so we will exclude some of the replicate samples from this part of the study.<sup>13</sup>

It is important to note that the existing sample of 2000 siblings was augmented to include all twins of the core sample members, whether or not they had been drawn in the 10,000 original cases of the high school sample. There are 116 distinct pairs of twins, a sizeable number for a sample from a general population, followed for a long period of time.

### *Timing of Activities*

Previous experience with the WLS provided a sound basis for planning the sequence of our activities. The past year was spent primarily on sample tracing, instrument development and pretesting, and the creation of selected abstracts of data from the project files or from the 1975/1977 questionnaires that are being used directly in the 1992 interviews. For example, aside from identifying information, the telephone interviews use prior data on marital status, job in 1975, children, and siblings; we ask the respondent about his relationship with a best high school friend only in the 20 percent of cases where each member of a dyad in the sample named the other as among his or her best high school friends. There are three instruments: the core respondents' interview schedule; the siblings' interview schedule (possibly with some modification for siblings who were not previously

interviewed); and the mail-back questionnaire to be sent both to core respondents and siblings. The first two questionnaires will be very similar.%% The instruments have been developed and pretested thoroughly with the help of persons in the class of 1957 who are not in the WLS sample.

This year will see the collection of the data, by both telephone and mail, together with additional tracing activities for previously-located respondents who cannot be relocated at the time of the survey. Data will be merged and loaded into a preliminary file, and cleaning operations will begin. As soon as the data are clean, the preliminary files will be made available to interested researchers outside the group. We expect to prepare these files for replicate subsamples on a flow basis, so some data will become available before the fieldwork is complete.

In the third year extensive data merging and variable construction will lead to preliminary data analyses and publications. These early efforts will probably be straightforward exploitations of the new data, and will extend the time horizons in standard sociological and social psychological models of the life course. Also during this year, plans and proposals will be formulated for additional analyses of the data and for the record linkages that will be possible with them.

#### *The WLS Data*

The planned research will make use of detailed information already obtained for earlier periods of the life course. Previously collected data span more than 3600 columns of coded items per case, and they cannot be described in detail here. An overview of the existing data may help indicate the potential usefulness of the planned new survey data and linkages.<sup>15</sup>

In 1962, William H. Sewell obtained data from a 1957 survey of Wisconsin high school seniors in public, private, and parochial schools. A random sample of 10,317 cases (approximately one-third of the seniors), was selected for further study. Information on the measured mental ability of each student was added to the cards from the files of the Wisconsin State Testing Service, which at that time conducted a testing program covering all eleventh graders in the State. A number of indexes based on information from the survey were developed and added to the cards for each student, including the socioeconomic status of the student's family, the student's attitudes toward higher education, educational and occupational plans, and perceived influence of significant others on educational plans. Relevant measures of school, neighborhood, and community contexts – for example, the socioeconomic composition of each senior class, the percentage of its members who planned on going to college, the size of the school,

the size and degree of urbanization of the community of residence, and the distance of the student's place of residence from the nearest public or private college or university – were constructed from secondary sources.

In the spring and summer of 1964, seven years after the students had graduated from high school, we undertook a follow-up study of the original sample. Using a questionnaire on a double postal card, information was obtained from parents on the post-high school education, current occupation, military service, marital status, and present residence of over 87 percent of the sample (Sewell and Shah 1967). With the cooperation of the Wisconsin Department of Revenue (and following their strict arrangements to guarantee the privacy of individual records), information on the parents' occupations and income was obtained from their 1957 to 1960 state income tax returns. Still later, we obtained information on earnings for the males in our sample from the Social Security Administration for each year of covered employment from 1957 to 1967. This phase of the project required an elaborate linkage procedure to protect individual identity. The earnings record was later extended to cover the period from 1957 to 1971. Our data were further enriched by addition from several published sources of information on the characteristics of secondary and post-secondary schools, colleges, and universities.

During 1975, we carried out 1 hour telephone interviews with the sample and obtained the following information from our sample: (1) composition of family of origin: age, sex, and education of each sibling, the occupation and address of a randomly selected sibling, and the parents' ethnic and religious background; (2) the education of the respondent: content, timing, and location of all post-secondary schooling, including vocational, collegiate, and military schooling; (3) labor force experience: dates and types of military service, first civilian job, occupation in 1970, current (1975) job, longest job in 1974, earnings in 1974, weeks and hours worked, location, size, and type of work organization, work satisfaction, work authority, occupational aspirations, labor force participation and jobs held before marriage and in each birth interval (women only); (4) characteristics of family of procreation: marital status, marital history, a roster of children by age and sex, and educational and occupational aspirations for a randomly selected child; spouse's work status, education, occupation, and 1974 earnings; (5) selected retrospective information: aspirations while in high school and names of best high school friends; (6) social participation: membership in organizations, church attendance, visiting behavior, voting. We obtained similar information from interviews with 2000 randomly selected siblings (including all twins) during 1977, and at that time we also searched the records of the State Testing Service for

mental test scores for the siblings.

#### *Data Collection*

Although no attempt was made to obtain an agreement to be interviewed as part of the 1989 trial study, the 1975 survey obtained responses from 88.6 percent of the primary respondents, and the 1977 survey obtained responses from 87.4 of the randomly selected siblings. The project has attempted to cultivate the good will of the sample, through reports made to the respondents and by other means, and we expect that excellent response rates will again be obtained. At this writing, about 700 interviews have been completed in the first two random replicates of the main sample, and these reflect about a 95 percent completion rate among all direct telephone contacts with respondents. Within the first random replicate, the overall response rate is already more than 80 percent.

#### *Survey Operations*

The questionnaire will be administered in two parts. Core items dealing with social and demographic characteristics and changes in them, self-assessments of health and well-being, social participation, and relationships with parents, siblings, and children, along with future aspirations and plans, are obtained in the telephone interview, which is being conducted by the University of Wisconsin Letters and Sciences Survey Center (LSSC). Items were selected for the telephone interview if their administration required many logical branches or if the items were not grouped with a long list of similar questions. The interview may be somewhat shorter, perhaps 45 minutes, for siblings who participated in the 1977 survey. Interviewers are using computer-assisted (CATI) techniques, with which the lab has long experience. The project staff provides initial telephone numbers to LSSC from its separate tracing activity, and is standing by to do additional tracing when numbers prove to be out of date. Other information essential to the telephone interview, such as rosters of children's and siblings' names needed for information updates, have been transcribed from the original 1975 questionnaires and entered in the computerized interview schedule database. Responses to occupation and industry questions, which are especially difficult to code, are routed from the field to our occupation coding section, and cases with incomplete responses are returned to the field within a day or two for a callback.

One useful feature of the CATI interview is the ability to introduce alternate forms or to sample selected questions at different rates in different internal replicates. For example, we are using two different series of questions about job authority, each administered to half the sample; we are asking a lengthy set of questions about depression and alcohol use of 80 percent of the sample; and we are asking about the current income of surviving parents in

half the sample. We may alter sampling rates of these and other questions as the fieldwork proceeds.

Because the telephone interview should not be too long, some of the social psychological, health, occupational, and social exchange data are being obtained with a mailed, self-administered questionnaire. Mail items tend to be groups of closely related questions with few logical contingencies and similar closed-ended response alternatives. The mailed questionnaire requires about 30 to 45 minutes to complete. LSSC is providing two remainings to encourage respondents to mail back their questionnaires. However, a subset of the items in the psychological scales is administered in the initial telephone interview, to avoid a total loss of information from those not returning the mail questionnaire. Appropriate statistical techniques will allow the resulting partial information to be included in structural models with measurement error, correcting for biases that would otherwise be intractable (Allison 1987, Allison and Hauser 1991). After two pretests of preliminary mail questionnaires, we carried out a final pilot test of the mail instrument with three waves of mailing, and we obtained an 80 percent response rate.

As explained above, we hope that respondents will grant us a limited, written waiver for the use of their Social Security numbers (SSN's) to obtain Social Security earnings data. This will permit us to use our existing files of Social Security data directly, and, more important, it will permit us to build earnings histories of women, to complete the earnings histories of men in the WLS, and to obtain additional data from Social Security records on disability, dependency, and death. Aside from the administrative requirement to have written waivers for access to these data, the SSN will also be important in linking the WLS to the National Death Index in future studies of differential mortality. We have SSN's for almost all of the males but for none of the females in the WLS; we have no waivers at all. We want to obtain waivers and additional SSN's without losing the good will of the sample.

Our tentative plan for obtaining waivers is as follows: During the telephone interview, we ask the respondent to give us his or her social security number (SSN). If the response to this request is negative, the matter will be dropped; if it is positive, as it is in some 92 percent of the interviews completed thus far, we will mail a waiver form after completion of the mail interview. The mailed waiver itself will be accompanied by a note inviting the respondent to call the principal investigator directly with any questions. We had originally planned to obtain waivers before completing the mail interviews, but delays in reaching an agreement with the Social Security Administration have precluded this design.

The replicate samples will be introduced sequentially into the interviewing, mail survey, and waiver processes, just as in the tracing operation. Aside from the advantages already mentioned, a smooth work flow and feedback on response rates, this design makes it possible to terminate data collection prematurely if costs run above budget; that is, it will be possible to reduce costs by lowering the size of the final sample without jeopardizing the quality of the data or permitting nonresponse rates to rise to an unacceptable level. The two thousand matched sibling pairs for whom we already have sibling interviews (from 1977) are in pre-existing subsets of the WLS; they will be introduced into the field operations near the beginning of the process, but not at its very beginning. That is, we want to be sure that everything is working smoothly before we begin to work on these key segments of the sample, but we do not want to wait so long that there is any chance of our terminating the field operations before their data have been collected. A similar internal sampling procedure was used successfully in the 1975 follow-up survey.

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2. Presented at the IASSIST 92 Conference held in Madison, Wisconsin, U.S.A. May 26 - 29, 1992.

3. We began this round of study with the intention of following only those individuals who had been interviewed in 1975. However, we found it possible to locate previous non-respondents, as well, and we now plan to follow and interview all surviving members of the original sample.

4. One might think of mental ability, educational attainment, or occupational prestige as general effects, whereas aptitude, personal contact with an entrepreneur, or training in cosmetology are local effects.

5. These data (with identifiers removed) have been placed in the public domain through the Data and Program Library Service of the University of Wisconsin-Madison. One exception is Social Security Earnings histories of men in the sample from 1957 through 1971, which were

obtained under conditions which preclude their distribution (or the direct access of the investigators to the data files in which they are contained). Two other exceptions are files of detailed characteristics of colleges attended and of the employers of the primary respondents in 1975; these are not confidential, but we maintain them separately from the master file.

6. The WLS data have been used in 4 research monographs, 23 doctoral theses, 11 masters theses, and more than 100 research articles or chapters in books. Sewell and Hauser (1992) review the study from the early 1960's to the present.

7. In the first 400 completed interviews, the rates of parental survivorship far exceeded our estimates: 55 percent of respondents had a living mother, and 26 percent had a living father. These cases represent the first 62 percent of persons to respond within a stratified random subsample of 650 primary respondents.

8. A pilot effort to relocate members of the Project Talent sample, carried out in parallel with our initial feasibility tests, provided unsatisfactorily low coverage.

9. The Wisconsin Longitudinal Study was supported continuously by the National Institute of Mental Health (MH-6275) from 1962 through 1982. During that period, the WLS also obtained support from the Social Security Administration (Social and Rehabilitation Service Grant No. 314) for linking and analyzing earnings histories and from the Spencer Foundation for the 1977 survey of siblings. From 1980 to 1986 the project was supported by NSF grants for studies of sibling resemblance (SES 80-10640) and for the documentation of machine-readable data (SES 83-19879). The WLS had no federal support from 1986 to 1991, and we have continued to work on analyses of family effects on achievement with support from the Guggenheim Foundation, the Volkswagen Foundation, the Graduate School of the UW-Madison, the Brody Foundation, the Spencer Foundation, and the use of core facilities of the Center for Demography and Ecology at the UW-Madison, which are supported by grants from the National Institute of Child Health and Human Development (HD-5876) and the William and Flora Hewlett Foundation.

10. This text covers only a few of the issues in recent WLS research. For a full review see Sewell and Hauser (1992).

11. The 1991-92 respondent tracing activity show a similar distribution of respondents between Wisconsin and other locations.

12. We had selected a brother or sister of these persons during the 1975 survey, but we could not afford to

interview them at that time.

13. These individuals were designated in the course of the 1975 interview with the primary respondents, and at that time their full name, address, age, sex, educational attainment, occupation, and industry were ascertained, along with the name of the last Wisconsin high school they were known to have attended. The last piece of information is helpful in finding mental test scores. Thus, while the records for these individuals will lack the self-reported information obtained in the 1977 sibling interviews, there is already some baseline information about them in the WLS files. Funding for this phase of the study has not been obtained.

14. Copies of the mail questionnaire and a list of questions in the telephone interview are currently available from the authors. At this time, there is no complete written text for the telephone interview, other than the script for the CATI program used in the survey (CASES).

15. With the exception of identifiable or confidential material, these data are now available from the Data and Program Library Service of the University of Wisconsin-Madison, 1180 Observatory Drive, Madison, Wisconsin 53706. We expect to release the new edition of the data through the Inter-university Consortium for Political and Social Research.

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