Still Wanting: A Re-Assessment of Poverty Dynamics and Welfare State Protections in the U.S. and Britain*

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Abstract

The welfare state promises to protect vulnerable citizens by redistributing resources. We ask how well that promise has been fulfilled in the U.S. and Britain in recent years. Drawing on individual working-age poverty histories from 1993-2003, we focus on several features related to the promise of the welfare state: the degree of change in poverty status (transience), the extent to which risk was shared (democratization), whether redistributive programs promoted transience and democratization, and whether poverty experiences differed across the two national contexts. Significantly, we tackle a key methodological challenge associated with modeling individual poverty dynamics – poverty measurement error. We find that error affects our conclusions in important ways: Poverty is less transient and democratized than previously thought, while cross-national differences are more pronounced.

Introduction

In early industrializing nations poverty was the expected life-long condition of a large segment of the population: Those born into the working class almost certainly faced a future at or barely above the level of subsistence. The rise of modern welfare states in the mid-20th century saw the establishment of a variety of measures aimed at protecting vulnerable members of society from serious want (Marshall 1950). The promise of the welfare state was that it would improve the long-range picture for those at risk of poverty, by redistributing social and economic resources. Indeed, recent research using the longitudinal data now available for individuals in many Western nations suggests that welfare state redistributive programs are meeting with some success. Many poverty spells are of short duration, and the burden of (short-term) poverty is experienced by a wider segment of the population than was evident using cross-sectional measures (Duncan 1984; Jenkins and Rigg 2001). In the terminology of Leisering and Walker (1998), poverty has become both "temporalized" and "democratized" in Western nations.

Three issues cloud this seemingly heartening picture. First, there are indications that in many welfare states a share of the population continues to experience recurrent or persistent deprivation (Jenkins 2000; Layte and Whelan 2003). Second, the refashioning of social safety nets over the past two decades—most notably in the U.S. and Britain—has prompted renewed concern about the economic well-being of vulnerable citizens in those nations (Lichter and Jayakody 2002; Lister 2001). And finally, initial studies of individual poverty histories failed to account for the unique role played by measurement error. The omission may have led to overly-optimistic conclusions about poverty dynamics, and about the effectiveness of redistributive programs in an era of reform (Breen and Moisio 2004).

In this paper we examine poverty dynamics between 1993 and 2003, comparing patterns for the working-age populations in the U.S. and Britain. Although comparative

studies find consistently higher poverty rates in the U.S. (Kilty and Segal 2003; Smeeding, Rainwater, and Burtless 2000; Valletta 2006), the two countries are useful comparators with respect to the impact of redistributive programs. Both are classed as liberal, or minimally redistributive, welfare states (Esping-Andersen 1990); and both are engaged in reforms involving welfare-to-work programs (Cebulla 2005; Walker and Wiseman 2003). At the same time, some of Britain's policies—for example, the provision of universal health care and child benefits—are more closely related to those of the highly redistributive European social democratic welfare states (Kamerman and Kahn 1997; Walker and Wiseman 2003). Thus, we can expect to find different kinds of poverty experiences in the two countries despite their similar classification and approaches to reform. For both national samples we ask how common was vulnerability to poverty over the period in question, what the entry and exit probabilities were for the group likely to transition into or out of poverty in a given year, and how effective redistributive programs were at protecting those at risk. Crucially, in answering these questions we estimate and remove the effects of error in the measurement of poverty status. Throughout, we compare our results with estimates that do not take measurement error into account, and assess the implications for understanding poverty dynamics. In so doing, we arrive at a somewhat less optimistic account than we do using uncorrected estimates, particularly for the U.S. The paper opens with a review of relevant frameworks and existing research, then describes our data and methods, and finally, turns to a discussion of our results and their implications.

Theoretical background and existing research

Conceptualizing individual poverty experiences

In the wake of the ground-breaking work carried out in the U.S. in the 1980s (Bane and Ellwood 1986; Duncan 1984), it is now widely acknowledged that understanding poverty

calls for a longitudinal perspective. For example, it is argued that the causes and consequences of long periods of poverty differ so fundamentally from those of short episodes that the two should be treated as separate social phenomena (Walker and Leisering 1998). Although short spells are never welcome, they do not usually jeopardize subsistence or overall life chances because individuals and households can respond by reducing expenditures, borrowing, or spending savings. However, these responses are unlikely to be sustainable over the long term (Fouarge and Layte 2005). Because time is important, poverty is properly modeled as a dynamic process rather than a static condition.

The conceptualization of individual poverty dynamics is, however, a matter of some debate. The field has been dominated by three broad approaches: the persistence hypothesis, the life cycle hypothesis, and the individualization hypothesis (Andress and Schulte 1998). These perspectives are based on different underlying assumptions about the causes of poverty, and generate expectations about individual poverty histories that range from pessimism through to optimism.

Underlying the *persistence* hypothesis is the pessimistic notion of a "vicious circle"—the view that certain consequences of poverty become, in turn, the causes of its enduring nature. While initial analyses individualized the problem or located it in "dysfunctional" sub-cultures (e.g., Moynihan 1969), more recent work draws attention to institutional features such as segregation, social control and social exclusion, that regulate access to a wide variety of resources (e.g., Wilson 1987). For example, labor market segmentation keeps certain groups of workers permanently trapped in low-wage work; welfare systems (re)produce their own clientele; and processes of marginalization limit access to material and social resources, including citizenship rights and integration into local communities (Shaw, Dorling, and Davey Smith 1999). Regardless of the mechanisms, the persistence hypothesis generates the

expectation that even in modern welfare states poverty status will be relatively stable over the life course.

The somewhat more optimistic *life cycle* hypothesis traces its roots to the work of Rowntree (1901) in industrializing Britain. Rowntree viewed poverty as an intermittent phenomenon linked to phases of the dominant working-class family-formation and employment patterns of the time, with risk being highest during childhood, early married life, and old age. Rowntree's conceptualization was developed in an era when state-sponsored social programs were not yet in place. Contemporary re-evaluations of his thesis show both adherence to and divergence from his formulation in Western nations, depending in large part on the scope of social welfare programs (Dale 1987; Hedstrom and Ringen 1987; Kangas and Palme 2000). Nonetheless, the basic idea stands, that income poverty reflects not only the often-persistent inequalities that follow from social location, but also a series of temporal variations over the course of individual life cycles (Rank and Hirschl 2001a, 2001b; Rigg and Sefton 2006). Thus, in contrast to the persistence hypothesis, the life cycle hypothesis leads to the expectation that poverty spells—if experienced at all—will most often be temporary.

Finally, the most optimistic view, the *individualization* hypothesis, suggests that in post-industrial societies poverty profiles are increasingly diverse and are no longer directly tied to social position. This approach builds on Beck's (1992) argument that in late modernity the influence of traditional regularities, norms, and stratification processes is waning, so that biographies are increasingly the product of individual decisions (for example, about education, employment, or family formation) and may involve shifting statuses. Applying this approach to poverty trajectories, Leisering and Walker (1998) suggest that post-industrial poverty has become both "temporalized" as life courses become increasingly discontinuous, and "democratized" as risk comes to be shared by many members of society. Temporalization indicates that the experience of poverty depends, in part, on its duration, while

democratization signifies that poverty reaches beyond an "underclass," even if only for short periods (Jarvis and Jenkins 1999). Like the life cycle hypothesis, this perspective generates the expectation of considerable movement in and out of poverty over the life course. However, unlike the other two perspectives, it suggests that (short-term) poverty experiences will affect large segments of the population.

Differences between welfare states

Both the character and the distribution of individual poverty trajectories are shaped, in large part, by welfare state policies and programs (Leisering and Leibfried 1999; Mayer and Schoepflin 1989). Most nations' social programs—unemployment insurance, social assistance, disability benefits, and pensions—were developed to buffer the threats to economic well-being encountered by individuals living in modern competitive industrial economies (Marshall 1950). Nevertheless, there is considerable cross-national variation in the extent and type of protections offered (Esping-Andersen 1990). Esping-Andersen's well-known typology of "worlds of welfare capitalism," for example, groups countries in part on the extent to which they "decommodify" labor, or free citizens from reliance on the vagaries of the labor market to maintain a decent standard of living. Higher levels of decommodification imply more redistribution of resources. This, in turn, entails less overall income inequality, which shapes the nature and distribution of poverty trajectories (Breen and Moisio 2004; O'Connor 2000). A narrower income spread leaves a greater share of the population close to the poverty line, resulting in more movement in and out of poverty and a greater proportion experiencing (often short-term) poverty over time.

While many analysts focus on the extent to which states protect against labor market risks, a number emphasize how policies protect (or fail to protect) against family-related risks (Orloff 1996; Sainsbury 1994). Key to these analyses is the organization of caregiving work. Nations may depend heavily on unpaid caring, or they may socialize this work by

establishing public services like childcare and elder care, and/or by offering cash benefits to care providers. How a nation's policies treat this work can shape care providers' vulnerability to poverty at key points in the life cycle (for example, while children are young), as well as their chances of falling into long-term poverty "traps."

Most analysts class both the U.S. and Britain as liberal welfare states—the least decommodifying of nations, and the ones least likely to socialize caregiving. However, the two countries differ on important attributes related to the distribution of poverty (Cebulla 2005; Walker and Wiseman 2003). For example, inequality has been consistently higher in the U.S. than in Britain over the period of investigation. The Gini coefficient—a measure of wealth distribution where 0 represents complete equality across all individuals in a society and 1 represents all wealth being in the hands of one individual—has hovered in the mid-.40s for the U.S. and the low to mid-.30s for Britain (Office for National Statistics and Institute for Fiscal Studies 2007; U.S. Census Bureau 2006). Moreover, while cross-sectional poverty rates in both countries were higher throughout the 1990s than the OECD average, the U.K. was similar to other European nations when it came to lifting citizens out of poverty through tax and benefit systems (Forster and d'Ercole 2005; Moller, Bradley, Huber, Nielsen, and Stephens, 2003; Valetta 2006). Indeed, despite broad parallels, it is clear that there are important differences in the British and American social safety nets in terms of the type and nature of protections offered. Overall, labor market and general risk management programs such as unemployment insurance, disability benefits, social assistance, and access to health care appear more inclusive in Britain than in the U.S. (Bartley 2003; Cebulla 2005; Walker and Wiseman 2003). Protections against family-related risks such as child benefits, working family tax credits, and parental leaves (as well as social assistance) are weak in both countries but somewhat more extensive in Britain than in the U.S. (Bashevkin 2002; Kamerman and Kahn 1997; Perrons 2000). When it comes to recent social safety net reforms, the two

countries have adopted deliberately similar strategies (Walker and Wiseman 2003). Nevertheless, benefits are, overall, somewhat more restricted in scope and generosity in the U.S. than in Britain; moreover, the U.S. system, unlike its British counterpart, is highly fragmented and therefore vulnerable to cuts driven by local political and economic concerns (Cebulla 2005). In general, then, we expect movement in and out of poverty to be more widespread in Britain than in the U.S., while poverty persistence should be more evident in the U.S. We also expect the moderating impact of redistributive programs to be somewhat greater in Britain than in the U.S.

Research on poverty dynamics

Although still in its infancy, a body of empirical research is beginning to emerge on individual poverty dynamics. This work suggests that the majority of spells are short-term and that, over time, poverty is experienced by a far greater proportion of the population than is identified by cross-sectional estimates (Bane and Ellwood 1986; Duncan 1984; Jenkins and Rigg 2001; Leisering and Leibfried 1999; Rank and Hirschl 2001b). Yet, despite the short-lived poverty of a relatively large segment of the population, there remains evidence of poverty recurrence. Many who escape return relatively quickly, and a small minority remains poor for extended periods (Devine, Plunkett, and Wright 1992; Jenkins 2000; Layte and Whelan 2003; Stevens 1999). Thus, while the evidence from cross-sectional research is most consistent with the persistence hypothesis, initial results from longitudinal research lend increasing support to the individualization and life cycle hypotheses, with only a nod to persistence.

Research also supports the notion that welfare state programs and policies play a key role in shaping poverty patterns. Emerging comparative work indicates that trajectories conform broadly to predictions drawn from the comparative welfare states literature. Poverty rates and durations are lowest in regimes where programs are most redistributive and highest

where programs are least redistributive (Duncan et al. 1993; Fouarge and Layte 2005; Goodin, Headey, Muffels, and Dirven, 1999). However, real-world divergence from the welfare regime ideal-type is also evident (Arts and Gelissen 2002). Valletta (2006), for example, finds that poverty was more persistent in the U.S. during the 1990s than it was in Britain, even though both are considered liberal welfare states. Moreover, while employment instability and family dissolution were associated with entering and remaining in poverty in both countries, government taxes and transfers were more effective at reducing poverty persistence in Britain.

Modeling poverty dynamics

The study of individual poverty dynamics is not without its methodological challenges. The most basic of these involves the definition and measurement of poverty itself. The problem turns on two issues: *absolute* vs. *relative* definition and *direct* vs. *indirect* measurement. Absolute poverty refers to the lack of sufficient resources to sustain life, while relative poverty builds on the work of Sen (1992) and others, and defines the condition as a lack of sufficient resources to maintain "an acceptable way of living *in the society in which [the individuals] live*" (Moisio 2004:19, emphasis added). Direct measurement draws on the capacity to consume, using deprivation indices, while indirect measurement draws on available resources, using household income (Roosa, Deng, Nair, and Lockhart Burrell, 2005; Saunders 2004). On the first question there is now widespread agreement that the demands of life in post-industrial societies dictate that poverty be defined in relative terms (Layte, Nolan, and Whelan 2001; Sen 2000; Townsend 1979). The direct/indirect issue, for its part, is largely resolved by adopting a longitudinal approach. Because longer periods in poverty imply greater resource depletion, and thus deeper deprivation, the study of poverty *trajectories* captures the underlying concerns of poverty research in a way that its cross-sectional counterpart cannot. In support of this, Whelan et al. (2003) find that persistent

income poverty closely corresponds with measures of deprivation, even though cross-sectional income poverty does not. In sum, the definition and measurement debates, and their resolutions, indicate that poverty is best defined using a threshold that reflects local living standards, and is best measured over time (Layte and Whelan 2003).

The imperative to measure poverty over time raises a more significant challenge: the influence of measurement error. Though seldom addressed in existing studies, the problem is that when the subject of research is change in an individual's status over time, random errors of measurement do not cancel each other out as they are thought to do in cross-sectional research (Duncan 1997; Moisio 2004). In the estimation of cross-sectional poverty rates it can be argued that errors in one direction (e.g., people observed to be poor who are actually non-poor) will cancel out errors in the opposite direction (people observed to be non-poor who are actually poor), and hence that results will not be biased. Further, in comparing rates over time it can be assumed that errors from one observation point to the next will be equivalent, and thus will not bias the estimation of population-level trends. These assumptions no longer hold when the task is to model individual poverty trajectories, because if the majority of the population is never poor (as is the case in Western nations) most error will translate incorrectly as (temporary) *movement* into poverty (Breen and Moisio 2004). As a result, estimates based on observed longitudinal measures may be quite misleading with respect to both the general character of individual poverty dynamics and the distribution of risk. In general, they are likely to portray poverty as more temporalized and more democratized than it actually is. As a result, they may also misrepresent the extent and nature of the protection afforded by welfare state redistributive programs.

Very few existing studies of poverty dynamics take measurement error into account. The ground-breaking work that does (Breen and Moisio 2004; Moisio 2004) is highly instructive, showing for the European nations considered that the failure to correct for

measurement error leads to incorrect conclusions, both within individual countries and in comparative perspective. However, the time period covered by these studies is short (three years), the analyses do not control for compositional differences that may be an important part of the explanation for cross-national differences in poverty dynamics, and this work does not assess the direct impact of redistributive programs on individual poverty histories.

Research Questions

Existing theoretical perspectives raise two important questions about poverty experiences in modern welfare states: (1) To what extent is poverty status transient (i.e., what is the nature of temporalization)? and (2) How is poverty distributed across society (i.e., to what degree is it democratized)? These questions touch on the issue of whether the promise of the welfare state is being fulfilled and thus fuel an additional question: (3) To what extent do redistributive programs promote the transience and democratization of poverty experiences? Existing research also raises new questions of particular consequence for both theory and policy: (4) To what extent are conclusions about temporalization, democratization, and the effectiveness of social safety nets affected by error in the measurement of poverty?

In this study we address these questions for the working-age populations in the U.S. and Britain, modeling individual poverty trajectories over an 11-year period (1993-2003). For each national sample we estimate the degree of stability and change in poverty status, as well as the probability of moving into or out of poverty at each time point, while controlling for a range of relevant socio-demographic characteristics. We then examine the impact of redistributive programs on poverty patterns and transition probabilities. Throughout, we rely on a modeling strategy that removes measurement error from the estimation of poverty dynamics, and we compare the results with those that do not correct for such error.

Based on theory and existing research, we anticipate that, while the majority of each national population will never experience poverty during the observation period, substantial

proportions will be vulnerable to movement in and out of poverty. We anticipate, however, that once we correct for measurement error this latter group will be smaller than it initially appeared in both countries, and that a greater proportion will encounter persistent poverty. Given the somewhat more redistributive character of the welfare state in Britain, we also expect that fewer Britons than Americans will experience "problematic" poverty histories. That is, we expect that Britons who do fall into poverty will be more likely than their American counterparts to escape, and that fewer Britons will remain in poverty throughout the observation period. Similarly, when we assess the impact of redistributive programs on poverty trajectories, we expect that vulnerable British citizens will be better protected than their U.S. counterparts. We expect, further, that greater inequality in the U.S. will be reflected in less movement in and out of poverty in that country. In other words, we expect that poverty will be both less transient and less democratized in the U.S. than in Britain. Whether the comparative picture will be strengthened or weakened by taking measurement error into account remains an empirical question, and one we address in this paper.

Methods

Data

The poverty data for this study come from the 1993-2003 waves of two nationally representative panel surveys: the U.S. Panel Study of Income Dynamics (PSID) and the British Household Panel Survey (BHPS). The covariate data are lagged one year prior to the first poverty wave, and thus are taken from the 1992 waves of these same surveys. For poverty and some covariates, we use variables derived from these two panel datasets by experts at the Department of Policy Analysis and Management at Cornell University, and

distributed as the Cross-National Equivalent File (CNEF).[1] Variables in this file are designed to be comparable across datasets even where the original measures are not identical.

The PSID and BHPS are on-going studies of a nationally representative sample of men, women, and children living in families in the United States and Britain, respectively (Hill 1992; Taylor, Brice, Buck, and Prentice-Lane, 2003) The BHPS, initiated in 1991, is an annual survey of approximately 5,500 private households containing 9,000 men and women. The PSID began with a national sample of nearly 5,000 households in 1968. Individuals were interviewed every year until 1997, after which time the interviews were carried out biennially. The PSID's use of biennial data collection means that, in order to conduct comparable analyses for the two countries, we draw poverty data from the odd-numbered years for both surveys (1993, 1995, 1997, etc.). Because the covariate measures are taken from the year preceding the first measurement of poverty in 1993, sample selections are based on survey respondents' 1992 status as household head[2] or common-law or legally-married wife/partner. We include only those individuals with complete covariate data and at least one measurement of poverty. The analytic sample from the BHPS is restricted to individuals who were of working age throughout the period under study—that is, women aged 25 to 48 years in 1992 (women generally retire at age 60 in Britain), and men aged 25 to 53 in 1992 (N=4,153). The PSID sample includes those who were 25 to 53 years old in 1992 (N=4,813).

Measures

Poverty. In cross-national work, poverty is most commonly measured using total household income, adjusted for household size and then compared to a relative poverty threshold (Forster 2001; Moisio 2004). We follow this practice, defining poverty as an

[1] See http://www.human.cornell.edu/che/PAM/Research/Centers-Programs/German-Panel/cnef.cfm
[2] Household heads are defined as the husband in couple households, and the male or female adult in single-adult households.

adjusted household income (ADHI) that falls below 60 percent[3] of the national median ADHI for the year and country in question. We calculate adjusted household income as the sum of the incomes over the year preceding data collection for all household members, divided by the square root of household size, as is common practice in comparative poverty research. The resulting poverty measure (yes=1; no=0) is then assigned to each individual in the household, assuming an equivalent standard of living for all household members. Two sets of poverty measures are constructed, based on market income and disposable income. Market income is the sum, across all household members, of labor income, asset income, income from private transfers, and private retirement income. Disposable income is the sum, across all household members, of all of the foregoing *plus* income from public transfers and social security pensions, and *net* of government taxes and deductions.[4]

Our analyses also control for a number of socio-demographic characteristics whose links to poverty are well established in the literature (Forster 2001; Fouarge and Layte 2005; Jarvis and Jenkins 1999; McKernan and Ratcliffe 2005; Moller et al. 2003; O'Connor 2000; Rank and Hirschl 2001b; Rigg and Sefton 2006; Valletta 2006).

Employment status. Measures of the respondent's relationship to the labor market distinguish three categories of workers. Unemployed (yes=1; no=0) refers to those who were unemployed and looking for work. Out of the labor force (yes=1; no=0) refers to non-employed individuals and all others—that is, those who were retired, permanently or temporarily disabled, providing family care or keeping house, in school, on workfare or other government training schemes, in prison, or engaged in an unspecified activity. Employed

[3] Sixty percent is the cut-point used in the majority of cross-national poverty studies.
[4] For the PSID, information on total taxes and deductions was not collected from the 1992 wave onward. The CNEF variable used in our analyses estimates federal and state income taxes using the National Bureau of Economic Research TAXSIM model (Butrica and Burkhauser, 1997; Feenberg and Coutts, 1993), applied to existing income data`. For the BHPS, disposable incomes were calculated from net income figures by analysts at the Institute for Social and Economic Research, where the survey originates, and included in the original dataset (see Bardasi, Jenkins, and Rigg, 1999).

(reference group) are those working for themselves or an employer at the time of the survey, as well as those who were temporarily laid off or on sick leave or maternity leave.

Self-rated health. The measure of health differs slightly in the two surveys. In the U.S., respondents were asked "Would you say your health in general is: excellent, very good, good, fair, poor, don't know?"[5] For individuals who are not household heads, responses are by proxy (given by the household head). In Britain, all respondents were asked: "Please think back over the last 12 months about how your health has been. Compared to people of your own age, would you say that your health has on the whole been: excellent, good, fair, poor, very poor, don't know?" Our models treat the 5-category scale available in each survey (with slightly different labels) as an ordinal variable (excellent=1; very good/good=2; good/fair=3; fair/poor=4; poor/very poor=5).[6]

Age. Age is measured in years and represented by the following categories: 25-29 years (reference group), 30-34 years (yes=1; no=0), 35-39 years (yes=1; no=0), 40-44 years (yes=1; no=0), 45-49 years (yes=1; no=0), and 50-53 years (yes=1; no=0). In the British sample the oldest age group contains only men, due to the earlier retirement age of women in that country.[7]

Cohabitation status. Respondents are classified as: married or living as a couple (reference group); no longer partnered (i.e., widowed, divorced, or separated—yes=1; no=0); or single (never-married—yes=1; no=0).

Number of children in the household. This variable measures the number of children under age 18 living in the household. Respondents are classified as having no children (reference group), one child (yes=1; no=0), two children (yes=1; no=0), or three or more children (yes=1; no=0).

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[5] The very small number of cases in the 'don't know' category for each national sample was recoded missing.
[6] We note that the construction of the CNEF self-rated health variable also assumes equivalence across the two surveys, for the waves in our analyses.
[7] We categorize age because of the extremely lengthy run times we encountered for models using a continuous measure.

Gender. Gender is coded 1 for women and 0 for men.

Racial/ethnic group. This variable captures membership in a racialized group. PSID respondents were asked "Are you White, Black, American Indian, Aleut, Eskimo, Asian, Pacific Islander, or another race?" BHPS respondents were asked, "Could you tell me which of these groups you consider you belong to? White, Black-Caribbean, Black-African, Black-other, Indian, Pakistani, Bangladeshi, Chinese, other ethnic group." We code responses as non-white (yes=1; no=0) and white (reference group).

Education. There is no simple measure of education common to the two countries. Thus, we construct measures with roughly equivalent impacts on labor market attainment. These measures are coded as minimum education (reference group), medium education (yes=1; no=0), or higher education (yes=1; no=0). In the U.S., these categories correspond to less than a high school diploma; a high school diploma; and beyond a high school diploma. In Britain, the three categories represent no qualifications; O or A levels or their equivalent; and further education.

Occupational class. We focus on whether or not the respondent was engaged in a routine or semi-routine occupation at the time of the 1992 survey (or at the time of the most recent job if they were not employed in 1992). Routine/semi-routine employment is defined by several features: being regulated by short-term labor contracts; involving the exchange of wages for labor; being highly supervised; and having little or no room for employee discretion. For the British data, this variable is based on the Office of National Statistics classification of an individual's current or most recent occupation (Office for National Statistics 2005). For the U.S. data, it is identified by a 3-digit occupation code from the Census of Population Alphabetical Index of Industries and Occupations (U.S. Department of Commerce 1971). Responses are coded 1 for those whose occupation is/was routine, and 0 for those currently/formerly engaged in a non-routine occupation. In order to not bias results

through the loss of individuals with missing occupation data (most often women, especially in the U.S.), we also include a dummy variable representing 'missing on occupation' (yes=1; no=0).

Table 1 gives weighted distributions for these socio-demographic variables. Social profiles are broadly similar for the two countries, with a few exceptions. The U.S. had a larger working-age racialized population (16 percent, vs. 5 percent in Britain), as well as a greater proportion with "medium" education (58 percent, vs. 34 percent in Britain) and a greater proportion who said they were in "mid-range" health (26 percent, vs. 15 percent in Britain). Britons were more likely to be living with a partner (84 percent, vs. 70 percent in the U.S.), to have several children (27 percent, vs. 13 percent in the U.S.), and to have a "minimum" education (34 percent, vs. 15 percent in the U.S.).

Analysis

As noted above, one of the challenges in modeling individual poverty trajectories is the role played by measurement error. We address this issue by using latent transition analysis (LTA), a modeling technique that allows us to estimate both individual change in poverty over time, and any measurement error associated with this process (Collins, Hyatt, and Graham 2000; Collins and Wugalter 1992). LTA consists of two components: (1) a *measurement* model that identifies latent states (i.e., states of being poor or not poor that are not directly observed); and (2) a *structural* model that estimates change in the latent state over time (i.e., the probability of moving from one poverty state at time t to another at time $t + 1$) (Bray 2006; Nylund, Muthén, Nishina, Bellmore, and Graham, 2006). The measurement model describes the underlying structure of poverty (i.e., individuals' "true" poverty status), which is assumed to be measured with a certain amount of error. This component of the model uses information on covariates and repeated poverty observations to estimate the error in measurement, thereby allowing it to be removed from the LTA parameter estimates.

Preliminary measurement models indicated that poverty status was best captured by two classes: a poor class and a non-poor class, each being measured with differing degrees of error.[8]

The structural part of the model can be expressed in various ways. Initial investigation indicated that a latent mover-stayer model, or mixed Markov model (Langeheine and van de Pol 1990), fit the data best. Rather than specifying a single process of change, the mover-stayer model incorporates heterogeneity. Specifically, the model denotes two underlying processes occurring within the population. One, a *mover trajectory*, includes those who are likely to move in and out of poverty over time, depending on their socio-demographic characteristics in 1992 and their poverty state at time *t - 1*. The second, a *stayer trajectory*, refers to a group whose probability of changing poverty status during the observation period can be fixed to zero. The model also allows for the inclusion of covariates that help define differences in initial poverty states and trajectories based on social location (Figure 1). Preliminary investigation determined that the best fit to the data was achieved using a mover-stayer model in which: (1) stayers were allowed to be both poor and non-poor; and (2) movers' transition probabilities (their probabilities of moving from one poverty state to another between *t* and *t + 1*) were constrained to be the same across all pairs of waves. Initial investigation also showed that the best-fitting model estimated the effects of covariates on mover-stayer class membership, while controlling for their effects on initial poverty status.[9]

The specification of the mover-stayer latent poverty transition model is given by

$$F_{y_1 y_2 \ldots y_6} = N \sum_{c=1}^{C} \sum_{x_1=1}^{2} \sum_{x_2=1}^{2} \ldots \sum_{x_6=1}^{2} \pi_{c|z} \delta_{c,x_1|z} \tau_{c,x_2|x_1} \tau_{c,x_3|x_2} \ldots \tau_{c,x_6|x_5} \rho_{c,y_1|x_1} \rho_{c,y_2|x_2} \ldots \rho_{c,y_6|x_6}$$

where:

[8] Results for the various model fitting steps are shown in Appendix A.
[9] See Appendix A for details of the model fit assessment.

- $F_{y_1 y_2 \ldots y_6}$ is the expected frequency in the $y_1, y_2, y_2, y_3, y_4, y_5, y_6^{th}$ cell of the six-way transition table and is a function of the sample size N, initial probabilities π and transition probabilities. The latent variables are denoted by c (the mover-stayer classes) and x_i (the time-varying latent health states).
- N is the number of respondents;
- the time-varying latent poverty states are given by x_t, where $1 \leq x_t \leq 6$;
- the time-varying observed poverty states y_t, where $1 \leq y_t \leq 6$;
- the vector of time-constant social predictors at occasion t_1 is denoted by z;
- the time-constant latent mover-stayer class is denoted by c, where $1 \leq c \leq 2$;
- $\pi_{c|z}$ is the probability of membership of the latent mover-stayer class c, given the set of background predictors z;
- δ_{c,x_t} is the distribution of the latent poverty states at time t_1 in mover stayer class c, given the set of background predictors z;
- $\tau_{c,x_t|x_{t-1}}$ denotes the transition probability of moving from latent poverty state x_{t-1} to latent poverty state x_t in mover-stayer class c; and
- $\rho_{c,y_t|x_t}$ is the conditional response probability y_t in mover-stayer class c, given latent poverty state x_t.

In summary, four types of parameters are estimated in our models: (1) the probability (π) of latent mover-stayer class membership (i.e., the probability of being a mover vs. a stayer), given covariate status at t_0; (2) the probability of being non-poor vs. poor at wave 1 (δ), given latent mover-stayer class membership and covariate status at t_0; (3) the probability of transitioning (τ) between latent poverty classes (i.e., from poverty to non-poverty and vice-versa) at each wave (fixed to 0 for stayers, and equal across all pairs of consecutive waves); and (4) the observed response probabilities (ρ), or the probability of scoring 1 (or 0) on the

observed poverty measure for those estimated to be in the "true" poor and non-poor classes (fixed to 1 and 0 for stayers).

The models were estimated using Mplus software (Version 4.2.1.1), which enabled us to take account of the surveys' clustered sampling designs, apply survey weights that adjust for unequal probabilities of being sampled, and estimate models with missing data under the assumption of data missing at random (Muthén and Muthén 2006). These features, along with our latent variable modeling strategy, allow us to generate the most accurate possible estimates for working-age poverty dynamics in the U.S. and Britain.

Results

A look at observed poverty dynamics

For comparative purposes, we begin with a basic description of the key components of poverty dynamics using *observed* poverty data (Table 2). The first two rows of Table 2 show the aggregate, cross-sectional poverty rates for each wave, drawing attention to the contexts within which individual dynamics occurred. In any given year, between 13 and 17 percent of working-aged adults in Britain and the U.S. were poor. On the whole, poverty was somewhat less common in Britain than it was in the U.S., averaging 14.3 percent for the former and 15.2 percent for the latter; however, this difference is small, suggesting that overall risks in the two countries were similar. Aggregate statistics also show that the U.S. saw a dip in poverty rates following the 1996 welfare reforms, but that the decline was short-lived. Britain saw an overall, if somewhat "bumpy," decline over the period.

These poverty rates suggest that the majority of the population remained non-poor throughout the observation period. However, even relatively moderate and stable population-level poverty may conceal considerable movement in and out of poverty on the part of individuals. Capturing this change requires attending to individual dynamics, as displayed in

the remainder of Table 2. From rows 3 and 4 we note several features of these dynamics. First, the total proportion observed to be poor at one or more of the six waves is at least twice as high as the average cross-sectional poverty rates. This is in line with other research findings that, over time, poverty affects a larger segment of the population (i.e., it is more democratized) than is indicated by cross-sectional data. In the U.S., 31.7 percent of the working-age population experienced at least one poverty spell between 1993 and 2003, and in Britain this figure was 34.7 percent. Expected national differences in movement into and out of poverty are borne out by the finding that temporary poverty was more common in Britain than in the U.S. (33.3 percent of Britons were poor for between one and five of the six waves, vs. 28.6 percent of Americans). Still, this difference is surprisingly small, given the substantial gap in inequality indices between the two countries noted earlier. Finally, consistent with the notion that poverty is more transitory than previously thought, persistent poverty was relatively uncommon. Only 3.1 percent of Americans, and only 1.4 percent of Britons, were poor at all six observation points. At the same time, the two-fold difference between countries suggests that persistent poverty was of greater concern in the U.S. than in Britain.

While stable poverty was relatively rare, returns to poverty were not. In both nations the experience of poverty in wave 1 is a strong predictor of its recurrence in later waves (Table 2, rows 5 and 6). As with persistence, the two countries differed in this regard. The risks of returning to poverty were always greater in the U.S. than in Britain. On a more positive note, the chances of returning to *non*-poverty among those who were non-poor at wave 1 (Table 2, rows 7 and 8) were higher than the chances of returning to poverty; and here there is little discernable difference between the two nations.

The estimates of poverty dynamics discussed thus far refer to the entire population, the majority of which was either poor or non-poor throughout. To gain a more focused picture of observed poverty dynamics among those whose status changed, we determine the rates of transition into and out of poverty for the mover class only using a mover-stayer model that specifies *no error* in poverty measurement. The results show little cross-national difference in the turnover in poverty, but a clear difference between exit and entry probabilities. The probability of leaving poverty from one wave to the next (.49 for the U.S. and .46 for Britain) was about 2.5 times greater than the likelihood of entering (.21 for the U.S. and .18 for Britain).

Thus far, we have a rough picture of poverty dynamics in the two countries that is consistent with earlier work (Bane and Ellwood 1986; Duncan 1984; Jenkins and Rigg 2001; Leisering and Leibfried 1999; Rank and Hirschl 2001b). Long and uninterrupted poverty spells were not common and, among movers, the chances of leaving poverty were greater than the chances of entering. In addition, poverty touched far more lives when viewed longitudinally than was apparent using cross-sectional data. At the same time, there is evidence of persistence. Even a single experience of poverty (in wave 1) was a fairly strong predictor of its recurrence at some point during the observation period. Finally, although there are indications that Britons experienced less persistent poverty than Americans, individual poverty dynamics appear to be patterned in broadly equivalent ways in the U.S. and Britain. In the following section of the paper, we examine whether accounting for error in the measurement of poverty by using latent estimates changes these conclusions based on observed poverty.

Taking measurement error into account using LTA

Table 3 gives the LTA-derived reliability estimates for the measurement of poverty in the U.S. and Britain over the period of observation.[10] It shows that in both countries measurement error in poverty dynamics is more often associated with a failure to accurately identify those who were poor, than with a failure to identify those who were not. In the U.S., we estimate that 20 percent of those in the (true) poor class in any given wave were observed (erroneously) to be non-poor. For Britain, the corresponding figure is 12.7 percent. Conversely, the proportion of the population classified as non-poor but observed to be poor is only 8 percent for the U.S. and 6.8 percent for Britain. Thus, our measurement model tells us that poverty is not well identified and that it is measured less accurately than non-poverty.

These findings have several implications for longitudinal research on poverty. First, in the case of cross-sectional measurement, they suggest that the assumption that errors in either direction cancel each other out is problematic. Instead, these estimates may *misestimate the extent of poverty* at any given point in time. Second, with regard to longitudinal research, a failure to identify all individuals who are poor in a given wave raises the possibility that studies underestimate poverty persistence, and thus *over-represent its transience*. Third, underestimating persistence implies overestimating the degree of movement in and out of poverty, which may in turn lead researchers to *overestimate the democratization of poverty*.

With these concerns in mind, we turn to an assessment of poverty dynamics that corrects for measurement error. We draw on estimates obtained from the latent transition analysis to describe wave-to-wave stability and change in poverty status. Table 4 presents descriptive statistics for the two countries, calculated in the same manner as those in Table 2 but using individuals' *latent* rather than observed poverty status. Comparing the estimates in

[10] A more extended table of parameter estimates is available on request, from the first author.

the two tables provides information about how measurement error influences our understanding of poverty dynamics.

From the first two rows of Table 4, three points are worth noting about measurement error and the assessment of population-level trends. First, the post-welfare reform dip in U.S. cross-sectional poverty rates seen in Table 2 does not occur; instead, very little change over time is evident. This suggests that the gains observed in 1999 and 2001 were more apparent than real. Second, British poverty rates show a U-shaped trend over the course of the study that was not visible in the observed data. From this, we gain some assurance that the smoothing of the aggregate poverty trend for the U.S. is not simply an artifact of the method. Third, the overall picture with regard to population-level poverty is similar for the two countries, averaging 14.5 percent for the U.S. and 14.1 percent for Britain.

Cross-national distinctions come into sharper focus when individual-level poverty dynamics are examined. Comparing the figures in the remainder of Table 4 with their counterparts in Table 2 reveals two important ways in which measurement error influences our understanding of these dynamics for the U.S. and Britain. First, from rows 3 and 4 it can be seen that, as expected, poverty is considerably more stable (i.e., less temporary) in both countries than is indicated by observed measures. In the U.S., 12.3 percent are poor throughout (vs. 3.1 percent observed) and only 4.5 percent are temporarily poor (vs. 28.6 percent observed). For Britain, 5.7 percent are poor throughout (vs. 1.4 percent observed), and 20.5 percent are temporarily poor (vs. 33.4 percent observed). Consistent with these shifts, the fractions of wave 1 poor returning to poverty in subsequent waves (rows 5 and 6), and of wave 1 non-poor returning to that state in later waves (rows 7 and 8) are larger for both countries once measurement error is taken into account. The increase is especially evident for returns to poverty in the U.S., again highlighting the difference between the two countries with regard to poverty persistence.

Second, a corollary of this greater stability is that the proportions ever experiencing poverty (a measure of democratization) are far smaller using latent poverty than they are using observed. Once again, the shift is more pronounced for the U.S.: Only 16.8 percent of working-age Americans were poor at one or more waves according to the latent estimates, compared with 31.7 percent using observed poverty. For Britain the corresponding error-corrected figure is 26.2 percent, versus 34.7 percent for observed poverty (Tables 4 and 2, row 3). Taking measurement error into account therefore leads to different conclusions about the democratization of poverty than were reached using observed data. For both countries the experience was less widely distributed than it appeared based on observed poverty. Moreover, this is particularly true for the U.S., bringing to light substantial between-country differences in democratization.

A third way in which measurement error influences our understanding of cross-national individual-level poverty dynamics involves the likely direction of movement (into or out of poverty) among movers. Using the observed data we saw that, overall, wave-to-wave transition probabilities were quite high among movers, and of similar magnitude in the two countries. We also saw that exits were more than twice as likely as entries. After correcting for measurement error, both kinds of transition are considerably less likely than they appeared using observed poverty. Moreover, this is especially so among Americans, and for entry into poverty. The probability of entering poverty in the U.S. was .04 (vs. .21 using observed poverty) and in Britain, it was .08 (vs. .18 using observed poverty). The likelihood of leaving poverty in the U.S. was .14 (vs. .49 using observed poverty) and in Britain, it was .25 (vs. .46 using observed poverty). These error-corrected transition probabilities tell us that among movers, year-to-year change is not common and the likelihood of entering poverty is very rare indeed. What is perhaps most noteworthy about the transition probabilities is that change, in both directions, was almost twice as likely in Britain as in the U.S. This

observation lends further support to an emerging picture of poverty as more transient in Britain than in the U.S.

The differences between observed and latent poverty estimates are generally consistent with the work of Breen and Moisio (2004). Like these authors, we find that without taking measurement error into account we would draw incorrect conclusions about poverty dynamics both within individual countries and in cross-national perspective. Our results show that for both countries we would infer that poverty status was more transient than it actually was. Conversely, the extent of persistent poverty, evident in both countries but particularly prominent in the U.S., would be greatly underestimated. We would also conclude that the experience of poverty was more democratized—more widely distributed among members of the working-age populations—than it actually was. And finally, important differences between the two countries with respect to democratization and transience (both greater in Britain) would be masked. These are all features of individual poverty dynamics that bear on the question of whether the promise of the modern welfare state has been fulfilled. They suggest that the answer to this question is, "Less than we thought for both countries, but especially so for the U.S."

Assessing the impact of redistributive programs

The impact of the welfare state on poverty dynamics can be measured directly, using household-level information about redistributive programs. Table 5 compares results from two latent mover-stayer models. In one, poverty status is based on market income (before taxes and public transfers), while in the other, poverty status is based on disposable income (after taxes and public transfers).[11] The percent change figures (columns 3 and 6) reflect the influence of redistributive programs on poverty dynamics in each country.

[11] Both models control for compositional differences in the two populations with respect to relevant covariates, in order to generate the most meaningful cross-national comparisons possible. More extended output from the models is available on request, from the first author.

Looking first at mean aggregate poverty, we see that, on average, taxes and public transfers decreased the proportion of the working-age population experiencing poverty over the period of observation. The reduction was greater for Britain (19.3 percent) than it was for the U.S. (10.2 percent), suggesting that the British state more effectively decreased vulnerability through social transfers.

Redistributive programs also affected individual poverty dynamics and here, too, we find clear differences between the two countries. Social transfers did a much better job of making poverty a temporary experience in Britain than in the U.S. The proportion of Britons in persistent poverty was 41 percent lower after taxes and transfers than before, while the reduction was only 3.6 percent for the U.S. This occurred even though the absolute size of the always-poor group was smaller in Britain before taxes and transfers. Redistributive programs also did a better job of democratizing poverty experiences in Britain than in the U.S. The hoped-for result here is an increase in the proportion ever poor. While this may seem counter-intuitive, it follows from the use of a relative measure of poverty. When poverty is relative, a share of the population must, by definition, be poor (i.e., at less than 60 percent of the median). Thus, the most egalitarian scenario is one in which exposure 'rotates' through the entire population—that is, where every individual experiences periods of income at less than 60 percent of the median. In this (unrealistically) ideal scenario the proportion experiencing temporary poverty over the long term is 100 percent, while the proportion in stable non-poverty is zero. Our results show that redistributive programs brought about a 10 percent increase in temporary poverty in Britain but a 28 percent *reduction* in the U.S. In neither country did redistributive programs democratize risk by exposing a greater proportion of the stable non-poor; instead, the impact was minimal (a 3.1 percent increase) in both countries.

Transition probabilities calculated for the mover class give more focused information on how redistributive programs protected vulnerable individuals in the two countries. They

show that taxes and transfers decreased the probability that movers would enter poverty, and that they did so more effectively in the U.S. (15.4 percent) than in Britain (1.5 percent). In absolute terms, however, the differences were tiny, as mover entry probabilities are extremely low in both countries even before redistribution. More meaningful shifts are seen for exit probabilities, which rose in both countries as a result of social transfers. The British state was particularly successful in this regard. Redistribution increased movers' chances of leaving poverty year-to-year by over 47 percent (vs. 15.6 percent in the U.S.). Thus, British taxes and transfers not only tended to shift individuals out of persistent poverty; they also did a better job than U.S. programs of improving the chances that movers experiencing poverty would escape. Once more, this suggests that British programs rendered the experience of poverty more temporary in nature than did their American counterparts.

Measurement error and the assessment of redistributive programs

We now return to the issue of measurement error, this time to ask whether our conclusions about the impact of redistributive programs in the U.S. and Britain would be different had we relied on observed data. Table 6 presents the same information on working-age poverty dynamics as Table 5, but substitutes observed figures. Again, we focus on three aspects of these dynamics: average population-level rates; the distribution of stable non-poverty, stable poverty, and temporary poverty; and the character of movement for the mover class. The first row of Table 6 shows that, by observed measures, redistributive programs reduced mean population-level poverty. As with latent poverty, the reduction was greater for Britain (15.4 percent) than it was for the U.S. (10.1 percent); but without taking measurement error into account we underestimate the impact of British programs, along with the magnitude of the difference between the two countries in population-level effectiveness.

Turning to individual dynamics, we also see that measurement error distorts both within-country effects and between-country differences. Taken together, the figures in Table

6 show that the U.S. reduction in population-level poverty manifested at the individual level as less persistent poverty. This is a different conclusion than we reached using latent poverty, where we saw little impact on persistent poverty for the U.S., along with a decrease in temporary poverty (or less democratization). For Britain the observed story is that decreased population-level poverty played out among individuals as a shift from persistent to temporary poverty among individuals (the former decreased by 77 percent, while the latter increased by 23 percent). Latent poverty showed the same general pattern for Britain; but it revealed a more substantial population-level decrease accompanied by less dramatic changes in persistence and democratization at the individual level.

Conclusions about the impact of redistributive programs on movement into and out of poverty are also affected by measurement error. Transition probabilities are biased downward for exits, and suggest, erroneously, that taxes and transfers *increased* entry into poverty. For both countries, this leads to less favorable assessments than are warranted, about the impact of social programs on poverty transience. At the same time, between-country differences in program effectiveness—more favorable in the U.S. for entries and in Britain for exits—are muted.

In sum, without correcting for error in the measurement of poverty we would underestimate the extent to which redistributive programs reduced population-level poverty in Britain, and thus the difference between the two countries in that regard. At the individual level we would mis-estimate certain within-country effects. For changes in persistent and temporary poverty, we would reach more optimistic conclusions about the success of redistributive programs than are justified; and this is true for both countries. On the other hand, we would conclude from both countries' mover entry and exit probabilities that programs were less effective than they actually were. Finally, for some aspects of individual dynamics we would underestimate between-country differences in program effectiveness.

Most importantly, we would paint U.S. programs in a better comparative light than we should regarding the effectiveness of social transfers at reducing persistent poverty.

Discussion

At its inception, the promise of the welfare state was that it would protect vulnerable citizens by redistributing social and economic resources—that it would minimize poverty persistence and more equitably distribute the experience of poverty. In this study we asked how well that promise has been fulfilled for the U.S. and Britain in recent years. We took as our evidence individual poverty histories over the period 1993-2003, for the working-age populations in the two nations. In modeling these dynamics we focused on several features related to the promise of the modern welfare state: the degree of change in individuals' states over time (temporalization, represented by persistence at one extreme, and transience at the other), the extent to which poverty experiences were widely distributed throughout each national population (democratization), whether each country's redistributive programs promoted temporalization and democratization, and whether poverty experiences differed in expected ways across the two national contexts. Significantly, in addressing these questions we tackled a key methodological challenge associated with modeling individual dynamics—the influence of measurement error. Our analysis moved beyond the very few existing comparative studies that take measurement error into account in several respects. We examined poverty histories over an extended time period, we controlled for socio-demographic characteristics known to be linked with poverty, and we directly assessed the impact of redistributive programs.

Our analysis has yielded a number of important findings, beginning with the observation that most measurement error stems from unreliability in the identification of those who are poor. This problem has substantial consequences for conclusions about

individual dynamics and the relative performance of welfare state programs. Focusing first on individual dynamics, we find that stability is considerably more common than change when it comes to poverty status. Studies based on observed poverty depict it as more fluid than it actually is, and therefore overestimate its transient nature and underestimate its persistence. Our results show, further, that measurement error represents poverty as touching the lives of more individuals, over time, than it actually does, thereby overestimating its democratization. As such, our error-corrected estimates provide greater support for the persistence hypothesis than those based on observed poverty. By the same token, our findings do not offer strong support for the life cycle or individualization hypotheses, both of which view poverty as a relatively transient state, and the latter of which implies that poverty experiences are widely distributed throughout society.

Our results also address the question of how national contexts shape individual poverty dynamics. A number of distinctions between these two reforming liberal welfare states were either muted or obscured altogether by measurement error. Importantly, our expectations about between-country differences in the democratization of poverty—only very marginally upheld using observed data—received solid support once we corrected for measurement error. A substantially greater proportion of Britons than Americans was poor at some point during the study, indicating that poverty was more democratized in Britain than in the U.S. Paired with this is the finding that Britons in the mover group were more likely to leave poverty than their American counterparts, suggesting that poverty was more transient among movers in Britain. The observed data, by contrast, led us to the opposite conclusion regarding exits. Similarly, once we correct for measurement error we find a sizeable group in persistent poverty in the U.S. and a much smaller group in that category in Britain—again conforming to expectations. Using observed data, persistence does not stand out as a problem in either country. Finally, consistent with our predictions, redistributive programs generally

protected Britons better than they did Americans over the period of observation. Importantly, this distinction was muted using observed data. The accumulated evidence that measurement error can affect the comparative story, even for two nations with broadly similar approaches to social welfare, is a unique and important contribution of our study.

Despite its strengths, our study has several potential limitations. One is that our observation of poverty every two years may have underestimated movement. As noted, this approach was necessitated by the 1997 change in PSID's data collection procedures from annual to biennial. Nevertheless, our 11-year observation time frame is considerably longer than that of comparable observed and latent analyses (Breen and Moisio 2004; Layte and Whelan 2003; Valetta 2006), giving us confidence that we have adequately captured long-term processes. A second potential limitation is the impact of selective dropout from panel surveys. Those from poorer households were more likely to drop out, and this could result in the overestimation of poverty transience. However, the LTA applied a robust full information ML algorithm to all available data, thereby correcting for bias when data are missing at random (Little & Rubin, 1987). A third limitation concerns our use of income (indirect) poverty. Some argue that a more appropriate strategy is to include direct measures of material deprivation because living conditions are shaped by more than current income and family composition (Citro and Michael 1995; Moisio 2004). However, as noted earlier, the direct/indirect issue is largely resolved by adopting a longitudinal approach, since longer periods in poverty imply greater resource depletion (i.e., deprivation), and persistent income poverty closely corresponds with measures of deprivation (Whelan et al. 2003). A final limitation concerns the use of a threshold to define poverty status. Some have advocated that movements just above and below the threshold may be too small to be meaningful in terms of living standards, and that income changes of at least 20 percent may more adequately capture economic hardship (Valetta 2006). Once again, however, the advantages of longitudinal

research are apparent. Just as we have more confidence that income poverty reflects real deprivation when viewed over the long term, we are assured that a longitudinal approach captures true economic hardship more accurately than a single point (or two) in time—all the more so when the period is as lengthy as the one we cover.

What are the implications of our results for social policy? Two decades ago, Bane and Ellwood (1986) argued that poverty was becoming increasingly short-term and broadly distributed throughout society. Their work marked a period in the history of poverty policy where agency was (re)discovered. As study after study confirmed their findings (Jenkins and Rigg 2001; Leisering and Leibfried 1999; Rank and Hirschl 2001b), social policy shifted its emphasis from promoting redistribution and institutional change to promoting individual responsibility and positive life course planning (Alcock 2004:397). This is nowhere more evident than in the U.S., where the 1996 Personal Responsibility and Work Opportunity Reconciliation Act ended "welfare as we know it." Even Britain's "New Deals" insist on recipients' obligations rather than on citizens' rights to the protections offered by welfare state programs (Cebulla 2005). Our findings of relatively little transience and democratization of poverty in both these nations, over a period of observation that spans these reforms, indicate that many citizens are still wanting. They suggest, further, that these nations' welfare state protections are also wanting, and that—especially in the U.S., where persistence continued to characterize the poverty experiences of a substantial segment of the working-age population—structural change and redistribution must remain key elements of anti-poverty policy.

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Figure 1: The Mover-Stayer Latent Transition Model

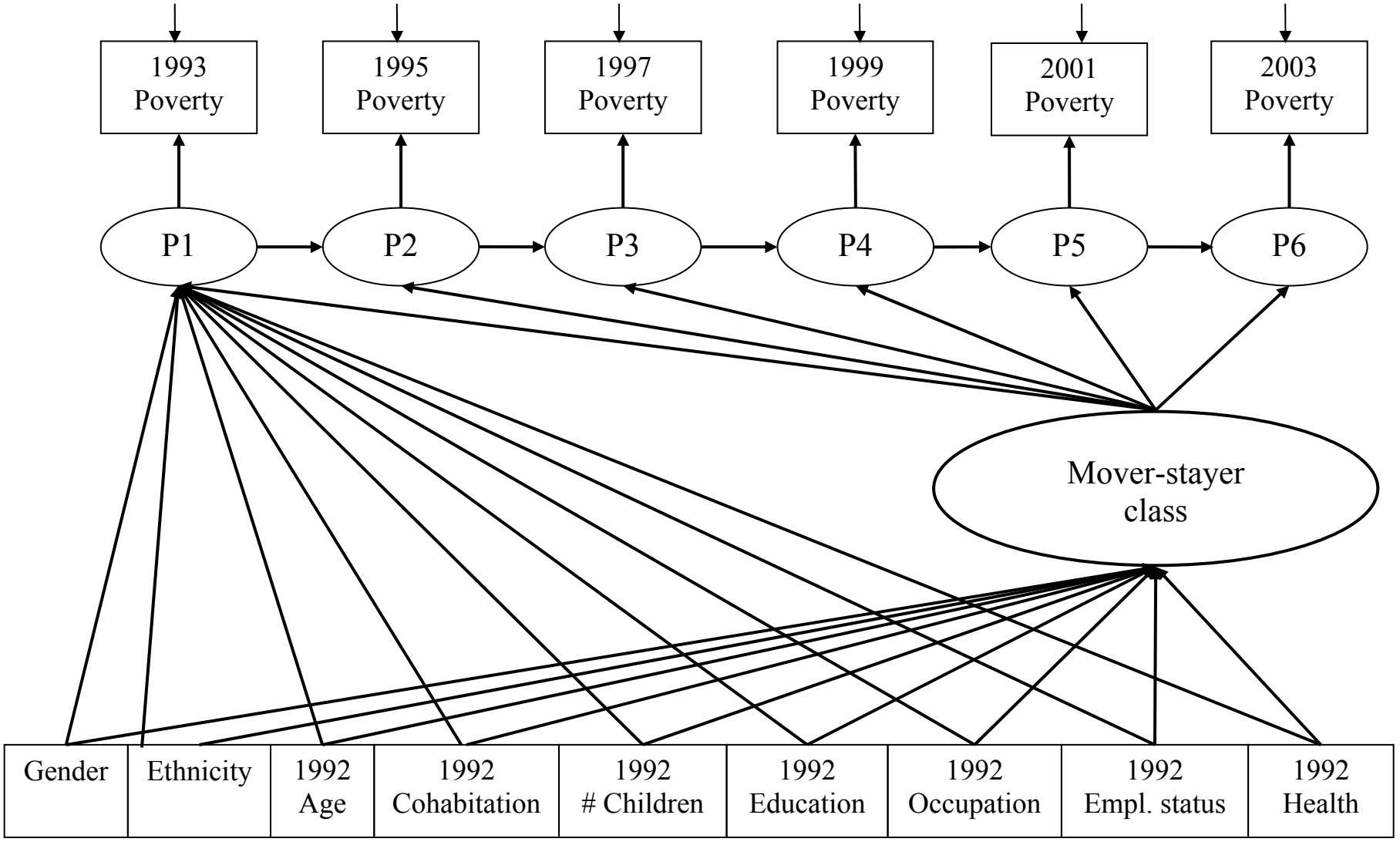

Table 1: Percentage Distribution of Covariates in 1992

	US %	Britain %
Male	46.9	51.6
Female	53.1	48.4
White	83.7	95.2
Non-white	16.3	4.8
Age 25-29 years	15.9	17.8
Age 30-34 years	20.1	20.2
Age 35-39 years	20.1	18.3
Age 40-44 years	20.5	19.0
Age 45-49 years	14.4	18.3
Age 50-53 years	9.0	6.4
Single	13.7	7.7
Married/cohabiting	69.6	83.6
Wid/sep/divorced	16.7	8.7
No children	43.7	40.2
One child	19.9	11.6
Two children	23.5	21.3
Three or more children	12.9	26.9
Minimum education	14.7	33.8
Medium education	58.4	33.9
Higher education	26.9	32.3
Employed	81.5	78.1
Unemployed	5.3	5.9
Out of the labor force	13.2	16.0
Non-routine occupation	69.2	71.2
Routine occupation	27.7	27.4
Missing occupation	3.1	1.4
Best health*	27.6	30.8
Mid-range health*	26.0	15.4
Worst health*	1.8	1.6

* Health categories represent values 1, 3, & 5 on a 5-point scale (values 2 & 4 are not listed)

Table 2: Observed Poverty Dynamics, Working-Age Populations*

		Observed poverty rates (%) in each wave						
		1993	1995	1997	1999	2001	2003	Mean
(1)	US	17.3	16.6	15.6	13.0	13.5	15.2	15.2
(2)	Britain	15.6	14.1	14.4	14.0	14.4	13.5	14.3
		Observed percent in poverty n waves out of 6						
		0 of 6	1 of 6	2 of 6	3 of 6	4 of 6	5 of 6	6 of 6
(3)	US	68.3	13.2	5.7	4.3	2.5	2.9	3.1
(4)	Britain	65.3	13.0	7.3	5.8	4.4	2.9	1.4
		Observed percent poor in later waves given poverty at wave 1						
		P(1995|1993)		P(1997|1993)	P(1999|1993)	P(2001|1993)	P(2003|1993)	
(5)	US	64.2		58.3	48.5	48.8	44.9	
(6)	Britain	56.3		50.8	42.5	35.6	30.8	
		Observed percent non-poor in later waves given non-poverty at wave 1						
		NP(1995|1993)		NP(1997|1993)	NP(1999|1993)	NP(2001|1993)	NP(2003|1993)	
(7)	US	93.1		92.6	93.6	93.0	90.5	
(8)	Britain	94.1		92.2	91.2	89.8	89.8	

* Figures are derived from models that do not control for socio-demographics, using disposable household income

Table 3: Response Probabilities from Latent Transition Analysis for Mover Class

Country		Classed as Non-poor	Classed as Poor
US	Observed Non-poor	0.920	0.200
	Observed Poor	0.080	0.800
Britain	Observed Non-poor	0.932	0.127
	Observed Poor	0.068	0.873

Table 4: Poverty Dynamics Predicted by the Latent Mover-Stayer Model*

		Latent poverty rates (%) in each wave						
		1993	1995	1997	1999	2001	2003	Mean
(1)	US	14.7	14.7	14.4	14.1	14.5	14.5	14.5
(2)	Britain	16.4	14.1	14.0	13.3	12.6	14.2	14.1
		Percent classed in latent poverty n out of 6 waves						
		0 of 6	1 of 6	2 of 6	3 of 6	4 of 6	5 of 6	6 of 6
(3)	US	83.2	0.0	2.1	1.0	1.4	0.0	12.3
(4)	Britain	73.8	7.2	4.1	3.9	3.1	2.3	5.7
		Percent in latent poverty in later waves given poverty at wave 1						
		P(1995|1993)	P(1997|1993)	P(1999|1993)	P(2001|1993)	P(2003|1993)		
(5)	US	100.0	93.1	88.6	83.7	83.7		
(6)	Britain	70.8	60.5	50.6	45.1	42.0		
		Percent in latent non-poverty in later waves given non-poverty at wave 1						
		NP(1995|1993)	NP(1997|1993)	NP(1999|1993)	NP(2001|1993)	NP(2003|1993)		
(7)	US	100.0	99.2	98.8	97.5	97.5		
(8)	Britain	97.1	95.2	94.1	93.7	91.2		

* Figures are derived from models that do not control for socio-demographics, using disposable household income

Table 5: Changes in Latent Poverty as a Result of Redistributive Programs[(a)]

	US			Britain		
	market (1)	disposable (2)	% change (3)	market (4)	disposable (5)	% change (6)
Mean aggregate poverty	14.7	13.2	-10.2	15.0	12.1	-19.3
Percent always poor	11.2	10.8	-3.6	9.2	5.4	-41.3
Percent never poor	81.4	83.9	+3.1	78.3	80.7	+3.1
Percent temporarily poor	7.4	5.3	-28.4	12.5	13.8	+10.4
Mover exit probabilities[(b)]	0.096	0.111	+15.6	0.153	0.225	+47.1
Mover entry probabilities[(b)]	0.039	0.033	-15.4	0.066	0.065	-1.5

[(a)] Figures are derived from models that include socio-demographic characteristics

[(b)] Figures differ slightly from the comparable figures in Table 4 because they are derived from models that assess mover-stayer status using socio-demographic characteristics as well as poverty measures. We use these models here to generate the most meaningful cross-national comparisons possible.

Table 6: Changes in Observed Poverty as a Result of Redistributive Programs[(a)]

	US			Britain		
	market (1)	disposable (2)	% change (3)	market (4)	disposable (5)	% change (6)
Mean aggregate poverty	16.9	15.2	-10.1	16.9	14.3	-15.4
Percent always poor	4.7	3.1	-34.0	6.1	1.4	-77.0
Percent never poor	66.6	68.3	+2.6	66.8	65.3	-2.2
Percent temporarily poor	28.8	28.6	-0.7	27.2	33.4	+22.8
Mover exit probabilities[(b)]	0.474	0.475	+0.2	0.382	0.430	+12.6
Mover entry probabilities[(b)]	0.198	0.208	+5.1	0.177	0.185	+4.5

[(a)] Figures are derived from models that include socio-demographic characteristics

[(b)] Figures differ slightly from the comparable figures in Table 2 because they are derived from models that assess mover-stayer status using socio-demographic characteristics as well as poverty measures. We use these models here to obtain more accurate observed estimates and to generate the most meaningful cross-national comparisons possible.

Appendix A—Model Fit Statistics

	Model					
	1	2	3	4	5	6
1. Latent classes	2-Class Wave 1	3-Class Wave 1	2-Class Wave 3	3-Class Wave 3	2-Class Wave 6	3-Class Wave 6[1]
BHPS						
-LL (Free Parameters)	1364.935 (22)	1319.895 (43)	1201.291 (22)	1153.303 (43)	1118.077 (22)	1062.851 (43)
BIC	2912.72	2997.18	2582.684	2658.623	2412.367	2470.119
PSID						
-LL (Free Parameters)	1567.182 (22)	1486.596 (43)	1046.305 (22)	985.726 (43)	1086.194 (22)	1013.847 (43)
BIC	3320.567	3337.135	2270.156	2318.475	2348.943	2372.777
BIC comparison for non-nested models		Models 1.1 & 1.2		Models 1.3 & 1.4		Models 1.5 & 1.6
BHPS		1.1 < 1.2		1.3 < 1.4		1.5 < 1.6
PSID		1.1 < 1.2		1.3 < 1.4		1.5 < 1.6

+p<.10; * p<0.05; **p<.005; ***p<.0005

[1] Global maxima not found

2-class preferred to 3-class models.
Proceed with 2 poverty classes to next stage.

Appendix A—Model Fit Statistics (cont'd)

	Model					
	1	2	3	4	5	6
2. Simple/Mixed Markov	1-Chain No Error	2-Chain No Error	3-Chain No Error			
BHPS						
-LL (Free Parameters)	7328.99 (11)	7137.907 (23)	7122.215 (35)			
BIC	14749.701	14467.595	14536.271			
PSID						
-LL (Free Parameters)	8262.798 (11)	7848.223 (23)	7799.813 (35)			
BIC	16619.181	15892.125	15897.397			
BIC comparison for non-nested models		Models 2.1 & 2.2	Models 2.2 & 2.3			
BHPS		2.1 > 2.2	2.2 < 2.3			
PSID		2.1 > 2.2	2.2 < 2.3			

+p<.10; * p<0.05; **p<.005; ***p<.0005

2-chain models lower BIC for all waves.
Proceed with model 2.2 to next stage.

Appendix A—Model Fit Statistics (cont'd)

	Model					
	1	2	3	4	5	6
3. Mixed Markov/ Mover-Stayer			2-Class M-S	2-Class M-S		
	2-Chain No Error	2-Chain Error	Mover & Stayer Error	No Stayer Error		
BHPS						
-LL (Free Parameters)	7137.907 (23)	7122.059 (27)	7142.630 (17)	7133.145 (15)		
BIC	14467.595	14469.252	14427.011	14391.365		
PSID						
-LL (Free Parameters)	7848.223 (23)	7802.777 (27)	7820.976 (17)	7822.667 (15)		
BIC	15892.125	15835.264	15786.584	15772.949		
Chi-squared difference test for nested models		Models 3.1 & 3.2	Models 3.2 & 3.3	Models 3.3 & 3.4		
BHPS		13.80 (4)*	26.33 (10)**	8.07 (2)*		
PSID		206.81 (4)***	32.70 (10)***	1.76 (2)		

+p<.10; * p<0.05; **p<.005; ***p<.0005

2-chain error better fit than 2-chain no error.

Shows large group always non-poor. Test mover-stayer model.

2-class M-S error poorer fit than 2-chain error, but far more parsimonious.

Also, 2-chain error doesn't reach stable solution.

2-class M-S no stayer error as good a fit as less restricted M-S for PSID, worse for BHPS using LL but better using BIC.

2-class M-S no stayer error also more parsimonious.

Proceed with model 3.4 to next stage.

Appendix A—Model Fit Statistics (cont'd)

	Model					
	1	2	3	4	5	6
4. Mover-Stayer transitions	2-Class M-S No Stayer Error	2-Class M-S No Stayer Error Poor & NP Stayers Homogeneous	2-Class M-S No Stayer Error All Stayers NP Homogeneous	Pre-government No Stayer Error Poor & NP Stayers Homogeneous	Pre-government No Stayer Error All Stayers NP Homogeneous	
BHPS						
-LL (Free Parameters)	7133.145 (15)	7143.691 (7)	7143.691 (6)	6773.265 (7)	6780.057 (6)	
BIC	14391.365	14345.751	14337.412	13604.897	13610.144	
PSID						
-LL (Free Parameters)	7822.667 (15)	7835.820 (7)	7841.480 (6)	7985.179 (7)	8009.754 (6)	
BIC	15772.949	15731.194	15734.005	16029.911	16070.554	
Chi-squared difference test for nested models		Models 3.4 & 4.4	Models 4.4 & 4.5		Models 4.4 & 4.5	
BHPS	7.61 (10)	14.20 (8)	0 (1)		9.44 (1)**	
PSID	16.99 (10)	14.68 (8)	9.72 (1)**		963.73 (1)***	

+p<.10; * p<0.05; **p<.005; ***p<.0005

Homogeneous transitions as good a fit as heterogeneous.

Homogeneous also more parsimonious.

All stayers NP as good a fit for BHPS, but poorer fit for PSID.

All stayers NP worse fit for both countries using pre-government poverty.

Proceed with model 4.2 to next stage.

Appendix A—Model Fit Statistics (cont'd)

	Model					
	1	2	3	4	5	6
5. Mover-stayer with covariates	Covariates Regressed on M-S Class	Covariates Regressed on M-S Class & t1 Pov				
BHPS						
-LL (Free Parameters)	6712.465 (26)	6476.576 (45)				
BIC	13641.552	13328.074				
PSID						
-LL (Free Parameters)	7007.171 (26)	6744.888 (45)				
BIC	14234.799	13871.334				
Chi-squared Difference Test for Nested Models		Models 5.1 & 5.2				
BHPS		360.43 (19)***				
PSID		291.22 (19)***				

+p<.10; * p<0.05; **p<.005; ***p<.0005

Covariates on M-S class & t1 poverty better fit for both datasets.

Choose model 5.2.