

Center for Demography and Ecology

University of Wisconsin-Madison

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National Survey of Families and Households:  
An Overview and Preliminary Assessment**

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# Work History Data in the National Survey of Families and Households: An Overview and Preliminary Assessment

## **Introduction**

Scholars interested in the study of the life course and aging have often remarked on the uneven mixture of theory, methods, and data that characterizes this research specialty. Although the life course perspective has developed considerable depth in its conceptual underpinnings and methodological resources, the pool of data in which theory and methods come together has been more limited (Campbell, Abolafia, and Maddox 1985; Campbell and O'Rand 1988; Treiman 1985). Confined to a handful of longitudinal surveys and a slightly larger (but no more organized) set of replicated cross-sectional studies, life course research is often hindered by a lack of temporal variation in the existing database. The lives of individuals represented in longitudinal surveys frequently are defined by ostensibly arbitrary age-groups and compartmentalized into stage-like processes of "youth" and "maturity" or "old age," while cohort-comparisons are restricted by the limited historical scope of the data archives. These data collection strategies probably reflect, but also reinforce, long-held beliefs about immutable "life-cycle" processes that govern life-course transitions (O'Rand and Krecker 1990) and the tendency to adopt ahistorical or cohort-centric approaches to aging and the age stratification of the population (Riley 1987).

Of particular interest to those who study work careers and work-related transitions has been the absence of complete and continuous work histories that would enable researchers to identify career pathways and relate these structures to participation and statuses in other life

domains (Elder 1985; Treiman 1985). For the most part, existing data sources lend themselves to the study of the early work career and its relationship with a tightly concentrated set of events that define early adulthood (e.g., completion of schooling, marriage, parenthood). The greater dispersion of events over the remainder of the life course and their (ostensibly) looser coupling with events in other role domains suggest at once the data requirements and the challenges for future research.

The National Survey of Families and Households addresses one of these data requirements by collecting retrospective reports on periods of employment and unemployment spanning the respondent's entire life course. The purpose of this paper is to provide an overview and preliminary evaluation of these data, an exercise that is warranted in light of their temporal scope. Among persons who are middle-aged or older at the time of the interview, this work-life history may cover a period of several decades and makes data from this cross-sectional-retrospective design comparable in breadth to panel surveys that have been developing for many years (e.g., the National Longitudinal Surveys of Labor Market Experience). Thus, the quality of these reports and how well they meet the demands of life course research are of some interest.

The aims of this paper are threefold: (1) to describe how the work histories were collected and discuss features of these data that may bear on their quality as well as their utility for analyses; (2) to examine the degree of precision with which respondents date labor force events -i.e., whether they can identify the month and year, the season and year, or only the year of the event and how this varies across characteristics of respondents and of the events themselves; and (3) to assess the historical representativeness of the employment experiences of survey respondents. That is, are the employment patterns of persons in the sample typical of those recorded for their birth cohorts? I focus specifically on the work histories, but, where possible, I compare their

characteristics with a previous investigation of the survey's marital histories (Sweet 1990).<sup>1</sup>

### **Work History Data in the National Survey of Families and Households**

The National Survey of Families and Households (NSFH) is a national probability sample of persons age 19 and over who resided in the United States in 1987-1988, excluding persons who lived in institutions. The sample contains 13,017 respondents, 3,374 of whom represent oversampled populations such as minorities, single parent families, and cohabiting couples (see Sweet, Bumpass, and Call 1988 for a detailed discussion of the survey's design and content). The subsample of interest here includes persons who have ever been employed for at least six months (N=12,072). The six-month selection criterion derives from the structure of the NSFH instrument, which does not ask respondents about work intervals of shorter duration.

Work history data are collected in the form of *labor force entries* and *labor force exits*. Respondents are asked to report the month and year in which he or she first worked for pay for at least six months and, subsequent to that date, when he or she first stopped working for at least six months. Four questions comprise the work history portion of the survey:

- (a) Not counting when you were primarily attending school, in what month and year did you first work for pay for at least six months?
- (b) After that, when was the first time you stopped working, or were out of work, for at least 6 months?

The following variations on (a) and (b) are repeated until all spells of employment and unemployment have been recorded.

- (c) When did you next work for a period of at least six months?
- (d) And when was the next time you did not have a job for at least 6 months?

Three characteristics of this design should be noted. First, the temporal scope of these life history records is not defined *a priori*. All periods of employment meeting the 6-month criterion are recorded without conditioning on age, completion of schooling, "adulthood" (however defined) or some circumscribed period, such as the previous five years. This feature of the work histories, in combination with the variation on age and gender ensured by the overall sample design, is a notable advantage of these data. Unlike other, frequently analyzed, survey data that capture employment experiences for a circumscribed period of time or for persons of a specific age or age-group, NSFH includes complete and continuous records of employment for persons from a wide age-range as well as for men and women. The absence of such characteristics in other surveys can hamper efforts to compare the career trajectories of men and women or examine these processes over the full range of the individual life course.

Alternatively, some caution is warranted on this point. Four simple questions embedded in a much longer survey instrument -- an instrument that also includes several other retrospective histories -- present respondents with the task of recounting the sequence of events that comprise their entire working lives. For older respondents whose early labor force experiences may be located in the remote past or for persons whose work lives are dotted by multiple entries into and exits from the labor force, this historical record may be marked by more than a few omissions, partial reports, or miscalculations. The extent to which individual age and the passage of time contribute to spotty reports will be addressed later in this paper.

Second, these are histories of employment and unemployment.<sup>2</sup> They do not capture the sequence of jobs that an individual has held nor do they differentiate among employing organizations. If a respondent has worked for three different employers over a period of time but none of these moves was separated by an episode of unemployment lasting at least six months,

then the NSFH work history records one spell of employment rather than three. One implication of this approach is obvious: research problems focusing on elements of work careers such as mobility between jobs or across organizational boundaries lie outside the purview of NSFH. Likewise, it is not possible to specify fully models of labor force outcomes or life course transitions that attach importance to several different temporal dimensions (e.g., work experience, job tenure, and employer tenure in models of career attainment).

Aside from these analytical limitations, this design treats labor force entries and exits as more salient dimensions of employment than attachments to specific employing organizations or positions within those organizations. It encourages respondents to consider each segment of their work lives as elements of a general class of labor force experiences -- working or not working-- and suppresses potentially distinctive characteristics of a work episode. In the parlance of cognitive psychology, work life experiences may be *encoded* in memory in one, fairly specific format while the question seeks to *retrieve* this information in another, more general form. To the extent that organizational- or job-specific experiences differentiate separate spells of employment, questionnaire designs that exploit these distinctions may produce higher quality reports (Schaeffer, forthcoming; Sudman and Bradburn 1974).

To be sure, a history of employment and unemployment will provide a more parsimonious summary of the work career than a job or employer history, but it may not necessarily involve an easier cognitive task for the respondent. For example, do individuals organize their work lives in terms of working for Company A, moving to a position in Company B, getting a promotion at Company B, and later accepting a job offer from Company C? Or, are individuals more apt to think of when they have worked and when they have not, regardless of their ties to different jobs or employing organizations over this period of time?<sup>3</sup> There is some evidence to suggest that

some NSFH respondents confused the two types of events; but, since this generally *adds* rather than subtracts events, researchers may be able to address this issue analytically.

Third, the collection of a work history retrospectively requires that the respondent "walk through" the sequence of employment events that define his or her work career. Yet, survey designs differ in whether they ask a respondent to walk *forward* through time from the past to the present or *backward* through time from the present to the past. The former approach begins with the first employment situation and enumerates the events that follow; the latter approach starts with the present state of employment and identifies (in reverse order) the sequence of events that led to that situation. The "past-to-the-present" design lends itself to longitudinal studies which can update information from prior interviews and condition follow-up questions upon any change in status. Retrospectively collected life histories often (but not always) pursue the "present-to-the-past" strategy, especially if the life history record is constrained by arbitrary time-points (e.g., the five years preceding the interview date). Nevertheless, these different approaches cut across survey design and the choice of one over the other may be more closely associated with the research interests that guide the study in general. The implications of adopting one approach over the other for data quality are unclear and impossible to examine in the present context. Quite possibly, they vary in complex ways with the types of events that are recalled, the frequency and spacing of their occurrence, their interdependence with other socially significant events, and the span of the observation period, as well as characteristics of the respondents.<sup>4</sup>

### **Precision and Historical Representativeness as Characteristics of Data Quality**

I examine two aspects of the NSFH work history data: (a) the precision with which respondents date labor force events, including the extent to which precision is sensitive to characteristics of individuals as well as the events or employment spells themselves; and (b) the



historical representativeness of respondents' employment experiences. It should be emphasized at the outset that neither of these tasks speaks directly to the more traditional concerns of reliability and validity. In the absence of independent accounts (e.g., matched records with employing organizations) and an additional point of measurement, the validity of individual responses cannot be confirmed nor can the consistency of reported recollections be established. Nevertheless, confidence in these data will be enhanced if respondents are able to date labor force events with some degree of precision and if their employment patterns mirror those of their birth cohorts.

Moreover, precision and cohort-representativeness may be minimum prerequisites for life-course research. Perspectives on the life course emphasize the importance of the timing, ordering, and spacing of event sequences that define individual trajectories (Elder 1985; Hogan and Astone 1986) as well as variation in these sequences among cohorts located in different social and historical space (Elder 1985; Riley 1987). Initial interest in the variable ordering of transitional events in young adulthood (such as school completion, labor force entry, marriage, and parenthood), and the consequences of these patterns for middle- and later-life outcomes (Hogan 1978, 1981; O'Rand and Henretta 1982) continue to guide more recent efforts that highlight the complexity and long-term implications of early event sequences (Rindfuss, Swicegood, and Rosenfeld 1987; Heaton 1991; Henretta, O'Rand, and Chan 1993). Due, in part, to the development and diffusion of dynamic models (Tuma and Hannan 1984), even preliminary answers to questions about the timing and ordering of life course transitions as well as the durations of intervening states demand data that identify the occurrence *and* the date (or age) of events. If survey respondents are unable to attach specific dates to events, or if this ability varies widely across different kinds of experiences, then retrospective reports such as those contained in NSFH will be a limited resource for the continued development of this research program.

Second, life-course research often takes the form of analyzing the experiences of one or more cohorts, relating these experiences to the changing historical context, and identifying ways that they may reshape opportunity structures for future cohorts (Modell 1989; Riley 1987). The extent to which the NSFH work history data will be useful for such analyses can be examined by aggregating across individual work episodes and comparing life-time employment patterns with figures from Census or other representative reports. Such an investigation will not establish the accuracies or inaccuracies of any one individual record, but it should uncover any systematic errors of omission or misplacement that might occur among groups of respondents faced with similar obstacles to recall (e.g., length of the recall period).

In the next section, I begin by examining the precision with which respondents date labor force events and how this varies across characteristics of individuals and their employment experiences. Then, I address how well these reports match historical patterns of employment. Before concluding, I discuss characteristics of the NSFH work histories that warrant caution for some types of research questions.

### **Precision of Labor Force Reports in NSFH**

Labor force entries and exits are recorded in one of four degrees of precision. Ideally, respondents indicated the month and year of the event. If they were unable to name the month, interviewers probed for the season of the year in which the event occurred and, failing that, sought to identify if it happened during the first or last half of the year. At a minimum, we would like to know in what year a spell of employment began or ended, but in some cases respondents could not recall even this information.

Table 1 shows the distribution of responses across the four levels of precision--(a) month and year given by respondent, (b) year and season or portion of year given, (c) year given, but not

month or portion of year, and (d) no year given. Labor force entries and labor force exits are dealt with separately in this table and throughout the analyses.

The figures in Table 1 indicate that highly precise reports are inversely related to the number of events. At most, about 70 percent of respondents report the month and year of labor force events, and this figure drops to almost one-half or slightly more by the fifth event. The proportion of highly precise reports decreases sharply to about 40 percent thereafter, though there are also fewer respondents reporting more than six labor force entries or exits, and only one reports ten such events.

Second, the "season" or "portion of the year" category captures a considerable proportion of responses and plays an important role in enhancing the quality of the work histories. In the absence of these interview probes an additional 21.2 percent of all labor force entries and 16 percent of all exits would have recorded only the year of the event. As a result, the work history data would have been distinctly lop-sided with the vast majority of events located by month and year while almost one-third of all entries and a similar fraction of exits would be associated only with the year of the occurrence. Similar success with the probe for "season" or "portion of the year" was reported for the marital history data (Sweet 1990). Clearly, allowing (or encouraging) respondents to specify an intermediate level of precision produces a more complete record of life events and helps to ensure the utility of data for analyses.

Table 1 supports mixed statements about how the precision with which respondents date labor force experiences varies across the two types of events. The differences are most discernible by comparing the figures for entries and exits of all orders. However, they persist among comparisons among events of the same order, at least through the sixth event where the majority of the cases fall. For example, slightly higher proportions of labor force exits are dated

only to the year (11.7 percent versus 9.8 percent) or provide no date information at all (2.0 percent versus 1.1 percent). Alternatively, respondents consistently assign the month and year to a slightly higher proportion of their labor force exits than their entries, fleshing out their reports on the latter by designating the season of the event.

In part, this latter discrepancy reflects the interplay between, on the one hand, the well-known sensitivity of respondent recall to the passage of time and, on the other hand, the relationship between time since an event and the type of event. Labor force exits will always occur after entries of the same or lower order.<sup>5</sup> Since the events summarized in Table 1 were selected to maintain this temporal logic, it is not surprising that entries are reported less precisely. That is, censored observations -- spells of employment in which the respondent is currently working and therefore not at risk of reporting a date of exit -- are not included in the figures of entries or exits in order to maintain a comparable set of events across both analyses. The implications of this censoring become more apparent when the entries into current spells are included in the analysis. The proportion of respondents reporting the month and year of labor force entries increases by six percentage points and now exceeds the level of precise reports for labor force exits. (See the row labelled "all orders, including the current spell.")

Career Transitions. Table 1 also identifies the precision with which respondents report the dates of their first, last, and longest employment spells. These periods of labor force participation correspond to three distinct aspects of the working life course -- entry into the work career, the employment circumstances from which individuals retire or exit the labor force, and their "career job" or most stable work experience, respectively. Distinguishing between the longest or career spell of employment and the last work experience, as well as their duration and timing, has become important for the study of later-life work transitions (O'Rand, Krecker, and Henretta

1993; Quinn, Burkhauser, and Myers 1990; Ruhm 1990) as well as other events that may be affected by career trajectories, such as morbidity and mortality (Moore and Hayward 1990; Mare 1990).<sup>6,7</sup>

The initial career experience is captured by the first labor force entry and exit; the relatively high degree of precision that characterizes the dating of these events has already been discussed.<sup>8</sup> Similar figures are reported in the last two pairs of rows of Table 1 for the longest and last work spells, respectively.

The distribution of responses for the longest and last work episodes is limited to persons age 55 or older. This age-group is most relevant for studies of work and work-related transitions in later life. Also, if younger persons are included in this analysis, a large proportion of these spells are synonymous with work career entry or with current work experiences. The effects of selecting older respondents and examining less recent events are readily apparent: less than two-thirds of the reports provide the month and year of events associated with the last and longest work experiences and about 15 percent specify only the year of the event. Alternatively, all but two percent of these individuals are able to provide at least the year of the event, suggesting that relatively little data is lost entirely. Assuming a set of decision rules that allow for some "temporal slack," analyses that emphasize these elements of the work career will have little difficulty establishing their location with respect to the boundaries of the working life course.

Gender Variation in the Precision of Labor Force Reports. The greater discontinuity of women's work careers has become part of the empirical foundation that informs research on a wide variety of problems across several specialty areas and the social sciences generally. However, in spite of the consistent differences in the complexity of men's and women's careers, the characteristics of their retrospectively reported work histories are remarkably similar. At least

insofar as precision is a requirement for comparing the arrangement of events over the life course of men and women, it appears that differentials on this dimension will not compromise analyses of NSFH data.

Tables 2 and 3 display the distribution in the precision of work history reports for men and women, respectively, and reveal few substantial differences. Although a larger proportion of women experience multiple work spells, their ability to date these events remains quite high: even at the fourth event, over 60 percent identify the month and year of the entry and two-thirds are similarly precise about the exit. In fact, among higher order events, women tend to be more specific in their responses than men. Quite possibly, the greater interdependence between women's labor force participation with events in other life domains (e.g., childbearing and childrearing) facilitate the recall and dating of work episodes.

An exception to the similarities across these distributions arises with respect to the longest and last work spells. In both instances, men date these events more precisely, while women's reports lag by 7 to 11 percentage points. Several factors may contribute to this difference. For example, the greater differentiation of women's work careers -- more distinct spells of work, shorter spells, dispersion of labor force participation across a longer span of time -- increases the likelihood that any single spell of employment will be reported less precisely merely by chance. In addition, the complexity that marks women's careers in early and middle adulthood (e.g., Sørensen 1983; Waite 1980) is also apparent in later life, where almost one-quarter of women leave their "career" or longest jobs for another employer prior to stopping work altogether (O'Rand, Krecker, and Henretta 1993; also see Honig 1985). The combination of these factors may mean that women's "final" episodes of work or those corresponding to a "career" employment experience are less well-defined and vulnerable to less precise recall.<sup>9</sup>

## **Variation in the Precision of Reports Across Characteristics of Individuals and Events**

The analyses summarized in Tables 1-3 describe the range of responses across events of different type and order, but they do not tell us whether, and to what extent, the level of precision is associated with social and economic characteristics of the respondents, aspects of the work episodes themselves, or the relationship between the two. Research on response effects in surveys suggests that the quality of retrospective reports is sensitive to, among other factors, the length of the recall period, whether the events of interest are important social markers, and the relative complexity of the sequence (e.g., Eisenhower, Mathiowetz, and Morganstein 1991; Pearson, Ross, and Dawes 1992; Sudman and Bradburn 1974). The significance of these factors holds across a wide variety of events -- e.g., marriage, fertility, education, employment, earnings and other sources of income or financial support (Freedman *et al.* 1988; Davis and Smith 1980; Duncan and Mathiowetz 1985; Schaeffer, forthcoming; Smith and Klaeser 1983). While the precision with which respondents date events is only a distant cousin of the reliability and accuracy of their reports, we might expect similar factors to operate. In particular, the potential importance of the length of the recall period and the complexity of the work history guide the following analysis.

I use a multiple classification framework that adjusts category-specific means for the associations among the independent variables to examine differentials in the precision of reports for labor force entries and exits. In addition to individual characteristics such as age, gender, race or ethnic group, I include variables that tap the type and complexity of the work history (e.g., full- or part-time employment, number of spells) as well as spell-specific characteristics (e.g., duration and type). The former set of variables is measured at the individual-level and tells us something about how the complexity of a worker's career affects the precision of reports. The latter set of

variables is measured at the level of the event or the spell and will indicate if retrospective reports are sensitive to the quality of a particular employment experience. For example, are full-time spells reported more precisely than part-time spells, net of individual characteristics?<sup>10</sup>

Tables 4 and 5 present the results from the multiple classification analyses. Table 4 shows the results for an analysis of labor force entries while Table 5 contains the corresponding figures for labor force exits. Both analyses focus on variation in specifying the month and year of a labor force event.

Not surprisingly, precise reports are concentrated among younger persons for whom even the first employment episode is a relatively recent experience. Nevertheless, while differentials with respect to this group increase with age, the proportion of events dated by month and year remains at or slightly above average for respondents through age 49. The figures are less stable at older ages: they drop slightly among persons age 50-59, increase a bit for respondents 60-64 years old, and then decrease more steadily. Nonetheless, the differentials with the youngest age-group are substantial and range from 26 to 40 percentage points. This gap narrows only slightly (21 to 36 points) among entries after controlling for work career and spell characteristics, while these covariates have little effect on the age differentials in reports of labor force exits.

There are also sizeable differences by level of education: only one-half of the respondents with less than a high school education specify the month and year of labor force entry. A gap of 21 points separates this group from persons with a high school degree, and there is an additional 13 point differential with the highest level of educational attainment. More respondents (over one-half) with less than a high school education date their labor force exits precisely, but a similarly large gap separates them from their counterparts with a high school education or more. Aside from the general inverse relationship between education and data quality (Sudman and



Bradburn 1974), some of this variation may reflect the more tenuous attachment to the labor force among workers with fewer educational resources. This group is more likely to be employed in less secure and lower paying jobs, and is at higher risk of experiencing more frequent and longer spells of unemployment. All of these factors contribute to the complexity of the work career and may make it more difficult to identify specific points of labor force entry and exit.<sup>11</sup>

There are few remarkable differences among other individual characteristics. Black respondents are separated from other race/ethnic groups by gaps of one to six percentage points. Persons who worked only full-time during their work lives are almost indistinguishable from their counterparts who never worked full-time or who have been employed in both full- and part-time positions. One and two percentage point differences across these groups disappear after controlling for other variables.<sup>12</sup> Likewise, there are no gender differences in labor force reports net of other variables.

Turning to the characteristics of *spells* rather than *individuals*, a few additional sources of variation emerge. The results shown in Table 4 indicate that full-time spells are apt to be dated more precisely than part-time spells or those spells that cannot be unambiguously classified, and the more recent "last spell" is somewhat more likely to be designated by a month and year than the "longest spell."<sup>13</sup> The effects of spell duration are more complex. In the absence of controls for age and event order, the likelihood of obtaining a precise report declines at longer durations, especially among labor force entries. The distribution of the adjusted means, however, is bifurcated: very short spells of less than a year duration *and* much longer spells of 20 years or more are equally likely to be dated to the month and year. Among labor force entries, the inclusion of other covariates generally reduces variation across all spell duration as the figures hover near 70 percent. This bifurcation is more apparent among labor force exits (Table 5) where

the share of precise reports among spells lasting 20 years or more exceeds that for very short spells by nine to eleven points. In contrast, spells of intermediate length are somewhat less likely to be dated precisely.

Variation in Precision by Length of the Recall Period. The final set of results in Tables 4 and 5 -- differentials in precision by event order -- do not lend themselves to straightforward interpretation. In part, they represent how reports vary with the differentiation of work careers. The inverse relationship between event order and precision is consistent with the general expectation that as the number of distinct work episodes increases, respondents will be less able to attach specific dates to each transition. Conversely, higher order events will be *more recent* events. The shorter recall period would lead one to expect a positive, rather than a negative, relationship between event order and precision. In short, it appears that by representing the effects of time only indirectly, event order may confound discontinuity of work patterns and the elapsed time since an event.

To try to disentangle these components, I estimated models that included an additional set of variables that represent explicitly the time since a labor force event. The results, shown in Tables 6 and 7, reveal the significance of the recall period, net of event order, as the length of time since the labor force event produces the largest differentials in reports displayed thus far. Controlling for other variables, a gap of 38 percentage points separates the earliest from the most recent events -- a period of 60 or more years -- while even a 15-year period (1970-74 to 1985) produces a 24-point differential. The primary effect of introducing this block of variables is to reduce the size of the age differentials. The gap in precise reports between the youngest and oldest age groups drops from 40 to 9 points for labor force entries and 38 to 12 points in labor force exits. The pattern of results for the other variables changes very little. There is still an

inverse relationship between precision and event order, suggesting that respondents can report initial entry into the labor force quite well, but their ability to do so declines as work patterns become more complex.

In summary, the NSFH work histories are characterized by a fairly high degree of precision. The majority of responses specify the month and year of labor force event while only a very small percentage of cases lacks any such information. With the exception of differences by level of education, reports are consistently precise across characteristics of individuals and the complexity of their work careers, while indicators of time elapsed since an event (age, event order, time of event) produce the greatest variation in reports. A previous analysis of marital history data in NSFH provides a point of comparison (Sweet 1990). Not surprisingly, the level of precision with which respondents can date labor force entries and exits does not match their ability to report marriages and marital dissolutions. For example, over 90 percent of survey respondents identify the month and year of first and second marriages, and over 75 percent are equally precise about the fourth and fifth marriages compared with figures of roughly 70 percent and 55 percent for similar labor force events (Sweet 1990).<sup>14</sup> Nevertheless, the quality of the employment reports is sufficiently high that researchers should have little difficulty in establishing the relative ordering of events and identifying the timing of labor force transitions with respect to other life course processes.

### **The Representation of Cohorts in the NSFH Work Histories**

The ability of survey respondents to date events with a fair degree of precision permits researchers to examine the timing and sequencing of life course transitions. An additional challenge for scholars involves linking these event sequences and the life course pathways they define with the broader social and historical context in which they are embedded. That is, not

only is the timing of a transition relative to other individual events, statuses, and experiences consequential, but also its location with respect to a larger, historical clock. In the context of the work history data and the study of work careers, efforts to articulate linkages between these two levels raises the question of how closely these retrospective reports mirror the employment experiences of the population. I examine this issue by comparing employment rates over the life course of men and women in NSFH with those reported in the Census or by the Bureau of Labor Statistics for their corresponding birth cohorts.

I define 5-year birth cohorts from 1911-1915 to 1946-1950 and, using the work history data, estimate age- and gender-specific employment rates spanning the adult life course. Published statistics from the decennial Censuses and intercensal data from the Bureau of Labor Statistics provide baseline figures against which the sample estimates can be compared.<sup>15</sup> These data are presented for all eight cohorts in Appendix Tables 1 and 2 for men and women, respectively. The data for the oldest cohorts are plotted in Figures 1-4, and the differences between NSFH and BLS/Census estimates for all cohorts are reported in Table 8.

At the outset, we can expect NSFH employment rates to be higher than the official figures. All of the employment rates are calculated for the month of March of the relevant year. Because NSFH does not record spells of unemployment of less than six months, persons who were not working during March but returned to work within six months would be counted as employed.<sup>16</sup> This expectation is born out in Figures 1-4 which reveal consistently higher estimates of employment by NSFH.

With the exception of one or two data-points, the employment profiles based on NSFH data are higher than those derived from Census or BLS reports. Among men however, the gaps are often quite small and probably fall within the realm of random error. The corresponding gaps

for women are generally larger than those for men in each cohort. This may reflect the greater discontinuity, on average, in women's patterns of labor force participation. Greater volatility in work patterns in tandem with the 6-month criterion used in the NSFH instrument, and the relative sensitivity of monthly BLS reports to short-term changes in labor force status should produce larger differences between the estimates. Nevertheless, the NSFH work histories clearly capture the *trends* in women's (as well as men's) labor force participation over the life course; and, except for the two oldest cohorts, the sample estimates do not depart sharply from the population figures.

The magnitudes of the differences between the sets of estimates and how they are distributed across birth cohorts and age-groups are shown in Table 8. These figures are simply the differences between the NSFH estimates and the corresponding BLS or Census estimates. Positive numbers indicate the NSFH estimate is higher while negative numbers point to instances in which the sample estimates are lower. The distribution of these residuals demonstrates how consistently the NSFH data predict employment across ages and birth cohorts and how closely they approximate official statistics. This is especially true among men where, with one exception, all of the sample estimates are within 10 percentage points of the baseline data and the majority of data points are within 5 or 6 percentage points (see upper panel of Table 8). The number of instances in which the NSFH and BLS or Census estimates are nearly identical (e.g., separated by only 1 or 2 points) is both surprising and encouraging in light of the observation period and the small sample sizes from which the NSFH estimates are derived.

Conversely, these factors (length of recall, sample size) take their toll at key points in the life course, at least among some cohorts, as the largest residuals are associated with age groups that frequently are the focus of analysis. For example, among men in the 1911-1915 birth cohort,

the sample data overestimates the proportion of the population employed at ages 60-64 by almost 20 percentage points. This result is discouraging in light of the relationships between this age group and the transition into retirement, but it must also be placed in context. The NSFH estimate is based on a very small number of cases (N=30 for that cell) and selection processes of mortality and morbidity will be greatest for this cohort.

The distributions shown in the lower panel of Table 8 confirm the larger differences in the estimates for women that were first revealed in the graphs. Although the two sets of figures are quite close in several instances, these residuals tend to be larger than those for men, especially among the two oldest cohorts. In addition, key or transition-prone age groups more frequently have sample estimates that depart from BLS or Census figures by fairly wide margins of 10 or more percentage points (e.g., ages 55-69 for the oldest cohorts). Although the sample sizes on which the NSFH estimates of women's employment rates are larger than they are for men, it appears that the work history data do a poorer job of matching their patterns of labor force participation. Aside from any gender differences in the reporting of labor force events, the greater discontinuity of women's careers and their higher risk of part-year or short-term employment probably exacerbates differences between the NSFH data, which focus on relatively longer spells of work, and the monthly data from the Bureau of Labor Statistics.

### **Pandora's Box: Some Final Caveats and Considerations**

In spite of the quality of the NSFH work histories as reflected in their precision and cohort-representativeness, they are not without a few surprises. Life history data of one form or another (e.g., work, marriage, residence) often contain inconsistent, if not theoretically impossible, sequences of events. How or when these irregularities develop between the time of the initial query and the production of the final set of data is not always clear. In the case of

NSFH, the anomalies are neither unique nor extraordinarily serious. Although in and of themselves they do not invalidate the entire work history for all or any one respondent, they raise doubts about the accuracy of some events as well as cautionary flags for some kinds of analyses. At a minimum, they contradict the "rules" contained in the survey instrument.

Recall that the work histories are collected by asking respondents to report on periods of employment and unemployment of six months or more, not including periods when they were primarily attending school. Despite the qualifying statement about school attendance, a sizeable number of cases report labor force participation at unusually young ages. For example, 6.4 percent of all entries and 10.6 percent of all first entries into the labor force occur before the age of 16 (N=1,277). The vast majority of these early entrants are between the ages of 12 and 15: only 1.5 percent of initial entries correspond to ages younger than 12 (N=186), though five of these instances correspond to dates at or prior to the respondent's birth. Similar circumstances arise among labor force exits, but they are fewer in number (N=159 exits before age 16).<sup>17</sup>

How one deals with these cases may depend in part on what role the work histories play in an analysis. If they provide the raw material for measuring individual work experience or "human capital" in the form of total years worked, then the consequences are less serious than they might be for an examination of career entry. In the case of the latter, analyses would benefit from a more careful scrutiny of the work history data for the age group of interest as well as the relationships between periods of work and schooling. Notably, reports of early ages of work are not limited to older persons whose retrospective histories are likely to be marred by telescoping or other memory effects. The current ages of individuals who entered the labor force before age 16 range from 17 to 95 (mean=46), with 40 percent of the reports occurring among persons age 35 or younger at the time of the interview.

If the history data are used primarily to summarize the work career, the available options are more numerous and easier (safer) to implement. One obvious and convenient correction for a summary measure of work experience is to reassign "premature" entries and exits to age 16. One could argue that the respondent's answer indicates that he/she was working at a very young age, but the report errs on the side of youth. The reassignment to age 16 does not represent the "true" age, but it is probably a closer approximation. Alternatively, there is evidence that some of these work episodes are "real" employment experiences, usually in such activities as "delivering newspapers" or "helping in the fields" on the family farm. Although information on *what* the respondent was doing was not solicited, in some cases it was offered and jotted down in the margins of the questionnaire by the interviewer. However, it is impossible to identify such employment circumstances systematically or to know whether they apply for all instances of early labor force participation.<sup>18</sup>

A final consideration involves the distinction between a job or employer history and a history of labor force participation. The NSFH instrument is designed to elicit information on periods of labor force participation regardless of mobility between different jobs or employing organizations. In spite of this emphasis in the questionnaire, at least some respondents appear to organize their work lives in terms of jobs held or employers worked for, and their work histories reflect this level of detail rather than simply labor force entries and exits. This distinction is evident in the original questionnaires where some, but not all, of these job histories were reduced to labor force histories by eliminating (through editing) obvious job transitions that did not involve lengthy intervening periods of unemployment.

Examining the original, hard copy of the questionnaire is neither a feasible nor a desirable strategy for determining how many and which of the cases confound jobs with labor force



participation. More generally, the potential scope of this issue is revealed by the presence of overlapping work spells or intervals of less than six months between work spells. A relatively small proportion of respondents (N=123) specified one or more labor force entries as occurring prior to the exit from the previous spell, and these accounted for only 1.6 percent of all completed work episodes. But, entries and exits that are separated by less than a full month are more numerous, accounting for 6.1 percent of all completed spells, and the intervening period is less than six months in another 6.1 percent of spells. Overall, 13.85 percent of all completed work episodes lend at least the appearance of a reported job or employer history rather than the more general history of labor force participation.

Obtaining a consistent history of labor force participation rather than a job or employer history is ostensibly quite simple. For example, one can ignore entries and exits that occur within a six-month period of each other. Or, more conservatively, entries and exits occurring in the same month can be collapsed into the preceding spell of employment. However, this will significantly diminish the amount of variation in the data and, in some instances, reduce a work-life to a single episode of employment. Whether obtaining this consistency merits sacrificing a nontrivial proportion of detail will probably vary across research problems and analytical strategies.

## **Conclusions**

Work history data in the NSFH are similar in scope to those provided by other data collection projects that have been developing for several decades. They represent the timing and ordering of transitions between states of employment and unemployment over the entire life course; and, in combination with variation on age and gender ensured by the overall sample design, they provide opportunities to examine career trajectories that are unencumbered by *a priori* designations of "life-cycle stages." Admittedly, neither NSFH nor any other survey of a

similar design can accomplish in one fell swoop what longitudinal projects do with multiple snapshots of a work-life. The survey lacks the detailed information on occupational and employer contexts that is integral to many research problems, and its retrospective design often will not illustrate the processual aspects of life-course transitions. However, the major comparative advantage of NSFH for empirical research does not derive from the characteristics of the work histories in and of themselves, but rather their presence in a single survey along with other components of a life-course trajectory (e.g., marriage and fertility histories). This feature makes it possible to locate episodes of employment and unemployment relative to experiences and transitions in other life domains.

Despite the considerable burden associated with recounting years or, in some cases, decades of labor force participation, the analyses indicate that these data are of fairly high quality. The vast majority of labor force transitions are dated with a high degree of precision, and only a very small proportion lack any information on the date of occurrence. Although the likelihood of specifying a precise date varies along dimensions frequently associated with recall errors (e.g., education, age, length of recall, sequence complexity), it is consistent across men and women workers as well as distinguishable aspects of work careers (e.g., stable or "career" spells of employment). Perhaps more important, a second analysis established that, at least at an aggregate level, the NSFH data provide strikingly good estimates of employment over the life course of men and women from a wide range of birth cohorts. While some individual reports are clearly inaccurate and contain errors of misplacement, it is also evident that the life-time employment patterns of several cohorts are well-represented in NSFH.

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## NOTES

1. The National Survey of Families and Households also collected an abbreviated work history of the primary respondent's spouse or partner. The spouse/partner was asked to identify whether or not he/she worked at all in each of the years between 1970 and the year of the interview (1987 or 1988). If so, then the individual was also asked if this was primarily full-time or part-time employment. I do not examine the spouse/partner data in this paper.
2. For ease of presentation, I use the terms "employment" and "labor force participation" interchangeably. Likewise, I do not distinguish among "unemployment," "not working," and "not in the labor force." Strictly interpreted, persons who are employed as well as those who are looking for work (unemployed) are labor force participants. NSFH, like many other retrospectively collected data, does not include the questions necessary to distinguish between persons who are unemployed and those who are out of the labor force.
3. These statements paint a picture of employment histories that is far simpler than reality. In truth, the sequence of events that define a work career can be highly complex and marked by many labor force entries and exits as well as multiple job-holding, overlapping job spells, or seemingly trivial shifts between positions within an organization. Almost all surveys adopt one or more rules that reduce this complexity. For example, they may impose a minimum tenure requirement (e.g., six months, one year), record only "main" jobs, ignore intra-organizational job changes, identify only the first- or last-held positions within an organization, or some combination of these criteria.
4. The ideal approach for collecting life histories may involve a mixture of these strategies that also exploits interdependencies among events across life domains. For example, the "life history calendar" may begin by asking respondents to identify events at either end of an observation period, but it also encourages them to treat the life history as a mosaic rather than a continuum. As such, respondents are free to roam forward and backward over the time-line of their lives as well as across life domains (e.g., work, residence, marital events) in order to facilitate the recall and dating of events (Freedman *et al.* 1988). Unfortunately, several disadvantages of this approach may outweigh its usefulness in some instances -- e.g., longer interviews, need for more interview training, and general unwieldiness in a large and diverse sample (see Sweet, Bumpass, and Call 1988, pp. 14-15). For discussions of the "forward" and "backward" approaches as well as other nonlinear (e.g., clustering) effects of time on retrospective reports, see Bradburn, Shevell, and Rips 1987; Davis and Smith 1980; Eisenhower, Mathiowetz, and Morganstein 1991; Pearson, Ross, and Dawes 1991; Smith and Klaeser 1983).
5. By definition, the exit from one employment spell will always occur after the entry into that spell. In addition, because NSFH excludes nested employment spells (e.g., multiple job-holding or overlaps between start and stop dates), a labor force exit will always occur later in time than entries and exits of lower orders, and earlier in time than entries and exits of a higher order. This kind of relationship is not typical of work histories that record *job* or *employer* changes or allow employment episodes to be fully or partially nested.
6. Respondents were *not* asked to identify their last or longest work experiences and then report the dates of these events. I established which of the reported work episodes was the



longest by calculating the duration of each spell. For censored spells, the date of interview was used as an end date. The last spell is simply the most recent labor force entry and the corresponding exit.

7. Unlike the other results reported in this paper, I retain censored observations in the analysis of entries into the longest or last spell. Eliminating spells in which the respondent is currently working severely reduces the size of these cells.

8. NSFH respondents are able to date their entry into the labor force with a fairly high degree of precision, but many of these reports correspond to unusually young ages (e.g., age 10 or younger). I discuss this issue later in the paper.

9. This difference cannot be fully attributed to the older age distribution of women respondents in this age-group (age 55 and older). In additional analyses, I examined the distribution of responses for men and women age 55-75, thereby excluding the oldest persons for whom episodes of employment will be most removed from the present context. The proportion of precise classifications increases for women by about four percentage points, but the figures for men increase by a similar amount, leaving the gender differential unchanged.

10. Spell characteristics are not entirely independent of individual work career complexity, especially at the margins. For example, since NSFH excludes nested employment spells, individuals of a given age who have one or more long or very long spells (e.g., 25 or more years) will necessarily have fewer spells than their counterparts who participate in the labor force for shorter stretches of time.

11. Additional characteristics that may shed light on the differentials in reporting by level of education are indicators of labor market structure and labor market position that are associated with higher rates of mobility--e.g., occupation, rate of pay, or size of employing firm in each of the spells of unemployment. However, this information is not available in the NSFH work histories. In additional analyses, I controlled for *current* occupational group and employment status (wage & salary employee versus self-employed). Differentials by occupation emerge along the stratum boundary of blue-collar and white-collar occupations. Specifically, professional-managerial, technical-clerical, and sales employees have the highest level of precise reports, while service workers, employees in crafts, operatives, and forestry, farming, or fishing occupations have mean levels that are 5 to 10 points lower. The latter group of occupations is marked by lower paying, less secure and seasonal jobs as well as employment in occupational labor markets with high rates of mobility between employing organizations. Each of these characteristics adds complexity to the work career and may make it more difficult for respondents to separate periods of attachment to the labor force from attachment to specific jobs or employers. A smaller gap of 4 points differentiates wage and salary employees from self-employed persons. None of these additional controls accounts for the differentials across levels of education. They also should be interpreted cautiously since they imply assumptions about mobility *within* occupational group over the life course. Studies indicate that even short-term mobility is marked by a considerable amount of movement across major occupational boundaries (DiPrete and Krecker 1991; Rosenfeld 1992).

12. I cannot state with certainty that the part-time/full-time variable captures *employment status* in an organization rather than *labor supply*. Respondents were asked whether they worked "mostly part-time" or "mostly full-time" during a spell of employment. Since respondents may hold two or more jobs concurrently during a spell, it is conceivable that some individuals mapped their total hours of work into the available categories rather than their part- or full-time status with an employer.

13. In theory, identifying part-time and full-time employment spells is straightforward. Upon reporting their first work experience, respondents were asked if they always worked full-time, always worked part-time, or some of each. Only if their work experience was a mixture of part- and full-time employment were they to be asked if each spell of employment was primarily part-time or full-time. In practice, almost everyone was asked employment questions for each spell regardless of their initial report. In some cases, the spell-specific reports contradict the global reports. I gave priority to the spell-specific reports over the contradictory or missing global reports in constructing measures of part-time and full-time work. Spells that cannot be unambiguously classified are those in which respondents did not provide any information on full- or part-time work, or offered a "mixed" global report without any spell-specific information.

14. The precision with which respondents date events should not be confused with the reliability of their reports. Nevertheless, it is instructive to note that researchers report similar differences in the reliability of retrospective reports on marriage and employment, with the latter marked by lower levels of reliability even among very young age groups (Freedman *et al.* 1988).

15. As before, I use the terms "employment rates" and "labor force participation rates" loosely and interchangeably to refer to the proportion of persons employed among all persons in an age-group. I cannot identify persons who are in the labor force but unemployed. I calculated similar estimates from Census and BLS publications.

16. The month of March was selected because this is the reference period that captures most labor force reports in the Census. BLS figures are available for any month of the year. In light of the sizeable proportion of NSFH respondents who do not report the month of labor force entry or exit, it is reasonable to expect that annual estimates might provide a better basis of comparison. However, the monthly comparisons appear to build on the most precise, and possibly most certain, reports in the NSFH work histories. In additional analyses, I compared NSFH and BLS/Census estimates for employment *at any time during the year* rather than a specific month. Although in some instances the NSFH estimates are much closer to official reports, they are less consistent than the monthly data and produce widely varying estimates over relatively short periods of time. These annual estimates are shown in Appendix Tables 3 and 4 for men and women, respectively. Distributions of differences between the estimates are shown in Appendix Table 5.

17. There are also a dozen instances in which the labor force exit occurs at or after the date of interview. These exits usually occur within six months of the interview. Although reported occurrences of life course transitions at unusually young ages, or after the interview, are far greater for labor force events, they are also present in the marital histories. For example, a small number of respondents report marriages prior to age 10 or marital dissolutions several months after the date of the interview.

18. The natural sequence of the labor force histories shares some parallels with "bounded recall" procedures that methodologists often recommend as a way to obtain more accurate retrospective reports (Neter and Waksberg 1964; Sudman, Finn, and Lannom 1984). Typically, the first episode of reported behavior is used to establish a temporal reference point for respondents, but no information from this report is used for analysis or estimation. Reassigning or ignoring information from unusually young spells of work is akin to applying this approach very selectively. Its wholesale implementation across all survey respondents, however, would severely truncate many work histories and eliminate some altogether.

Table 1  
Distribution of Precision with which Respondents Reported Dates  
of Employment Events, by the Type of Event

Event Type	--- Respondent Reported ---				Total	N
	Month	Season	Year	No Year		
<b>Dates of Labor Force Entry</b>						
1st entry	70.3	20.6	7.8	1.2	100.0%	7,378
2nd entry	65.1	21.0	13.1	0.8	100.0	3,072
3rd entry	61.3	19.0	18.7	1.0	100.0	1,178
4th entry	60.7	20.1	17.7	1.5	100.0	402
5th entry	53.1	21.4	24.1	1.4	100.0	145
6th entry	41.1	21.4	33.9	3.6	100.0	56
7th entry	39.3	35.7	25.0	0.0	100.0	28
8th entry	41.7	25.0	33.3	0.0	100.0	12
9th entry	33.3	33.3	33.3	0.0	100.0	6
10th entry	0.0	100.0	0.0	0.0	100.0	1
All orders	67.9	21.2	9.8	1.1	100.0	12,278
All orders, including current spell	73.9	17.1	8.1	0.9	100.0	20,149
<b>Dates of Labor Force Exit</b>						
1st exit	73.0	15.1	9.7	2.3	100.0	7,378
2nd exit	68.9	17.0	13.2	0.9	100.0	3,072
3rd exit	65.6	14.7	18.1	1.6	100.0	1,178
4th exit	63.7	15.7	19.4	1.2	100.0	402
5th exit	56.6	20.0	22.1	1.4	100.0	145
6th exit	39.3	23.2	32.1	5.4	100.0	56
7th exit	39.3	35.7	21.4	3.6	100.0	28
8th exit	41.7	33.3	25.0	0.0	100.0	12
9th exit	33.3	33.3	33.3	0.0	100.0	6
10th exit	0.0	100.0	0.0	0.0	100.0	1
All orders	70.2	16.0	11.7	2.0	100.0	12,278
<b>Longest Work Spell<sup>a</sup></b>						
Entry	60.7	23.9	15.4	0.0	100.0	2,983
Exit	66.7	16.8	16.5	0.0	100.0	2,260
<b>Last Work Spell<sup>a</sup></b>						
Entry	61.0	23.2	15.7	0.0	100.0	2,983
Exit	65.8	16.2	16.0	2.0	100.0	2,162

<sup>a</sup>Persons age 55 and older only.

Table 2  
Distribution of Precision with which Male Respondents Reported Dates  
of Employment Events, by the Type of Event

Event Type	--- Respondent Reported ---				Total	N
	Month	Season	Year	No Year		
<b>Dates of Labor Force Entry</b>						
1st entry	69.4	21.0	8.3	1.3	100.0%	2,331
2nd entry	66.1	18.2	14.7	1.0	100.0	817
3rd entry	58.0	17.7	23.0	1.3	100.0	300
4th entry	53.6	20.0	23.6	2.7	100.0	110
5th entry	39.6	18.8	37.5	4.2	100.0	48
6th entry	32.0	16.0	44.0	8.0	100.0	25
7th entry	35.7	21.4	42.9	0.0	100.0	14
8th entry	33.3	16.7	50.0	0.0	100.0	6
9th entry	0.0	50.0	50.0	0.0	100.0	2
10th entry	0.0	100.0	0.0	0.0	100.0	1
All orders	65.7	21.6	11.3	1.3	100.0	3,654
All orders, including current spell	74.7	16.2	8.1	1.0	100.0	7,421
<b>Dates of Labor Force Exit</b>						
1st exit	71.6	15.2	10.3	3.0	100.0	2,331
2nd exit	67.2	16.8	14.8	1.2	100.0	817
3rd exit	58.3	15.0	23.3	3.3	100.0	300
4th exit	57.3	15.5	24.5	2.7	100.0	110
5th exit	45.8	16.7	35.4	2.1	100.0	48
6th exit	36.0	20.0	36.0	8.0	100.0	25
7th exit	42.9	21.4	35.7	0.0	100.0	14
8th exit	33.3	33.3	33.3	0.0	100.0	6
9th exit	0.0	50.0	50.0	0.0	100.0	2
10th exit	0.0	100.0	0.0	0.0	100.0	1
All orders	67.2	16.6	13.5	2.8	100.0	3,654
<b>Longest Work Spell<sup>a</sup></b>						
Entry	64.9	22.5	12.6	0.0	100.0	1,193
Exit	73.3	13.7	13.0	0.0	100.0	830
<b>Last Work Spell<sup>a</sup></b>						
Entry	65.1	21.7	13.2	0.0	100.0	1,213
Exit	72.8	12.5	12.2	2.5	100.0	794

<sup>a</sup> Men age 55 and older only.

Table 3  
Distribution of Precision with which Female Respondents Reported Dates  
of Employment Events, by the Type of Event

Event Type	--- Respondent Reported ---				Total	N
	Month	Season	Year	No Year		
<b>Dates of Labor Force Entry</b>						
1st entry	70.8	20.5	7.5	1.2	100.0%	5,047
2nd entry	64.7	22.0	12.5	0.8	100.0	2,255
3rd entry	62.4	19.5	17.2	0.9	100.0	878
4th entry	63.4	20.2	15.4	1.0	100.0	292
5th entry	59.8	22.7	17.5	0.0	100.0	97
6th entry	48.4	25.8	25.8	0.0	100.0	31
7th entry	42.9	50.0	7.1	0.0	100.0	14
8th entry	50.0	33.3	16.7	0.0	100.0	6
9th entry	50.0	25.5	25.0	0.0	100.0	4
10th entry	0.0	0.0	0.0	0.0	0.0	0
All orders	68.8	21.0	9.1	1.1	100.0	8,624
All orders, including current spell	73.5	17.5	8.1	0.9	100.0	12,728
<b>Dates of Labor Force Exit</b>						
1st exit	73.6	15.0	9.4	2.0	100.0	5,047
2nd exit	69.5	17.1	12.5	0.8	100.0	2,255
3rd exit	68.1	14.6	16.3	1.0	100.0	878
4th exit	66.1	15.8	17.5	0.7	100.0	292
5th exit	61.9	21.6	15.5	1.0	100.0	97
6th exit	41.9	25.8	29.0	3.2	100.0	31
7th exit	35.7	50.0	7.1	7.1	100.0	14
8th exit	50.0	33.3	16.7	0.0	100.0	6
9th exit	50.0	25.0	25.0	0.0	100.0	4
10th exit	0.0	0.0	0.0	0.0	0.0	0
All orders	71.5	15.7	11.0	1.7	100.0	8,624
<b>Longest Work Spell<sup>a</sup></b>						
Entry	58.0	24.8	17.2	0.0	100.0	1,790
Exit	61.7	18.4	18.1	1.8	100.0	1,368
<b>Last Work Spell<sup>a</sup></b>						
Entry	58.3	24.3	17.4	0.0	100.0	1,813
Exit	61.7	18.4	18.1	1.8	100.0	1,368

<sup>a</sup> Women age 55 and older only.

Table 4  
Differentials in the Precision of Reporting  
Entry into the Labor Force  
(N=11,972)

Covariate	N	Reported Month & Year	
		Mean=68.0% unadj.	adj.
<b>Race/Ethnicity</b>			
Black	2,070	60.0	62.0
White, non-Hispanic	9,025	70.0	70.0
Mexican	471	64.0	65.0
Other	406	69.0	68.0
<b>Gender</b>			
Women	8,435	68.0	68.0
Men	3,537	67.0	68.0
<b>Age Group</b>			
Under 25	656	86.0	86.0
25-29	1,086	81.0	79.0
30-34	1,509	77.0	75.0
35-39	1,452	78.0	75.0
40-44	1,106	74.0	72.0
45-49	822	68.0	67.0
50-54	808	62.0	65.0
55-59	757	59.0	61.0
60-64	914	62.0	63.0
65-69	1,013	58.0	59.0
70-74	777	54.0	57.0
75-79	633	48.0	51.0
80 and older	439	46.0	50.0
<b>Education</b>			
Some high school	3,265	46.0	50.0
High school	4,850	72.0	71.0
Some college	2,281	79.0	76.0
College or more	1,576	85.0	84.0
<b>Work History Characteristics</b>			
All full-time employment	8,169	68.0	68.0
All part-time employment	355	66.0	68.0
Some full-, some part-time	3,448	67.0	68.0
<b>Spell Characteristics</b>			
Full-time spells	9,941	69.0	69.0
Part-time spells	1,872	65.0	63.0
Cannot determine	159	52.0	54.0

(continued)

Table 4 (continued)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=68.0%			
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Spell Characteristics (continued)			
Longest spell	5,401	69.0	68.0
Last spell	3,982	67.0	71.0
Duration			
< 1 year	1,914	75.0	71.0
1-4	5,306	68.0	66.0
5-9	1,962	69.0	69.0
10-14	859	65.0	67.0
15-19	443	63.0	70.0
20-24	293	61.0	72.0
≥ 20	1,195	60.0	72.0
Order of spell			
1 (earliest)	7,158	71.0	70.0
2	3,026	65.0	66.0
3	1,153	62.0	63.0
4	394	62.0	65.0
5	142	53.0	58.0
6	53	41.0	49.0
7	27	37.0	44.0
8	12	41.0	45.0
9	6	33.0	43.0
10 (most recent)	1	0.0	27.0
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Table 5  
Differentials in the Precision of Reporting  
Exit from the Labor Force  
(N=11,972)

Covariate	N	Reported Month & Year	
		unadj.	adj.
		Mean=72.0%	
<hr/>			
Race/Ethnicity			
Black	2,070	63.0	65.0
White, non-Hispanic	9,025	74.0	74.0
Mexican	471	71.0	73.0
Other	406	70.0	70.0
Gender			
Women	8,435	73.0	73.0
Men	3,537	70.0	70.0
Age Group			
Under 25	656	90.0	92.0
25-29	1,086	84.0	83.0
30-34	1,509	80.0	80.0
35-39	1,452	80.0	80.0
40-44	1,106	77.0	76.0
45-49	822	70.0	71.0
50-54	808	64.0	67.0
55-59	757	64.0	66.0
60-64	914	68.0	68.0
65-69	1,013	64.0	63.0
70-74	777	60.0	60.0
75-79	633	54.0	54.0
80 or older	439	52.0	51.0
Education			
Some high school	3,265	53.0	56.0
High school	4,850	76.0	75.0
Some college	2,281	82.0	79.0
College or more	1,576	87.0	87.0
Work History Characteristics			
All full-time employment	8,169	72.0	72.0
All part-time employment	355	70.0	71.0
Some full-, some part-time	3,448	72.0	72.0
Spell Characteristics			
Full-time spells	9,941	73.0	73.0
Part-time spells	1,872	70.0	68.0
Cannot determine	159	54.0	56.0

(continued)

Table 5 (continued)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=72.0%			
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Spell Characteristics (continued)			
Longest spell	5,401	75.0	72.0
Last spell	3,982	75.0	77.0
Duration of spell			
< 1 year	1,914	77.0	73.0
1-4	5,306	71.0	69.0
5-9	1,962	72.0	72.0
10-14	859	68.0	70.0
15-19	443	68.0	74.0
20-24	293	70.0	80.0
≥ 25	1,195	72.0	84.0
Order of spell			
1 (earliest)	7,158	75.0	74.0
2	3,026	70.0	70.0
3	1,153	67.0	68.0
4	394	65.0	69.0
5	142	58.0	63.0
6	53	42.0	49.0
7	27	41.0	48.0
8	12	42.0	46.0
9	6	33.0	42.0
10 (most recent)	1	0.0	30.0
<hr/>			

Table 6  
Differentials in the Precision of Reporting  
Entry into the Labor Force, Controlling for Time of the Event  
(N=12,107)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=68.0%			
<hr/>			
Year of Entry			
Before 1930	558	42.0	52.0
1930-1934	417	51.0	58.0
1935-1939	490	56.0	61.0
1940-1944	759	58.0	62.0
1945-1949	788	62.0	68.0
1950-1954	785	60.0	65.0
1955-1959	817	66.0	69.0
1960-1964	930	66.0	66.0
1965-1969	1,367	69.0	66.0
1970-1974	1,619	72.0	66.0
1975-1979	1,708	76.0	71.0
1980-1984	1,431	81.0	79.0
1985-1988	438	90.0	90.0
Race/Ethnicity			
Black	2,097	60.0	62.0
White, non-Hispanic	9,122	70.0	70.0
Mexican	477	64.0	66.0
Other	411	69.0	68.0
Gender			
Women	8,509	68.0	68.0
Men	3,598	67.0	69.0
Age Group			
Under 25	662	86.0	72.0
25-29	1,092	81.0	70.0
30-34	1,517	77.0	71.0
35-39	1,464	78.0	73.0
40-44	1,115	74.0	71.0
45-49	834	68.0	67.0
50-54	818	62.0	65.0
55-59	767	59.0	63.0
60-64	934	62.0	67.0
65-69	1,020	58.0	65.0
70-74	789	54.0	65.0
75-79	647	48.0	62.0
80 and older	448	46.0	63.0

(continued)

Table 6 (continued)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=68.0%			
Education			
Some high school	3,318	46.0	51.0
High school	4,893	72.0	71.0
Some college	2,309	79.0	76.0
College or more	1,587	85.0	83.0
Order of spell			
1 (earliest)	7,264	71.0	72.0
2	3,039	65.0	64.0
3	1,164	62.0	60.0
4	396	61.0	60.0
5	143	54.0	53.0
6	54	42.0	43.0
7	28	39.0	36.0
8	12	41.0	33.0
9	6	33.0	35.0
10 (most recent)	1	0.0	28.0

Table 7  
Differentials in the Precision of Reporting  
Exit from the Labor Force, Controlling for Time of the Event  
(N=12,020)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=72.0%			
<hr/>			
Year of Entry			
Before 1930	180	47.0	57.0
1930-1934	172	46.0	54.0
1935-1939	201	52.0	56.0
1940-1944	459	60.0	63.0
1945-1949	511	59.0	62.0
1950-1954	491	61.0	64.0
1955-1959	560	63.0	65.0
1960-1964	678	65.0	67.0
1965-1969	1,050	66.0	66.0
1970-1974	1,497	71.0	69.0
1975-1979	1,985	72.0	71.0
1980-1984	2,378	79.0	78.0
1985-1988	1,858	89.0	88.0
 Race/Ethnicity			
Black	2,096	63.0	64.0
White, non-Hispanic	9,044	74.0	74.0
Mexican	473	71.0	73.0
Other	407	70.0	69.0
 Gender			
Women	8,467	73.0	73.0
Men	3,553	70.0	71.0
 Age Group			
Under 25	657	90.0	78.0
25-29	1,087	84.0	74.0
30-34	1,510	80.0	74.0
35-39	1,454	81.0	78.0
40-44	1,108	77.0	75.0
45-49	825	70.0	71.0
50-54	811	64.0	68.0
55-59	759	64.0	69.0
60-64	921	68.0	72.0
65-69	1,022	64.0	70.0
70-74	785	60.0	69.0
75-79	640	53.0	65.0
80 or older	441	52.0	66.0

(continued)

Table 7 (continued)

Covariate	N	Reported Month & Year	
		unadj.	adj.
Mean=72.0%			
Education			
Some high school	3,293	53.0	57.0
High school	4,865	76.0	75.0
Some college	2,285	82.0	79.0
College or more	1,577	87.0	86.0
Order of spell			
1 (earliest)	7,188	75.0	76.0
2	3,036	70.0	69.0
3	1,157	67.0	65.0
4	397	65.0	63.0
5	143	58.0	58.0
6	53	42.0	43.0
7	27	41.0	39.0
8	12	42.0	38.0
9	6	34.0	37.0
10 (most recent)	1	0.0	35.0

Table 8  
Differences Between NSFH and BLS Employment Estimates  
by Birth Cohort and Gender

Age:	--- Birth Cohort ---							
	1911- 1915	1916- 1920	1921- 1925	1926- 1930	1931- 1935	1936- 1940	1941- 1945	1946- 1950
Men								
20-24	na	na	na	-2.13	na	-1.38	-3.02	-6.51
25-29	na	na	0.52	na	1.57	2.56	2.23	7.76
30-34	na	-0.27	na	5.11	1.57	3.91	6.44	6.05
35-39	1.35	na	1.07	5.14	2.47	7.14	4.15	1.66
40-44	na	1.94	0.26	5.58	4.94	4.43	3.16	
45-49	3.73	-0.31	2.60	7.38	2.17	5.11		
50-54	1.24	1.56	4.69	6.84	2.80			
55-59	6.31	1.88	4.10	5.52				
60-64	18.11	5.82	4.42					
65-69	3.26	7.11						
70-74	7.97							
Sample N	183	230	294	245	283	312	411	598
Women								
20-24	na	na	na	5.14	na	1.29	1.32	-6.33
25-29	na	na	5.76	na	7.69	6.98	10.61	8.51
30-34	na	4.04	na	6.07	6.56	4.82	9.41	2.97
35-39	8.84	na	3.88	3.63	4.19	6.65	6.53	1.52
40-44	na	8.03	3.60	8.63	4.54	1.39	5.73	
45-49	10.20	9.72	9.90	5.81	6.72	4.92		
50-54	7.08	10.89	8.69	6.03	8.23			
55-59	12.00	16.23	6.20	2.86				
60-64	10.13	9.20	8.27					
65-69	5.99	9.21						
70-74	6.60							
Sample N	299	337	421	363	383	466	542	858

Differences are weighted NSFH estimates of employment in the month of March for the corresponding year minus BLS or Census estimates. Sample sizes are unweighted.

Appendix Table 1. Employment Rates of Men Over the Life Course, By Birth Cohort

Cohort:	1911-1915		1916-1920		1921-1925		1926-1930		1931-1935		1936-1940		1941-1945		1946-1950	
Source:	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH
Age Group																
20-24	na	na	na	61.05	na	51.05	70.27	68.14	na	58.80	68.60	67.22	66.18	63.16	64.37	57.86
25-29	na	86.94	na	61.52	83.04	83.56	na	88.37	84.67	86.24	85.72	88.28	86.14	88.37	81.95	89.71
30-34	na	87.62	88.11	87.84	na	89.67	88.87	93.98	88.47	90.04	89.30	93.21	86.21	92.65	87.01	93.06
35-39	90.16	91.51	na	92.41	89.60	90.67	90.54	95.68	89.81	92.28	87.11	94.25	88.30	92.45	89.95	91.61
40-44	na	93.95	89.89	91.83	90.74	91.00	90.93	96.51	88.24	93.18	88.59	93.02	89.51	92.67		
45-49	89.93	93.66	91.63	91.32	90.52	93.12	88.82	96.20	87.81	89.98	87.85	92.96				
50-54	91.39	92.63	88.72	90.28	84.67	89.36	84.82	91.66	85.03	87.83						
55-59	84.19	90.50	80.06	81.94	77.32	81.42	85.74	81.26								
60-64	63.40	81.51	57.79	63.61	53.68	58.10										
65-69	27.67	30.93	23.59	30.70												
70-74	11.01	18.98														

Notes:

- (a) BLS=Bureau of Labor Statistics and Census data; NSFH=sample estimates from National Survey of Families and Households. Data are from Census publications for 1950, 1960, 1970, and 1980. Intercensal data are BLS estimates reported in *Employment and Earnings*. NSFH estimates are weighted.
- (b) Employment rates are calculated as (number of persons employed)/(number of persons in the population) in March of the relevant year.
- (c) na=data not available. Age-specific intercensal data are not available in 1955. Age categories reported prior to the 1950 Census are not comparable with later Censuses.
- (d) Intercensal reports use an upper age-category of "70 and older" rather than 70 to 74.



Appendix Table 2. Employment Rates of Women Over the Life Course, By Birth Cohort

Cohort: Source:	1911-1915		1916-1920		1921-1925		1926-1930		1931-1935		1936-1940		1941-1945		1946-1950	
	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH
Age Group																
20-24	na	na	na	34.11	na	49.33	40.52	45.66	na	44.17	41.71	43.00	45.34	46.66	52.37	46.04
25-29	na	43.70	na	38.26	30.99	36.75	na	40.89	32.80	40.49	36.32	43.30	43.20	53.81	51.19	59.70
30-34	na	42.11	29.57	33.61	na	40.73	33.48	39.55	36.36	42.92	42.24	47.06	46.88	56.29	59.48	62.45
35-39	32.43	41.27	na	40.60	38.11	41.99	41.40	45.03	46.45	50.64	49.91	56.56	60.98	67.51	68.11	69.63
40-44	na	48.98	43.14	51.17	45.93	49.53	50.15	58.78	53.95	58.49	61.86	63.25	67.29	73.02		
45-49	45.32	55.52	49.42	59.14	51.23	61.13	52.67	58.48	58.63	65.35	64.99	65.91				
50-54	47.59	54.67	50.46	61.35	50.38	59.07	53.72	59.75	58.68	66.91						
55-59	45.93	57.93	45.60	61.83	46.26	52.46	48.83	51.69								
60-64	33.07	43.20	32.59	41.79	32.52	40.79										
65-69	14.20	20.19	12.65	21.86												
70-74	4.54	11.14														

See notes to Appendix Table 1.

Appendix Table 3. Annual Employment Rates of Men Over the Life Course, By Birth Cohort

Cohort: Source:	1911-1915		1916-1920		1921-1925		1926-1930		1931-1935		1936-1940		1941-1945		1946-1950	
	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH
Age Group																
20-24	na	79.33	70.19 <sup>b</sup>	61.04 <sup>b</sup>	na	56.49	80.35	70.32	na	65.04	92.88	68.25	68.07	70.78	91.42	56.95
25-29	87.55 <sup>a,b</sup>	86.94 <sup>b</sup>	na	68.71	86.89	84.89	na	91.47	96.00	86.12	86.29	90.77	95.81	89.24	83.17	92.26
30-34	na	90.99	89.78	89.42	na	89.86	96.87	93.84	89.57	91.49	96.68	93.77	85.09	95.30	94.70	94.35
35-39	89.86 <sup>c</sup>	93.07	na	92.41	96.76	91.64	91.47	96.07	96.60	92.54	87.99	94.59	94.69	93.46	90.53	92.44
40-44	na	94.26	96.51	93.21	92.04	91.99	96.12	96.48	89.12	93.56	93.88	94.34	90.25	93.51		
45-49	95.76	93.66	92.59	91.38	95.28	93.23	89.14	96.20	92.19	89.81	88.84	94.25				
50-54	92.16	93.04	93.65	91.83	85.89	90.10	89.16	93.37	84.58	88.07						
55-59	90.19	90.69	80.86	82.39	83.01	84.14	76.10	81.70								
60-64	62.76	82.47	68.36	71.34	53.24	61.59										
65-69	38.66	42.09	23.61	30.70												
70-74	10.25	18.98														

Notes:

(1) BLS=Bureau of Labor Statistics and Census data; NSFH=sample estimates (weighted) from National Survey of Families and Households. Data are from Census publications for 1940, 1950, 1960, 1970, and 1980. Intercensal data are BLS estimates reported in *Employment and Earnings*.

(2) Employment rates are calculated as (number of persons employed at any time during the year)/(number of persons in the population).

(3) na=data not available. Age-specific intercensal data are not available in 1955. Age categories reported prior to the 1950 Census are not comparable with later Censuses.

(4) Intercensal reports use an upper age-category of "70 and older" rather than 70 to 74.

<sup>a</sup> Age category is 25-34.

<sup>b</sup> Estimates for the month of March of the relevant year.

<sup>c</sup> Age category is 35-44.

Appendix Table 4. Annual Employment Rates of Women Over the Life Course, By Birth Cohort

Cohort: Source:	1911-1915		1916-1920		1921-1925		1926-1930		1931-1935		1936-1940		1941-1945		1946-1950	
	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH	BLS	NSFH
Age Group																
20-24	na	48.63	38.32 <sup>b</sup>	34.11 <sup>b</sup>	na	57.33	51.34	49.95	na	52.35	60.23	49.19	46.20	56.87	72.62	51.05
25-29	30.65 <sup>a,b</sup>	43.70 <sup>b</sup>	na	42.97	38.88	41.35	na	43.90	45.24	44.62	36.65	47.64	56.73	62.55	51.46	65.00
30-34	na	44.56	35.04	37.04	na	45.12	42.76	40.67	36.16	47.50	52.01	49.58	47.25	62.23	68.10	66.28
35-39	37.82 <sup>c</sup>	43.08	na	44.00	46.06	42.86	41.48	49.36	54.71	53.92	50.77	61.72	67.75	70.14	67.58	75.51
40-44	na	52.67	50.79	52.67	46.37	52.35	57.75	60.51	53.22	61.06	67.89	67.26	68.18	77.33		
45-49	52.56	55.68	49.84	61.06	58.18	62.77	52.55	61.25	64.15	67.10	64.42	72.32				
50-54	48.66	57.59	57.01	65.12	50.23	60.78	58.87	62.65	58.06	69.27						
55-59	52.48	58.24	45.52	62.77	51.61	54.83	47.95	54.61								
60-64	31.55	44.09	39.21	48.48	32.24	41.94										
65-69	19.65	25.22	12.99	22.86												
70-74	4.18	11.14														

See notes to Appendix Table 3.

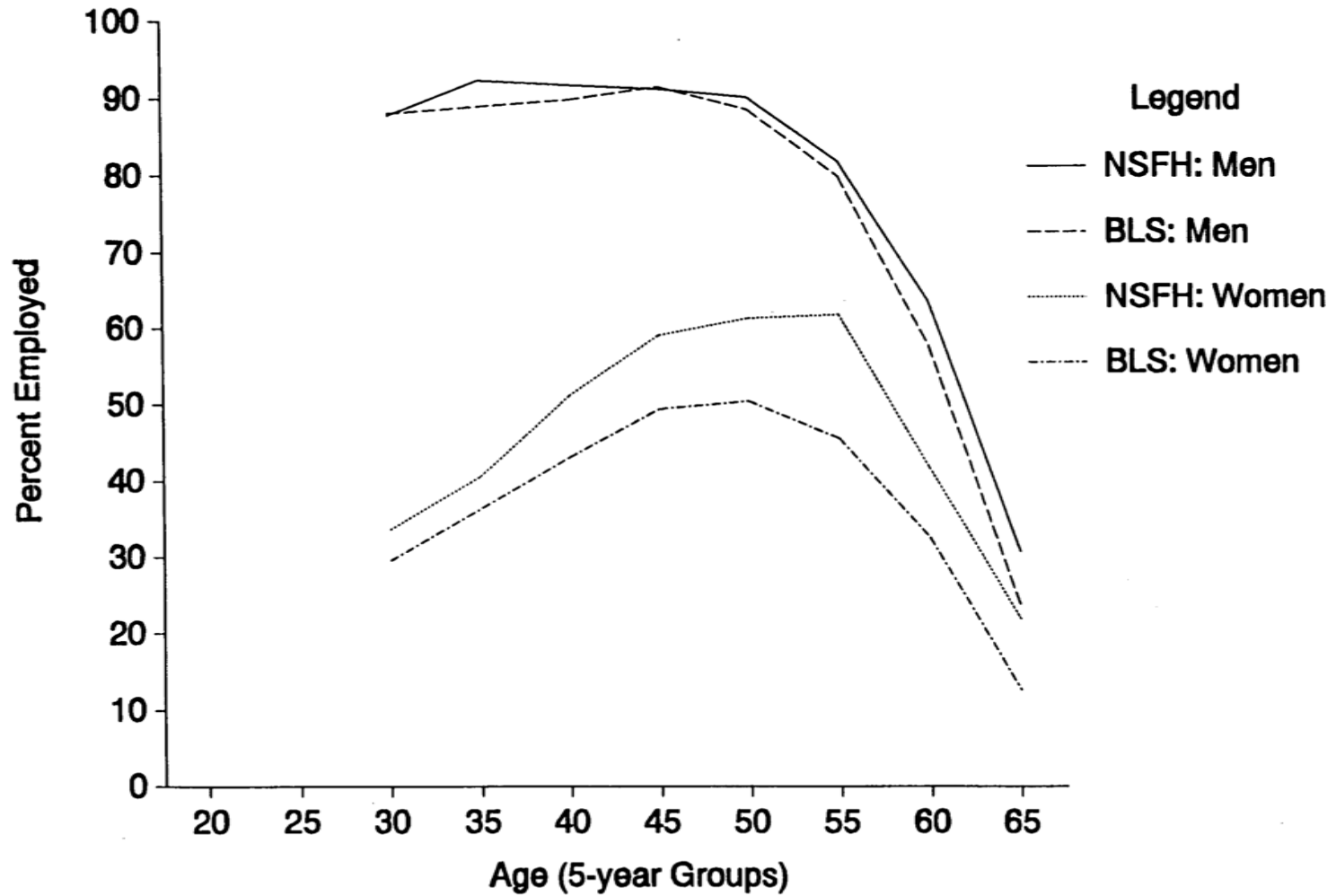
Appendix Table 5. Differences Between NSFH and BLS Employment Estimates, by Birth Cohort and Gender

Age:	--- Birth Cohort ---							
	1911-1915	1916-1920	1921-1925	1926-1930	1931-1935	1936-1940	1941-1945	1946-1950
Men								
20-24	na	-9.15	na	-10.03	na	-24.63	2.71	-34.47
25-29	-0.61	na	-2.00	na	-9.88	4.48	-6.57	9.09
30-34	na	-0.36	na	-3.03	1.92	-2.91	10.21	-0.35
35-39	3.21	na	-5.12	4.60	-4.06	6.60	-1.23	1.91
40-44	na	-3.30	-0.05	0.36	4.44	0.46	3.26	
45-49	-2.10	-1.21	-2.05	7.06	-2.38	5.41		
50-54	0.88	-1.82	4.21	4.21	3.49			
55-59	0.50	1.53	1.13	5.60				
60-64	19.71	2.98	8.35					
65-69	3.43	7.09						
70-74	8.73							
Sample N	183	230	294	245	283	312	411	598
Women								
20-24	na	-4.21	na	-1.39	na	-11.04	10.67	-21.57
25-29	13.05	na	2.47	na	-0.62	10.99	5.82	13.54
30-34	na	2.00	na	-2.09	11.34	-2.43	14.98	-1.82
35-39	5.26	na	-3.20	7.88	-0.79	10.95	2.39	7.93
40-44	na	1.88	5.98	2.76	7.84	-0.63	9.15	
45-49	3.12	11.22	4.59	8.70	2.95	7.90		
50-54	8.93	8.11	10.55	3.78	11.21			
55-59	5.76	17.25	3.22	6.66				
60-64	12.54	9.27	9.70					
65-69	5.57	9.87						
70-74	6.96							
Sample N	299	337	421	363	383	466	542	858

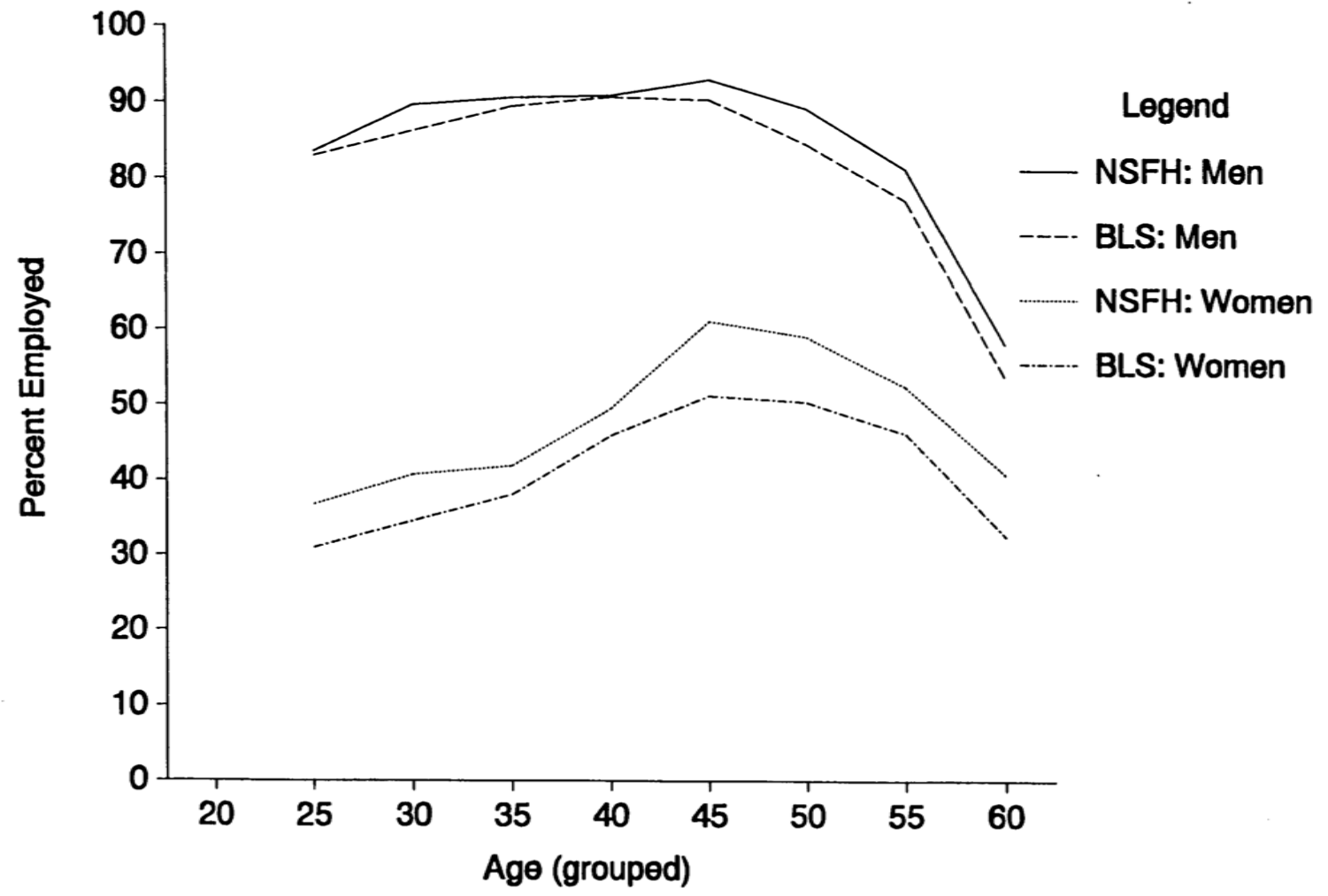
Differences are weighted NSFH estimates of employment at any time during the year minus BLS or Census estimates.

Sample sizes are unweighted.

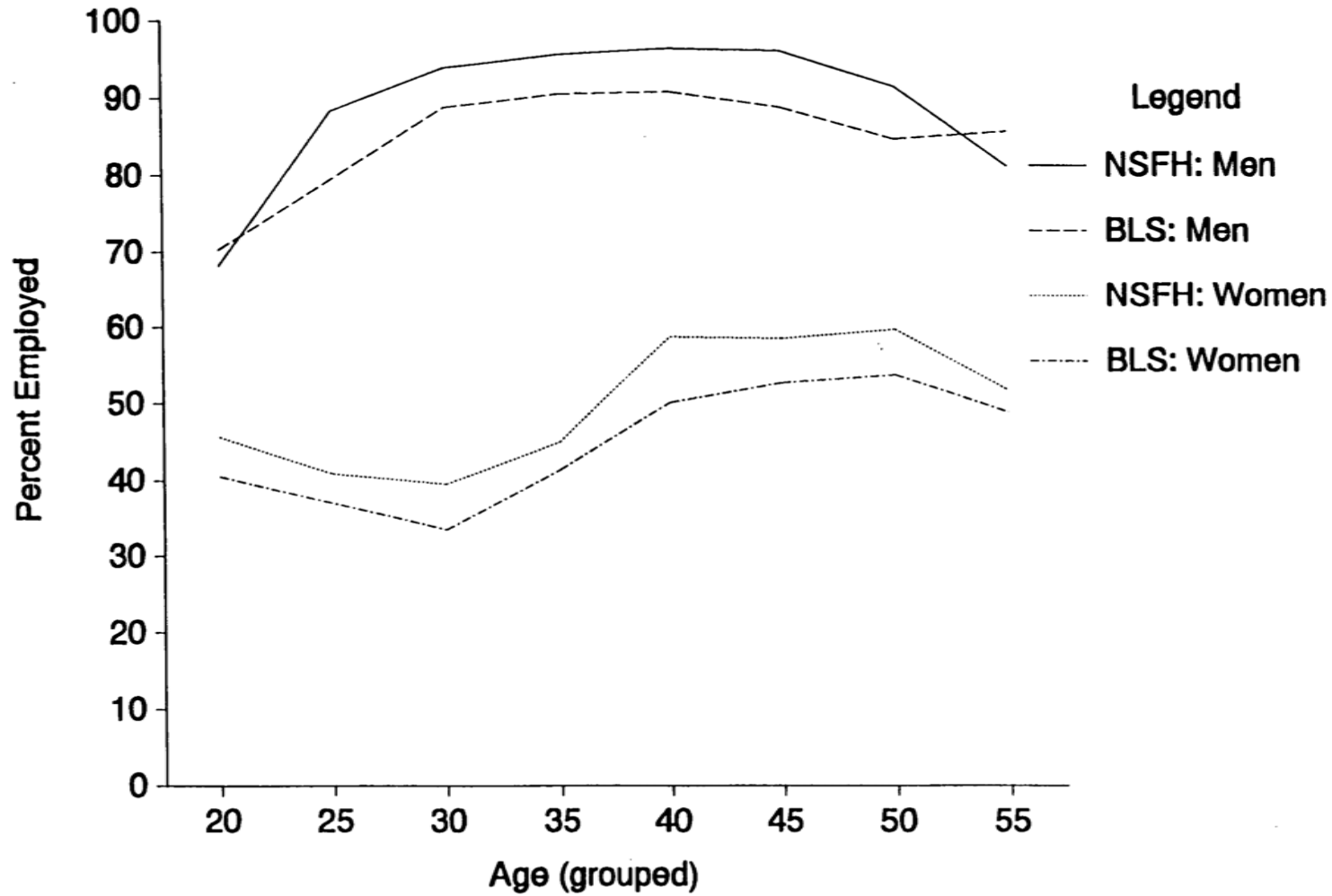
## Employment Rates of Men and Women in the 1916-1920 Birth Cohort



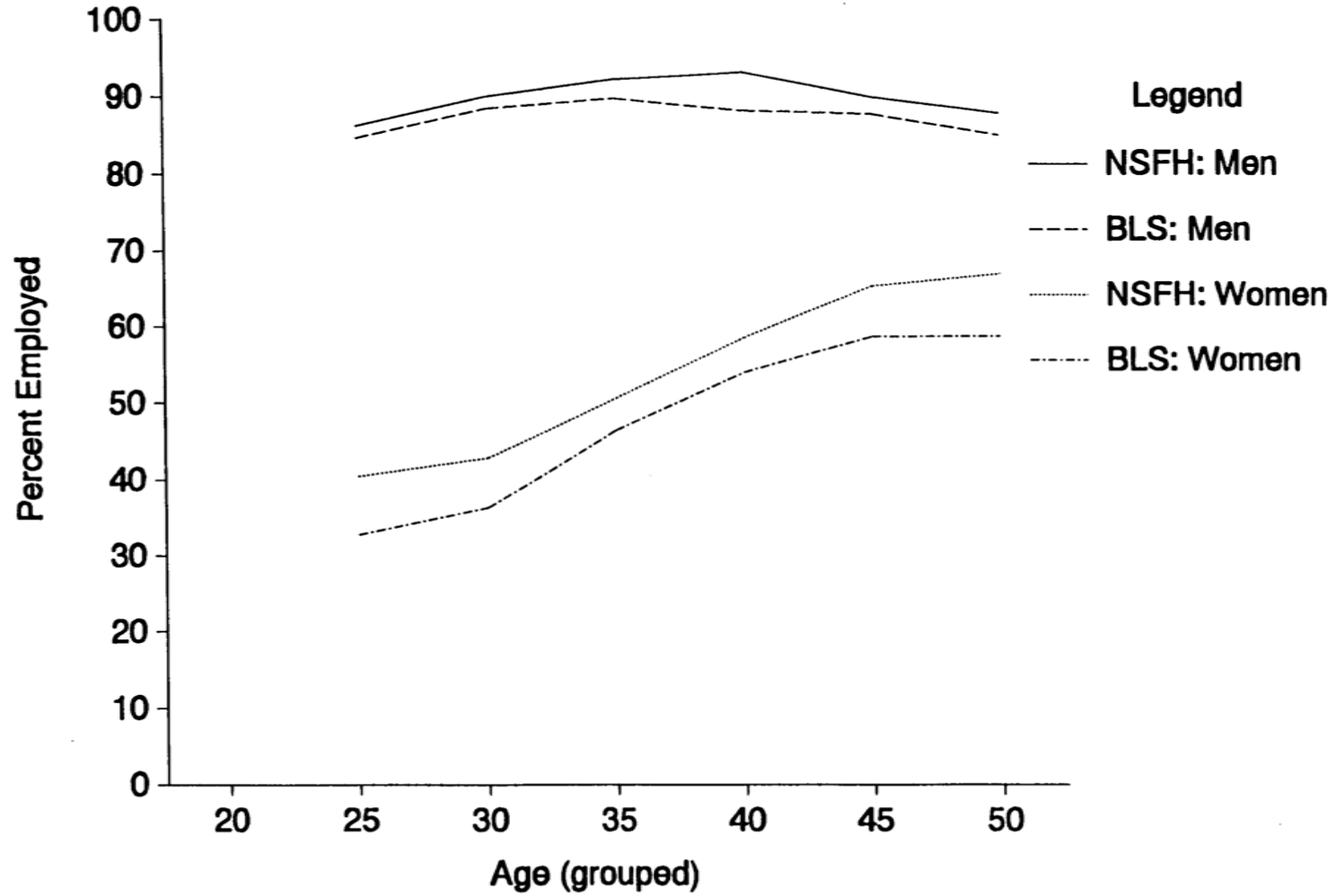
### Employment Rates of Men and Women in the 1921-1925 Birth Cohort



## Employment Rates of Men and Women in the 1926-1930 Birth Cohort



## Employment Rates of Men and Women in the 1931-1935 Birth Cohort





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