THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

Patterns of Household Composition and Family Status Change

No. 17

Constance F. Citro, ASA/Census Research Fellow
and Harold W. Watts, Department of Economics, Columbia University

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PREFACE

This paper was presented at the Annual Meeting of the American Economic Association in New York, NY, on December 29, 1985. It was included in the Session entitled "The Survey of Income and Program Participation--Early Findings from a New Data Resource," chaired by Martin David of the University of Wisconsin-Madison.

The other papers included in this session were as follows:

"SIPP Labor Force Transitions: Problems and Promises," by Paul Ryscavage and Kathleen Short, Bureau of the Census.

"Patterns of Asset Ownership and Wealth Holdings," by Enrique F. Lamas and John M. O'Neil, Bureau of the Census.

Glen C. Cain of the University of Wisconsin and James Tobin of Yale University were the discussants.

This paper reports early finding and work underway on studies of the short-run dynamics of household membership and economic status using monthly data on household composition, family status, and current income flows from the 1979 Research Panel of the Income Survey Development Program (ISDP).

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INTRODUCTION

This paper reports early findings and work underway on some studies of the short-run dynamics of household membership and economic status. The Survey of Income and Program Participation (SIPP), as well as its precursor survey, the 1979 Research Panel of the Income Survey Development Program (ISDP), provides monthly panel data on household composition, family status, and current income flows. When a full set of data from a SIPP panel is available, we will be able to analyze time series up to 32 months in length. The ISDP provides 12 months of data for the full panel and 15 months for a subset. Time series on a monthly basis, with proper matching of household demographic and economic characteristics, offer exciting possibilities for analysis of how changes in both categories of variables may influence each other and how each is affected by properly exogenous factors. This paper represents some preliminary efforts to move forward toward such analyses.

More specifically, this paper first examines the extent and variety of intra-year change in both composition and poverty status for a sample of households drawn from the ISDP. Second, this sample is analyzed to discover the consequences of using alternative rules for determining the continuity of a household versus its discontinuation and succession by one or more "new" units. Third, an alternative strategy for analyzing household change is explained and outlined. This approach follows persons as the households they occupy change, dissolve, and reform from month to month and also regards the economic status of the same succession of

households as another environmental characteristic affecting the behavior and development of the person.

BACKGROUND

There is a rich literature documenting and analyzing changes in household and family structure in the 20th century U.S. (see Koo, 1985). Recent trends include decline in the number of two-parent households, growth in single-parent, nonfamily, and one-person households, and decrease in average household size. However, few studies to date have looked at gross changes in household composition on a longitudinal basis, and fewer still at changes occurring within the span of a year. The March Current Population Survey (CPS), which represents a prime source of information on patterns of change in family and household structure, provides measures only of net change year-by-year and does not follow intra-year household composition dynamics.

Yet we know that throughout the year persons join and leave households for reasons of birth, death, marriage, divorce, going back and forth to school, and so on. What we do not know is the incidence and timing of each kind of change and the duration of each type of household. Moreover, we do not know the extent to which annual statistics on households by type (husband-wife, female family head, etc.), size, and other characteristics reasonably represent the experience of the population throughout the year or distort that experience in important ways.

This question takes on added importance when we consider measures of household economic performance. There is a rich literature analyzing the year-by-year dynamics of income and poverty, using both repeated

cross-section and longitudinal panel data. Analysis of the Panel Study of Income Dynamics (PSID), now in its 18th year, has found evidence of considerable income instability--while the "hardcore" poverty population that remains below the poverty line year after year is relatively small, a much larger proportion of the population has experienced one or more years of poverty. This research has also amply documented that changes in family composition--the gain or loss of one or more members--are important determinants of changes in poverty status (Duncan and Morgan, 1982). Relatively little is known about intra-year income dynamics and their relationship with household composition change. To the extent that intra-year composition changes affect the income receipts and needs of a sizeable element of the population, then it may be that our annual measures of household income and poverty status based on the March CPS are flawed.

The CPS measures of income and poverty, as well as household type, size, etc., simply ignore intra-year changes in household composition. In the CPS, income is measured over the preceding calendar year for members of each sample household who were present in the following March, although not all of these members may have been part of the household during the income accounting period and some members present earlier in the year may have left before the interview. Moreover, income of members of sample households who died, were institutionalized, or moved abroad before the interview is excluded entirely.

Limited empirical evidence, based on work with data from the Income Maintenance Experiments (Scardamalia, 1978) and the first two waves of the 1979 ISDP Research Panel (Czajka and Citro, 1982), suggests that the CPS procedure distorts to some extent annual estimates of families and persons

in poverty because of the different accounting periods used for family composition versus family income. No work has been done that would indicate whether measures of change in poverty rates from year-to-year are also affected, nor have there been studies of problems in characterizations of households by type and other variables from the yearly cross-sectional CPS observations.

Intra-Year Data from the ISDP and SIPP

The 1979 Income Survey Development Program Research Panel represented the first effort to conduct a longitudinal survey of a large nationally representative sample of households principally to obtain data on intra-year income and government program participation (see Ycas and Lininger, 1981, for a description). Based on experience gained in the ISDP and other surveys, the Survey of Income and Program Participation was launched in the fall of 1983 as a continuing data collection vehicle for obtaining information on intra-year income and program participation in addition to other topics from large panels followed over periods of two-and-one-half years (see Nelson et al., 1984, for an overview). The detailed income data in the ISDP and SIPP, obtained by month for most sources, and monthly data on household and family composition permit measuring intra-year changes in household composition and socioeconomic status. (A caveat to note is that the SIPP does not measure household composition change during the months covered by the first interview. This is also largely true of the ISDP. The ISDP suffers as well from errors in arrival and departure dates of household members used to develop the monthly composition data.)

Information about part-year income and composition is important for many purposes, notably policy planning and evaluation for means-tested transfer programs that use part-year accounting periods for eligibility and benefit determination. However, the availability of regular part-year statistics from SIPP will not lessen the need for annual measures that document trends in living arrangements and in how the country fared economically over the year. In particular, there will continue to be a need for annual household statistics. Although measures of total annual available income and poverty status can be reported and analyzed for persons, they must be defined on a household or family basis. The income available to many persons is not simply their "own" receipts, but receipts earned or otherwise acquired by other members of the household or family. Similarly, standards of need recognize economies of scale for larger families. There is public policy interest in social and economic statistics for the units into which persons group themselves in addition to interest in statistics on a person basis.

The Challenge of Annual Longitudinal Household Statistics

The SIPP data permit developing annual household statistics that better reflect actual experience during the year. Yet, perplexing methodological issues arise when one tries to construct such measures. There are complex questions involved in the development of appropriate longitudinal weights that account for sample attrition over time and of appropriate longitudinal imputation techniques for missing data. Another complex issue which we address in this paper concerns definition of households on a longitudinal basis. Given intra-year composition change, when is it appropriate for annual measures to recognize change in household

composition and when not? For example, it may be that analysts would agree that the birth of a second child to a husband-wife family is not enough of a change to warrant recognition of a new family, whereas gaining or losing a spouse is. There is likely to be less agreement on treatment of changes between these two extremes.

Researchers at the Census Bureau and other institutions have given considerable thought to the question of defining households and families on a longitudinal basis (see McMillen and Herriot, 1984, for a review of the literature). Considerations involved in choice of definition include: (1) research applicability, (2) ease of computation, and (3) feasibility of estimation. With regard to the suitability of various longitudinal definitions for annual measures of income and poverty status, views have been expressed that a definition that emphasizes continuity and produces a smaller number of longer-lived households will tend to result in a lower poverty rate compared with a definition that recognizes many kinds of change and produces a larger number of shorter-lived households. Implicit in this view is a model that households undergoing rapid compositional change are also undergoing economic swings in and out of poverty. Examples can readily be constructed that both support and contradict this view.

Opinions have also been expressed on a related issue of how to present longitudinal household statistics once a definition is chosen, given that any longitudinal definition will result in part-year households. One approach is simply to tabulate full-year and part-year households separately. However, this has the drawback that the sum of the two distributions will provide a count greater than the count obtained on a cross-sectional basis at any point for the year and that each part-year

household will count for as much in the combined distribution as each full-year household. Another approach is to tabulate full-year and part-year households together and to time-weight the latter, that is, count part-year households for only the fraction of the year each existed. This approach will produce an estimate that is close to cross-sectional estimates of the number of households, but the estimate based on time-weighting will represent "household years" rather than households per se and may, consequently, take some getting used to. Obviously, the question of tabulations interrelates with the choice of definition. Those definitions that emphasize continuity have the attraction of not producing as many part-year households, but continuity for continuity's sake may well mask important differences between households that truly do not change composition and those that are defined as continuous but in fact had one or more changes.

ANALYSIS OF HOUSEHOLD COMPOSITION AND ECONOMIC CHANGE WITH THE ISDP

Our empirical analysis has a two-fold purpose. First, we want to describe patterns of intra-year household composition change and associated changes in poverty status. Second, we want to analyze the implications of change for annual measures by constructing annual household type and poverty status statistics under several alternative longitudinal household definitions.

Data Source

Although the SIPP is a much larger and less problematic data base than the ISDP, at the time of our analysis we had available all six waves of the

ISDP, providing 12 to 15 months of data for sample households, but only two waves of the SIPP--the latter not sufficient for a 12-month study. Hence, we used the ISDP. Because of known data problems encountered in previous work that we feared would prevent timely completion of useful measures (see Doyle and Citro, 1984), we developed small subsamples that could be readily manipulated rather than attempting to use all of the 7,500 originally sampled households.

We drew two independent random samples of about 10 and 8 percent of the original ISDP households designated for interview at the first wave. These samples included original sample members plus all other persons who subsequently joined one or more of the original members. The combined 18-percent sample gave us reasonably good cell sizes, and the two separate samples permitted assessment of the robustness of our results. We carefully reviewed each group selected for our subsamples and, as we anticipated, encountered a high proportion of data problems. In total, we had to drop 27 percent of the cases--we did not have the resources to undertake imputation for missing data or to correct the various kinds of problems that we found. Most groups that we deleted--over 90 percent of the total--had one or more interview waves missing. (Groups where the original household split into two or more households were deleted even if only one constituent household had a missing wave.) The remaining cases were deleted because of problems such as apparently erroneous changes in relationship to reference person or in household type.

Longitudinal Household Definitions

One of our analysis goals was to investigate development of annual household statistics that reflect intra-year social and economic change.

Hence, we wanted to experiment with as many different types of definitions as practicable. We particularly wanted to include definitions representing widely spaced points along a continuum from definitions emphasizing continuity to those emphasizing change. We constructed longitudinal household definitions over a 12-month span on the basis of the ISDP data for each group in our samples. (The 12 months do not represent a fixed calendar period because of the staggered interviewing used in the ISDP--for one-third of the sample, the period is November 1978 through October 1979; for another third, December 1978 through November 1979; and for the last third, January through December 1979.)

We began with two definitions that emphasize continuity:

(1) Reference person definition: A household continues over time if it has the same reference person or householder.

(2) Principal person definition: A household continues over time if it has the same principal person. This definition differs from the first in treatment of married couple households for which the reference person may be either the husband or wife as designated by the household but the principal person is always the wife. For all other households, the principal person is the reference person (the person who owns or rents the house).

We then implemented two definitions that emphasize change:

(3) Family type definition: A household continues over time if it has the same reference person and if it is the same family type, where family type may be: husband-wife household, male head family household,

female head family household, male head nonfamily household, or female head nonfamily household.

(4) No change in composition: A household continues over time if the membership remains constant; that is, no original household member leaves or new member arrives.

Definition (3) will give different results from either of the first two definitions in a number of situations. For example, in the case of a divorce, definition (3) will recognize dissolution of one household and formation of two new households. In contrast, definition (1) will, in most cases, continue the husband's household and recognize only one new household, that of the wife, while definition (2) will continue the wife's household and recognize only the husband's household as new after the divorce. Definition (4) is at one extreme of the continuum from minimizing to maximizing recognition of change--this definition recognizes every single change in household membership, whether it be the birth of a child, the loss of a parent, or the arrival of a roomer.

For a number of reasons, we did not construct the CPS retrospective household definition with our ISDP data. The ISDP does not contain complete income data for new sample members nor does it have sufficient months of data to simulate a March interview asking about income in the previous calendar year. Moreover, it has missing data for a number of persons who attrited from the sample. In discussing our results, we suggest some implications for possible problems with the CPS definition.

For each of the four definitions specified above, we constructed a file from our ISDP samples containing a set of fixed-length records, one for each longitudinal household, with the following variables:

(1) Household status by month (1 for each month in which the household exists, 0 otherwise);

(2) Household size by month;

(3) Family type by month;

(4) Total household income by month (these totals are underestimates in many cases because of missing data);

(5) Household poverty threshold by month (the appropriate value from a matrix of thresholds by household size and month that was constructed by assigning the U.S. Office of Management and Budget weighted average thresholds by household size categories for 1978, 1979, and 1980 to July of each of those years, dividing by 12, and interpolating linearly for the intervening months); and

(6) Demographic characteristics of the household head.

The records also contain the base weight for Wave 1, representing essentially the inverse of the sampling fraction. The ISDP sample was drawn to overrepresent high and low income groups and the weights vary widely. We decided ultimately not to use the weights because, as we examined different ways of defining and describing households over time, the weights greatly exaggerated the effects of movement among tabulation cells of a handful of cases in our small samples.

RESULTS OF THE ISDP ANALYSIS

For many reasons, the results of our analysis, presented below, should be viewed as exploratory and suggestive, rather than definitive. As just

noted, we used unweighted data which means, for example, that the incidence of intra-year household composition change found may not represent the experience of the total population. Our samples were small and contained many problematic data elements, including missing income data for some cases and inaccuracies in the timing of income receipt and composition change. Nevertheless, the analysis represents one of the first attempts to examine these issues and can serve to guide future work with the SIPP.

We first describe the extent of intra-year social and economic change experienced by original households in our 18-percent ISDP sample. Then, we construct and evaluate annual meausures of household type and poverty status under our four longitudinal household definitions.

Composition Change Experienced by Original Sample Households

Our data provide measures both of net and gross change in household composition. Table 1 shows the household distribution in months 1 and 12 from our ISDP sample. Also shown is the household distribution in the March 1979 and 1980 CPS. The distributions are similar, except that the ISDP sample has a lower proportion of husband-wife households and a higher proportion of female head nonfamily households compared with the CPS. Looking at net change over time, the number of households in the ISDP sample grew over the 12-month observation period by 3.5 percent compared with a 2.3 percent growth in the stock of households as measured by the CPS. The distributions by family type changed very little over time for either the ISDP or the CPS. Similarly, from data not shown, there was little net change in household size in the ISDP. Over 12 months, average

household size in the ISDP sample declined from 2.63 to 2.60 persons, largely due to a decrease in size of husband-wife households.

Looking at the gross composition change experienced by original households in our ISDP 18-percent sample reveals activity that the net change figures obscure. Over 15 percent of original households experienced a change in family type and/or household size within the 12-month span (see table 2). Most changes altered only the household size--72 percent of original households that proved unstable during the year changed size but retained the same type; the remaining 28 percent of unstable households changed type as well as size. Single-parent households were most likely to experience change, particularly change that altered their family type. Husband-wife households also had a higher-than-average proportion experiencing change, but most changes to these households altered only their size. Nonfamily households, especially those headed by women, were least likely to experience change during the year.

On average, unstable households lasted a little more than 6 months of the 12-month period of observation (see table 2). Households first experiencing a change in family type lasted about a half month longer than households first undergoing a change in size. Over one-fifth of the original sample households that did not change type experienced more than one change in size during the year--17 percent had two changes, 4 percent three changes, and 1 household (1 percent) had four size changes. Households formed after a change in family type also in some instances underwent further change.

Unstable original sample households differed in several respects from those households remaining the same over the 12-month span. Unstable

households that changed size were larger in size than stable households across all family types. In turn, stable households were larger in size than unstable households that changed family type, except in the case of nonfamily households (see table 3).

On average, unstable households that changed type were somewhat more likely to be poor than were stable households, while stable households were more likely to be poor than unstable households that simply changed size (see table 3). However, this pattern does not hold by family type. Among husband-wife households, those that changed type had the highest poverty rate but stable households had the lowest rate. Among family households headed by single women, those that changed size had the highest poverty rate and those that changed type the lowest. Among nonfamily households, those that remained stable had the highest poverty rate. The poverty rates shown in this and other tables should not be compared with CPS rates. They are based on unweighted data, and, more importantly, are calculated over the duration of the household within the 12-month period of observation (see table 3 note).

The unstable households in our 18-percent ISDP sample changed in many ways during the year. About the same proportion of households added one or more new members during the year as the proportion that lost one or more members--45.3 versus 44.7 percent, respectively (see table 4). A somewhat higher proportion of households losing members also changed their family type compared with households adding members. The remaining 10 percent of unstable households had members join and leave the household during the year, but, on net, did not change household size. (See table 4 note for the accounting rules used to assign households to the "added", "lost", and "net zero" categories.)

The most common types of change affected the size of husband-wife households. Over 26 percent of unstable households represented married couples acquiring new members, largely through birth (38 percent of these couples were childless at the start of the year). Another almost 23 percent were married couples losing members, chiefly adult children setting out on their own. (Almost 39 percent of these couples ended the year childless. Of the "emancipated" adult children, about 55 percent set up a married couple household and the remainder a nonfamily household.) Close to 11 percent of unstable households were married couples who experienced a splitup or loss of a spouse, about half of these changes involving children. In total, married couples accounted for 67 percent of all unstable households compared with 57 percent of all original households, and they were more likely to be involved in changes that resulted in a net loss as opposed to gain of members.

Families headed by women also accounted for a disproportionate share of unstable households--14.5 percent compared with 11 of the total. In contrast with married couples, they were more often involved in changes that resulted in a net addition of members. (Data for male head families are not shown because of small cell sizes.) About 35 percent of unstable female head families, representing 5 percent of total households experiencing change, added members through marriage. Another 26 percent of unstable female head families lost members and 17 percent were left alone as a single-person nonfamily household. Nonfamily households were also more involved in net additions, largely, in the case of male head nonfamily households, through marriage, and, in the case of female head nonfamily households, through becoming female head families by the addition of one or more relatives. Overall, nonfamily households

accounted for only 16 percent of unstable households compared with their 31 percent share of total original households.

Economic Changes Experienced by Original Sample Households

Just as research with the PSID and other surveys has documented that households experience economic ups and downs that swing them above and below poverty on an annual basis, ISDP data indicate that households experience intra-year changes in their economic fortunes. The group of original households in our sample that remained stable and also the group that changed composition during the year included cases with sufficient variation in income to affect their poverty status.

Looking at household income-to-needs ratios on a monthly basis, almost 16 percent of stable households were always in poverty, 54 percent were never in poverty, and the remaining 30 percent had a combination of poor and nonpoor months within the 12-month span (see table 5). Unstable households that changed family type showed similar patterns--16 percent were always in poverty, 52 percent never, and the remainding 32 percent had a mixed experience. Unstable households that changed size included a much higher proportion that were never poor--almost 64 percent--and a much lower proportion always poor--just over 10 percent. About 26 percent of these households had both poor and nonpoor months. Of households newly formed during the year, including offshoots formed by emancipated children and other persons leaving original households and those households formed as the consequence of a change in family type, close to 70 percent were never poor, 14 percent always poor, and only 16 percent had some poor and nonpoor months. (New households were, on average, of shorter duration

within the 12-month observation period, which may be one factor accounting for the small proportion with both poor and nonpoor months.)

Another way of looking at intra-year poverty experience is to ask what proportions of households classified as poor and nonpoor over the duration of their existence were so classified every month. The data show that nonpoor households were less likely to have poor months than poor households were likely to have nonpoor months. The proportions of nonpoor households that were nonpoor each month range from a low of about 74 percent of stable nonpoor households to a high of 85 percent of newly formed nonpoor households. In contrast, the proportions of poor households that were poor each month range from a low of 52 percent for unstable poor households that changed size to a high of 77 percent for newly formed poor households (see table 5).

An important question concerns the relationship, noted in the literature on the annual dynamics of poverty, between intra-year household composition change and economic change. We looked at poverty among unstable original households in our ISDP 18-percent sample before and after a change in composition and found that, in total, 17 percent of these households changed poverty status (see table 6 and the note describing our poverty measurement procedure). Almost 63 percent of the households changing poverty status went from poor before the household composition change to nonpoor afterwards; the other 37 percent went in the reverse direction, resulting in a net decrease in the poverty rate among members of unstable original households of over 4 percentage points. Of the households that added one or more members, 19.5 percent changed poverty status, with a net reduction in poverty of 11 percentage points. The households that had several size changes resulting in net zero change

had the highest proportion changing poverty status--31.3 percent, again, with a net reduction in poverty of about 6 percentage points. The households losing one or more members were least likely to experience a change in poverty status--only 11 percent did so. But the net result of these changes was an increase in poverty of 3 percentage points, due to the families that changed type.

Among husband-wife original households, representing the largest family type, the most striking finding is the dramatic increase in poverty subsequent to a marital split for the households having the partner who kept the kids. In contrast, the new households formed by the partner not keeping the kids had no change in poverty compared with their status before the split. From data not shown, unstable households with minor children were about as likely to change poverty status as a result of composition change as all unstable households (18 versus 17 percent), but were somewhat less likely to move out of poverty (59 versus 63 percent) and somewhat more likely to fall into poverty (41 versus 37 percent). Over 16 percent of emancipated adult children leaving their parents' home had a change in poverty status, but there was no net change in poverty rate.

Annual Household Counts Under Four Alternative Longitudinal Definitions

We next consider annual household statistics under alternative longitudinal definitions. Implementing our four definitions with the 18-percent ISDP sample generated the longitudinal household counts that are shown in table 7. Definition (1)--which recognizes households as continuing so long as the reference person remains the same--and definition (2)--which continues households so long as the principal person

remains the same--both generated 1,078 longitudinal households or 5 percent more than the starting month 1 cross-sectional count of 1,030 households. Definition (3), which continues households only so long as both the reference person and the family type remain the same, generated 1,123 households, or 9 percent above the starting count. Finally, definition (4), which continues households only so long as every member remains and no new members arrive, generated 1,302 households or more than 26 percent above the month 1 count. Applying time weights to the longitudinal households under each definition (that is, fractional weights for part-year households that existed only part of the year), gives a count of 1,044.5 household years, or 1.4 percent above the starting month 1 count. (The results for all definitions are mathematically equivalent.)

In terms of duration, close to 95 percent of longitudinal households under the first two definitions existed for the entire year and the average duration for the total was over 11.5 months. Under definition (3), the average duration dropped to just over 11 months due to a somewhat larger number of part-year households. Under definition (4), average duration dropped to just over 9.5 months. Looking more closely at the part-year households generated by each definition, the predominant form of intra-year composition change recognized under the first two definitions involved the formation of new households as offshoots of continuing households (for example, adult children leaving the nest). Definition (3) recognized these kinds of changes as well, but, in addition, recognized changes in households with the same reference or principal person that changed type (for example, from husband-wife to nonfamily household or vice versa), resulting in higher counts both of dissolved and newly formed households. Definition (4) produced the highest proportion of dissolved

households and of households that both came into being and went out of existence during the 12-month span. The average duration of part-year households overall--about 5 months--did not differ appreciably among the four definitions. (Duration for dissolved and newly formed households is observed only within the 12-month period and not for the full spell of their existence.)

Implications of Alternative Longitudinal Definitions for Annual Household Type Statistics

Clearly, a number of households in the sample experienced changes in composition during the space of a year, with greater or lesser recognition of these changes by the various definitions. The question is whether different longitudinal household definitions have an effect on annual statistics. Is it appropriate, for example, to classify longitudinal households by initial family type (that is, their type as of the first month the household existed), and to what extent does such a characterization mask intra-year change?

It turns out that, on a time-weighted basis, the distribution of annual longitudinal households by initial family type is virtually the same regardless of which definition is used (see table 8). With time weights, the proportions that husband-wife households represent of the total differ by no more than two-tenths of a percentage point among the definitions shown, and the figures are as close or closer for the other family types. The distributions representing simple unweighted totals of full-year and part-year households and the distributions for full-year households show somewhat greater differences, but are still very similar, while the distributions for part-year households are strikingly different.

These patterns are the result both of the kinds of changes experienced in our sample--described in detail above--and the kinds of changes recognized by each definition. (Definition (2) is not shown to simplify comparison, as it is the only one of the four definitions that does not key off the household reference person. Distributions under this definition, nonetheless, are very similar to the other definitions on a time-weighted basis.)

It is not surprising that the time-weighted and simple total distributions are so much alike among definitions, given our findings on gross intra-year composition changes. As we saw, about equal proportions of unstable households added as lost members, experienced a marital split as a marriage, etc. But although choice of definition does not affect the distribution of longitudinal households by initial family type, there remains the question of the extent to which different definitions obscure an understanding of the intra-year household composition changes experienced by each type of household. We evaluated the extent to which two definitions--a restrictive longitudinal definition, specifically definition (1) that recognizes change only when the reference person changes, and a retrospective definition that categorizes households by type in month 12--obscured changes in family type. (One could perform similar calculations to determine the extent to which these definitions obscure changes in household size, but type changes appear more fundamental and therefore more important to capture.)

It turns out that a retrospective definition would erroneously represent 7.5 percent of total households existing in month 12 as having had the same family type for the entire year (see table 9). Ignoring the small number of families headed by single men, the percentages

misrepresented as stable range from a low of 5.6 percent for husband-wife households to a high of 10.1 percent for nonfamily households headed by women. Presumably the current CPS definition, which constructs household type distributions for various annual measures based on data for March of the following year, would yet further misrepresent household stability. Our restrictive longitudinal definition (1) performs better on average (forgoing the use of time weights to simplify the determinations), although not as well for single-parent female head families. This definition would erroneously represent 3.7 percent of longitudinal households categorized by their initial family type as having had the same type for the period of their existence, with percentages varying from a low of 1.8 percent for husband-wife households to a high of 10.8 percent for families headed by women.

Implications of Alternative Definitions for Annual Measures of Household Economic Status

We now turn to the question of whether different longitudinal household concepts have an effect on annual poverty measures, based on determining poverty status for the period of each household's existence as the sum of monthly incomes divided by the sum of monthly poverty thresholds. Our results show that the choice of longitudinal household definition has virtually no effect on the annual poverty rate calculated in the manner just described. Using the count of time-weighted households as the base, the percentage poor is virtually identical for all four definitions (see table 10)--ranging from 25.2 percent for definitions (1) and (2) to 25.4 percent for definition (3) and 25.5 percent for definition (4). The poverty rates for the total of full-year and part-year households, without

applying fractional weights to the latter, are also very similar across the four definitions. (These percentages are not in any way comparable with the CPS, given that they are based on unweighted ISDP data and developed using a different procedure.)

We see that under definitions (1) and (2), part-year households exhibit lower poverty rates than do full-year households, but there are so few part-year households that the full-year rates dominate the time-weighted figures. Under definition (3), the poverty rates for both full-year and part-year households are very similar at about 25 percent. Finally, under definition (4), full-year households have a somewhat higher poverty rate than under any other definition and part-year households a lower rate than under definition (3). The result, once more, is that the time-weighted total rate differs very little from the rates for the other three definitions.

Categorizing longitudinal households by initial family type, the poverty rates for each category are remarkably similar across the four definitions based on time-weighted household counts (see table 10). The rates for the two largest categories--husband-wife households and female head nonfamily households--differ by only two-tenths of a percentage point and eight-tenths of a percentage point, respectively. Somewhat higher poverty rates for single female head family households and male head nonfamily households are observed for definitions (3) and (4) compared with definitions (1) and (2); however, sample sizes are small for these groups. Sample sizes for single male head family households are too small to permit any conclusions about differences in poverty rates for different definitions.

Based on our earlier findings regarding the association of changes in poverty with changes in household type and size, the negligible effect of the choice of definition on annual longitudinal household poverty rates is not surprising. As we saw, only 17 percent of unstable original households and even smaller proportions of newly formed offshoots of original households fell into or climbed out of poverty as a result of a composition change. Moreover, the changes in poverty status that did occur were largely offsetting.

We need to ask the same question with regard to poverty measures as we did for measures of household type--namely, does choice of definition, while not affecting distributions in the aggregate, importantly obscure intra-year income changes? We calculated that definition (1), based on continuity of the reference person, would erroneously represent only 0.4 percent of longitudinal households as having maintained both the same family type <u>and</u> the same poverty status for the period of their existence and only another 1.9 percent as having maintained both the same size and the same poverty status. Ignoring families headed by single men, the combined percentage ranges from a low of 1.2 percent for nonfamily households headed by women to a high of 5.0 percent for female head family households (see table 11). We further calculated that definition (3), based on continuity of family type, would erroneously represent 1.8 percent of longitudinal households as having maintained both the same size <u>and</u> the same poverty status for the period of their existence, with the percentage ranging from a low of 0.4 percent for nonfamily households headed by women to a high of 3.1 percent for female head family households. (No time weights were used in these determinations.) We did not attempt to calculate the misrepresentation of poverty status based on

any type of retrospective definition, given, among other reasons, the absence of complete income data for new sample members in the ISDP.

Summary of Analysis of Intra-Year Household Change

Based on our analysis, we can make a number of observations regarding intra-year changes in socioeconomic status among the households in our very limited ISDP sample and the implications for annual longitudinal household statistics. The data clearly indicate that a sizeable proportion of our original households--over 15 percent--experienced a composition change during the 12-month period of observation, although almost three-quarters of those changes affected only household size and not family type. The data also show that a high proportion of both stable and unstable original households--almost 30 percent overall--experienced variations in poverty status from month to month. (This result undoubtedly is an overestimate of the experience in the population, given oversampling of low income households and missing income data in the ISDP.) Relatively few original households--2.6 percent of the total, representing 17 percent of unstable households--underwent a composition change that resulted in a change in poverty status, measured over the life of the household before and after. But the poverty status changes that occurred, such as the high proportion of new single-parent families that fell into poverty, have important policy implications. Overall, these findings suggest that the ongoing SIPP survey will generate a wealth of data for measurement and analysis of important patterns of intra-year social and economic change among the population.

With regard to annual statistics from our sample based on longitudinal households, our results indicate that the choice of definition does not

appear to have an impact on annual measures of poverty or of households by type, particularly using time-weighted distributions. Tabulations, not shown, from separate analysis of the 10- and 8-percent ISDP samples, similarly evidence very few differences among the four definitions. However, definitions that emphasize continuity do overstate the extent of intra-year household stability--definition (1) would misrepresent almost 4 percent of longitudinal households as having remained the same type. A retrospective definition based on family type in month 12 would misrepresent 7.5 percent of households as stable in type throughout the year. Obscuring changes in poverty associated with changes in composition is much less of a problem. Definition (1) would misrepresent in total 2.3 percent of longitudinal households as having remained the same in type, size, and poverty status, and misrepresent only 0.4 percent as having remained the same in type and poverty status. We did not attempt to explore the issue of representing the monthly income instability experienced by households in the sample.

Clearly, we have only scratched the surface of the research that should be carried out on intra-year social and economic change and implications for annual statistics. The results presented here, which are based on small samples containing numerous data problems, must at best be viewed as preliminary and suggestive in nature. Much more work will be required to determine the extent to which they can be generalized. We are currently engaged in analysis of data from the first four waves of the SIPP survey to replicate the ISDP study. We anticipate fewer data problems with the SIPP and should be able to make use of the full sample of about 20,000 original households. In addition to the definitions previously implemented on the ISDP, we intend to implement the definition

that the Census Bureau is currently considering for use with the SIPP. Developed principally by Don Hernandez and Roger Herriot, this definition combines elements of the family type definition and of the reciprocal majority definition (used in analysis of the National Medical Care Utilization and Expenditure Survey) that says a household is the same if a majority of the household members at time t represent a majority of the membership at time t + 1.

A PERSON-ORIENTED APPROACH TO HOUSEHOLD CHANGE

Both because of the ambiguities of household continuity and because the individual is a natural unit of analysis for many purposes, we have also developed some concepts that treat changing household features and fortunes as time-dependent attributes of the individual. This section presents the rationale for this approach and describes the variables that have been developed to implement it. Unfortunately, there is not a following section that shows how the approach works out either in descriptive or analytic studies. A major recoding and transformation of demographic details are needed, and we decided to concentrate that effort on the SIPP files rather than on a small sample of the ISDP. We have begun the work but underestimated the time required for completing the transformations and merging the available waves of SIPP. The general approach is certainly practical, and so far the procedures we have planned appear viable.

The individual is, in fact, the prototypical decision maker or choice agent in economic theory. Individuals having consistent preference orderings are represented in indifference curve diagrams, not households

or other aggregations of persons. Indeed, Arrow's celebrated theorem denies the possibility of a similarly well-behaved preference system for groups of persons. While the notion of a benevolent household dictator can be appealed to for salvaging the household as a unit of analysis, there remains some strain between ordinary micro-theory and empirical analysis of survey data. Certainly the household is a convenient unit for sampling. It is also a natural unit for bookkeeping since most spending and several income sources cannot be associated uniquely with individual household members. Perhaps for these reasons the household and/or family unit has been the basic unit for statistical reporting from cross-sectional surveys, but some statistics, e.g. earnings, are usually reported for individuals.

As we have seen above, however, the notion of a household becomes problematical in panel surveys. Households of fixed composition are relatively ephemeral, and there is no typical life-cycle for a household that can claim as much generality as the life-cycle of a person. Family, regarded as a network of kinship relations, has some permanence, but such a network extends over a constantly changing set of households and is a very difficult unit to sample and interview. The co-resident family units that are usually surveyed are almost as subject to change as households of which they are a part.

These considerations suggest that for many purposes the individual may be a much more tractable and logical unit for longitudinal analysis. Between birth and death most individuals go through a quite predictable progression of ages, and, in many other respects, enact careers that have common features about which we can introspect fruitfully. Most importantly, they maintain their identity and integrity as a unit

throughout their natural lives. Except for the possibility of temporary departures from the designated population (as with institutionalization, for example), and for always-present mortality, we can follow persons through time as they experience a sequence of household circumstances.

Using the individual as the unit of analysis, one must still recognize that the household is the immediate environment for a person and that a great many of the influences that affect his or her behavior derive from the household of residence. This suggests a need for a set of variables, associated with individuals as attributes, that describe succinctly and symmetrically the nature of the household and the characteristics of other household members, including kinship with the subject individual. Such variables, subject to variation from month to month, along with monthly income variables identifying major sources, are the objective of the recoding effort needed to examine short-period dynamics of both economic and household (or family) status for individuals.

The new variables for characterizing the persons sharing the subject's household are somewhat different from those commonly used in demographic work. For each of several categories of possible co-residents there are variables that indicate: (a) presence, (b) number, (c) number of females, (d) average age, and (e) standard deviation of ages. The categories currently being coded are: (1) spouse or unmarried mate; (2) child or grandchild, including all in-law, step- and adoptive descendants; (3) parents, including all in-law, step-, and adoptive ancestors; (4) siblings, including in-law, step-, and adoptive siblings; (5) relatives not elsewhere coded, such as cousins, aunts, nephews, etc.; and (6) nonrelatives. This set of 30 variables may seem somewhat cumbersome, but it allows for quite simple and flexible aggregation, and, at the same

time, permits recovery of most individual information for modest-sized families within a fixed-length vector that is identically defined for all persons. These variables are, of course, in addition to the usual age, sex, and marital status codes for the subject individual. The code for relation to the nominal family head, or the reference person in current usage, is also retained, but the information it contains is embodied in the newly defined codes which facilitate alternate specifications of primary, principal, or other sorts of persons to be accorded special status in the household or family.

At present, it is not possible to identify in the SIPP data all of the five categories of relationship mentioned above. For example, a sibling of the spouse of the reference person would not be so identified, but the sibling of the reference person would be. When the first (1984) panel is complete, it will be possible to resolve such cases by using a matrix showing relations between all pairs of persons that is being collected as part of the eighth wave interview. In subsequent panels this matrix will be obtained much earlier, and a relatively complete coding can be carried out by the time a full year of information is available for merging.

The other household characteristic that is recoded for use as a personal attribute is economic status. Our plans at present call for expressing the total monthly money income of the household as a ratio to the monthly "low income" threshold given that month's household composition. The monthly "low income" threshold is defined as a linear interpolation between annual poverty thresholds, divided by 12, and centered at midyear. These normalized "welfare ratios" can provide a meaningful series of measures of the economic adequacy experienced by a

person even if he or she changes household affiliation or experiences major household change over the 32 months of the panel survey.

More characteristics of the persons in the subject's household could be added to sex and age if desired. Labor force status and educational achievement are likely candidates. For immediate purposes of description and primitive analysis of household demographic and economic change, sex and age appear adequate.

As soon as the recoding is done and the records for a sample of persons merged to produce series of at least a year in length, we intend to develop a number of gross change tables based on alternative classifications of household circumstance for particular categories of persons. For example, we can examine how much month-to-month change there is for pre-school children in terms of the number of parents or other ancestors they live with. Such an analysis can be done for poor children separately from nonpoor, or for black children separately from white. At the other end of the age spectrum, we can examine patterns of change in household situation for elders and relate that to levels and change in economic status. Among the more exciting possibilities is the capacity to examine the patterns of change in economic status that precede or follow specific kinds of major change in household situation; e.g., divorce, marriage, widowhood, etc. A great deal of descriptive work can be done that is of interest in itself, and other sorts of simple analytic tables can serve as exploratory study of topics that may be examined more closely with fully specified structural models of behavior.

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TABLES

TABLE 1. Households by Type, ISDP 18-Percent Sample and Current Population Survey

	Month 1 ISDP 18%	Month 12 ISDP 18%	March 1979 CPS	March 1980 CPS
TOTAL (N)	1,030	1,066	77,330	79,108
Family Type				
Husband-wife	56.8%	55.7%	61.6%	60.9%
Male head family	1.0	1.0	2.1	2.2
Female head family	11.2	11.3	10.6	10.8
Male nonfamily household	9.6	9.7	10.5	10.9
Female nonfamily household	21.5	22.3	15.2	15.2
Change over 12 months in number of households		+3.5%		+2.3%

SOURCE: Tabulations of ISDP 18-percent sample extract; U.S. Bureau of the Census, Household and Family Characteristics: March 1979 and March 1980, Current Population Reports, Population Characteristics, Series P-20, No. 352, Table 19, and No. 366, Table 20.

Note: CPS weighted counts of households are in thousands; ISDP counts are unweighted.

TABLE 2. Household Composition Change Experience and Duration of Original Sample Households by Original Family Type, ISDP 18-Percent Sample

Original Family Type	Stable: Unchanged Composition	Changed in Family Type and Size	Changed in Size Only	Total Changed
		Percent during 12 Months		
Husband-wife	81.7%	2.9%	15.4%	18.3%
Male head family	70.0	10.0	20.0	30.0
Female head family	80.0	10.4	9.6	20.0
Male head nonfamily	85.9	5.1	9.1	14.2
Female head nonfamily	94.6	4.1	1.4	5.5
TOTAL	84.6	4.3	11.2	15.5
		Average Duration in Months		
Husband-wife	12.0	6.6	6.1	6.2
Male head family	12.0	(not shown--cell sizes too small)		
Female head family	12.0	7.2	6.9	7.0
Male head nonfamily	12.0	6.2	5.6	5.8
Female head nonfamily	12.0	5.9	4.7	5.6
TOTAL	12.0	6.6	6.1	6.2

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: In this table, changes in family type always include changes in size. Two original households in the sample that are included in the "stable" category also changed type--in each case two persons living as a nonfamily household got married. "Average duration" is measured from month 1 up until the first change in family type experienced by an original sample household or, if family type did not change, up until the first change in size. (As discussed in the text, some households in the "changed size only" category experienced more than one change. Also, two households that changed type had a size change first which is ignored in the categorization.)

TABLE 3. Household Size and Poverty Status of Original Sample Households by Original Family Type, ISDP 18-Percent Sample

Original Family Type	Stable: Unchanged Composition	Changed in Family Type and Size	Changed in Size Only	Total Changed
		Average Size		
Husband-wife	3.3	3.1	4.1	3.9
Male head family	(Not shown--cell sizes too small)			
Female head family	3.0	2.4	4.5	3.4
Male head nonfamily	1.2	1.4	2.2	1.9
Female head nonfamily	1.0	1.0	1.6	1.2
TOTAL	2.5	2.3	3.9	3.4
		Percent in Poverty Over Life of Household		
Husband-wife	11.1%	23.5%	14.4%	15.9%
Male head family	(Not shown--cell sizes too small)			
Female head family	35.9	33.3	54.5	43.5
Male head nonfamily	29.4	0.0	22.2	14.3
Female head nonfamily	56.9	44.4	0.0	33.3
TOTAL	26.5	29.5	20.0	22.6

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: By definition, each household in the "changed in size only" category had the same size each month of its duration, as did unchanged full-year households. Two households in the "changed in family type and size" category differed in size from month to month, because, in the assignment to categories, family type change took precedence over household size change. The poverty rates shown are not comparable with CPS rates. Poverty status is measured over the time period of each original household's existence--that is, until a change in type or size--by dividing the sum of monthly household income by the sum of monthly poverty thresholds for the months of the household's duration.

TABLE 4. Types of Household Composition Change Experienced by Unstable Original Sample Households, by Original Family Type, ISDP 18-Percent Sample

Original Family Type/ Type of Change	Percent of Unstable Households: Total	Percent of Unstable Households: Original Family Type
Total unstable households	100.0%	N.A.
Added 1+ members	45.3	
Changed size only	32.1	
Also changed type	13.2	
Net zero change in size	10.1	
Lost 1+ members	44.7	
Changed size only	30.2	
Also changed type	14.5	
Husband-wife	67.3	100.0
Added 1+ members (mainly young children)	26.4	39.3
Net zero change in size	7.5	11.2
Lost 1+ members	33.3	49.5
Changed size only (mainly adult children left)	22.6	33.6
Marital split-kids involved	5.7	8.4
Marital split, loss of spouse-no kids involved	5.0	7.5
Female head family	14.5	100.0
Added 1+ members	6.9	47.8
Changed size only	1.9	13.0
Marriage	5.0	34.8
Net zero change in size	1.3	8.7
Lost 1 + members	6.3	43.5
Changed size only	3.8	26.1
Left alone (1-person hh.)	2.5	17.4
Male head nonfamily	8.8	100.0
Added 1+ members	4.4	50.0
Changed size only	1.9	21.4
Marriage	2.5	28.6
Net zero change in size	1.3	14.3
Lost 1+ members	3.1	35.7
Changed size only	2.5	28.6
Left alone (1-person hh.)	0.6	7.1

(continued)

TABLE 4. Continued

Original Family Type/ Type of Change	Percent of Unstable Households	
	Total	Original Family Type
Female head nonfamily	7.5%	100.0%
Added 1+ members	6.3	83.3
Changed size only	0.6	8.3
Marriage	1.9	25.0
Added relatives (single-parent family)	3.8	50.0
Net zero change in size	0.0	0.0
Lost 1+ members		
Changed size only	1.3	16.7

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract. Data are not shown for unstable original male head family households because of small cell sizes (N = 3).

Note: Households that did not change type but had one or more changes in size were assigned to the "added", "lost", or "net zero" category based on their net change in size over the 12-month period of observation. Households that also changed type were assigned to the "added" or "lost" category based on the net change occurring as the result of the type change.

TABLE 5. Intra-Year Variations in Poverty Status Among Original Households by Type of Household Composition Change and Among Newly Formed Households, ISDP 18-Percent Sample

Intra-year Poverty Experience	Original Households				Newly Formed (Offshoot and Continuation) Households
	Stable: Unchanged Composition	Changed in Family Type and Size	Changed in Size Only	Total Changed	
Never poor	54.1%	52.3%	63.5%	60.4%	69.7%
Some months poor, some not poor	30.2	31.8	26.1	27.7	16.5
Always poor	15.7	15.9	10.4	11.9	13.8
TOTAL	100.0	100.0	100.0	100.0	100.0
Nonpoor households (over their life):					
% of total	73.5	70.5	80.0	77.4	82.0
Never poor in any month	73.6	74.2	79.3	78.0	85.0
Some poor mos.	26.4	25.8	20.7	22.0	15.0
Poor households (over their life):					
% of total	26.5	29.5	20.0	22.6	18.0
Poor in all months	59.3	53.8	52.2	52.8	77.1
Some not poor months	40.7	46.2	47.8	47.2	22.9

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: Classification by "never poor," "always poor," and "some months poor, some not poor" is determined for each household for each month of its existence by comparing the monthly income to the corresponding monthly poverty threshold. "Nonpoor households (over their life)" are households determined not to be poor and, conversely, "poor households (over their life)" are households determined to be poor on the basis of comparing the sum of monthly incomes for the months of the household's existence to the sum of monthly poverty thresholds. The N for newly formed households is 195. These households include offshoots formed, for example, by emancipated children leaving the parental home, plus those households formed after a change in family type or size. (In the case of original sample households that experienced multiple size changes, only the household after the last change is counted as newly formed.)

TABLE 6. Changes in Poverty Status Experienced by Unstable Households and Husband-Wife Unstable Households, ISDP 18-Percent Sample

Type of Household Composition Change	Number of Unstable Households	Percent of Row Total: Poor Before Change	Poor After Change	Left Poverty	Fell Into Poverty
Total unstable hhs.	159	21.4%	17.0%	10.7%	6.3%
Added 1+ members	72	23.6	12.5	15.3	4.2
Changed size only	51	19.6	11.8	13.7	3.7
Changed type also	21	33.3	14.3	19.0	0.0
Net zero change in size	16	25.0	18.8	18.8	12.5
Lost 1+ members	71	18.3	21.1	4.2	7.0
Changed size only	48	16.7	16.7	4.2	4.2
Changed type also	23	21.7	30.4	4.3	13.0
Husband-wife unstable households	107	15.0	15.0	6.5	6.5
Added 1+ members	42	14.3	9.5	7.1	2.4
Net zero size change	12	16.7	8.3	16.7	8.3
Lost 1+ members	53	15.1	20.8	3.8	9.4
Changed size only	36	11.1	13.9	2.8	5.6
Marital split with kids (spouse keeping kids)	9	44.4	66.7	11.1	33.3
Marital split, loss of spouse, no kids	8	0.0	0.0	0.0	0.0
Offshoots of husband-wife households	30	13.3	13.3	6.7	6.7
Emancipated adult children	24	8.3	8.3	8.3	8.3
Other half of marital split (spouse not keeping kids)	6	33.3	33.3	0.0	0.0

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: Poverty is measured over the duration of each household until the time of a family type or size change, by dividing the sum of household monthly incomes by the sum of household monthly poverty thresholds. Data are missing regarding the fate of about half of the persons leaving husband-wife households.

TABLE 7. Longitudinal Households Under Alternative Definitions by Duration, ISDP 18-Percent Sample

Definition:	1 Same Reference Person	2 Same Principal Person	3 Same Family Type	4 Same Household Members
Total households	1078	1078	1123	1302
Avg. duration (mos.)	11.6	11.6	11.2	9.6
Percent of month 1 count	104.7%	104.7%	109.0%	126.4%
Full-year households	1021	1020	984	871
Percent of total	94.7%	94.6%	87.6%	66.9%
Part-year households	57	58	139	431
Percent of total	5.3%	5.4%	12.4%	33.1%
Percent dissolved	15.8%	17.2%	33.1%	36.9%
Percent newly formed	78.9	77.6	59.0	45.2
Percent formed and dissolved	5.3	5.2	7.9	17.9
Avg. duration total part-year (mos.)	5.0	5.0	5.2	4.8
Avg. duration dissolved	6.7	7.3	6.7	6.2
Avg. dur. newly formed	4.8	4.7	4.7	4.4
Avg. duration formed and dissolved	3.0	3.0	2.9	3.0
Time-weighted households (Household-years)	1044.5	1044.5	1044.5	1044.5

SOURCE: Tabulations of ISDP 18-percent sample extract.

Note: Dissolved households existed at month 1 but no longer existed by month 12; newly formed households did not exist at month 1 but existed by month 12; formed and dissolved households existed during the year but not in month 1 or 12. To derive the time-weighted counts of households, full-year households have weight 1; part-year households have weights corresponding to the proportion of the year that each existed.

TABLE 8. Percentage Distribution of Time-weighted, Total, Full-year, and Part-year Longitudinal Households by Initial Family Type, Under Three Alternative Definitions, ISDP 18-Percent Sample

Initial Family Type Distribution — Definition:	1 Same Reference Person	3 Same Family Type	4 Same Household Members
Percent of total households, time-weighted:			
Husband-wife	56.3%	56.5%	56.3%
Single male head family	1.0	1.1	1.1
Single female head family	11.2	11.1	11.0
Male head nonfamily	9.7	9.6	9.7
Female head nonfamily	21.9	21.7	21.8
Percent of total households, unweighted:			
Husband-wife	55.8	55.0	57.7
Single male head family	1.0	1.3	1.4
Single female head family	11.1	11.4	11.4
Male head nonfamily	9.7	10.0	9.8
Female head nonfamily	22.5	22.3	19.7
Percent of full-year households:			
Husband-wife	56.6	57.7	54.9
Single male head family	1.0	0.9	0.8
Single female head family	11.3	10.5	10.6
Male head nonfamily	9.6	9.5	9.8
Female head nonfamily	21.6	21.4	24.0
Percent of part-year households:			
Husband-wife	40.4	36.0	63.3
Single male head family	1.8	4.3	2.6
Single female head family	8.8	18.0	13.2
Male head nonfamily	10.5	13.7	9.7
Female head nonfamily	38.6	28.1	11.1

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: Initial family type is the household's type during the first month of its existence. In the time-weighted tabulations, full-year households have weight 1; part-year households have weights corresponding to the proportion of each year that each existed. The part-year tabulations do not incorporate any time weights for differing durations.

TABLE 9. Misrepresentation of Intra-year Family Type Stability of Households, by Family Type, Under Two Alternative Definitions, ISDP 18-Percent Sample

Family Type Definition:	Longitudinal Definition: Same Reference Person (Family Type as of First Mo. of Existence)	Retrospective (Cross-section) Definition Based on Family Type in Month 12
	Percent for Which Family Type is Misrepresented as Stable	
Husband-wife	1.8%	5.6%
Single male head family	9.1	45.5
Single female head family	10.8	7.5
Male head nonfamily	6.7	8.7
Female head nonfamily	4.5	10.1
TOTAL	3.7	7.5
(N)	(1078)	(1066)

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: The estimates shown were constructed for the longitudinal reference person definition by determining, within each initial family type category (including households classified as full-year and part-year by the definition), what proportion of the households experienced a change in family type that did not result in a dissolution of the household. No time weights were used. For the retrospective definition, the estimates were constructed by determining, within each family type category as of month 12, what proportion of the households had not existed in that form for the entire year.

TABLE 10. Percent Poor of Time-weighted, Total, Full-year, and Part-year Longitudinal Households, and of Time-weighted Households by Initial Family Type, Under Four Alternative Definitions, ISDP 18-Percent Sample (Unweighted, not comparable with CPS)

Percent Poor — Definition:	1 Same Reference Person	2 Same Principal Person	3 Same Family Type	4 Same Household Members
Time-weighted total	25.2	25.2	25.4	25.5
Total (unweighted)	25.1	24.8	25.4	24.6
Full-year	25.5	25.5	25.5	26.5
Part-year	17.5	12.1	24.5	20.7
Time-weighted households by initial family type				
Total	25.2	25.2	25.4	25.5
Husband-wife	11.5	11.5	11.3	11.4
Single male head family	28.1	26.7	22.1	22.9
Single female head fam.	36.7	35.7	39.5	39.1
Male head nonfamily	25.7	26.5	27.3	27.7
Female head nonfamily	54.2	54.9	54.4	54.1

SOURCE: Tabulations of ISDP 18-percent sample extract.

Note: In the time-weighted tabulations, full-year households have weight 1; part-year households have weights corresponding to the proportion of the year that each existed. The part-year tabulations do not incorporate any time weights for differing durations. Poverty status is measured over the time period when each household was in existence by dividing the sum of monthly household incomes by the sum of monthly poverty thresholds for the months when the household was recognized as continuing under a particular longitudinal household definition. Poverty rates are not comparable with the CPS.

TABLE 11. Misrepresentation of Intra-Year Poverty Status and Family Composition Stability of Households, by Family Type, Under Two Alternative Definitions, ISDP 18-Percent Sample

Initial Family Type	Definition: 1. Same Reference Person		3. Same Family Type
	Percent for Which Poverty Status is Misrepresented as Stable Together with:		
	Family Type	Size Only	Size Only
Husband-wife	0.0%	1.7%	1.6%
Single male head family	0.0	18.2	13.3
Single female head family	1.7	3.3	3.1
Male head nonfamily	0.0	2.9	2.7
Female head nonfamily	0.8	0.4	0.4
TOTAL	0.4	1.9	1.8
(N)	(1078)	(1078)	(1123)

SOURCE: Unweighted tabulations of ISDP 18-percent sample extract.

Note: The estimates shown were constructed by determining, within each initial family type category (including full-year and part-year households recognized under the definition), what proportion of households had changed family type or size only but the change had not resulted in a dissolution of the household and had also moved into or out of poverty on the basis of the composition change. No time weights were used.