

WORKING PAPER

**INVESTIGATING LONGITUDINAL DIMENSIONS OF PRECARIOUS
EMPLOYMENT: CONCEPTUAL AND PRACTICAL ISSUES**

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Precarious employment is a complex and multidimensional phenomenon. The country studies in this volume highlight this complexity, revealing that particular dimensions are more or less salient in different times and places, and that gender relations can shape precariousness in various ways. For the most part, the case studies draw on cross-sectional data, as does the majority of research that addresses precarious employment in a multidimensional way. Yet questions of change over time are critical to how we understand precariousness in relation to individual life-chances and gendered patterns of inequality. After all, a similar incidence of precarious employment among women (or men) at a given point in time is consistent with both a scenario in which many women (men) experience precariousness, but only for short periods, and one where some women (men) are much more likely to become trapped in a cycle of ongoing precariousness. The two scenarios imply different policy approaches to mitigating the consequences of precarious employment, and indeed, rather different stakes. They likely also reflect differences in underlying labour market institutions and the reproductive bargain (Gottfried, this volume).

In what follows, I explore the virtues of a longitudinal perspective on precarious employment, focusing in particular on the possibilities afforded by the use of panel data

(data that follow the same individuals over time). First, I outline ways that longitudinal research can enhance understanding of the patterns and implications of precarious employment generally. In so doing, I consider how a longitudinal approach can clarify understandings of precariousness at the level of the job, and also discuss of the value of broadening our focus beyond specific jobs to longer employment trajectories. Second, I discuss conceptual and practical issues that arise when such understandings are advanced in a comparative framework.

THE VALUE OF LONGITUDINAL ANALYSIS

Job-level analyses of precariousness

Longitudinal research can enhance our understanding of job-level manifestations of precariousness in three key ways: by improving indicators, by clarifying causal relationships, and by expanding the dimensions of insecurity we consider.

Improving indicators

Job insecurity, or the risk of job-loss, is an important dimension of precarious employment. Job insecurity has an inherent temporal dimension insofar as it indexes the relationship between current circumstances and the likelihood of a future event. Without observing jobs over time, we cannot directly estimate this risk. Tenure is sometimes used as a proxy for job security in cross-sectional research. However, it tells us about a worker's past job

in/security, not current circumstances. Moreover, tenure is tied not only to a worker's ability to retain their job (in other words, to avoid being laid off or fired), but also to their desire to do so. Workers may choose to change jobs or to withdraw from the labour force, which will affect the length of their tenure. While such decisions may be shaped by the characteristics of their jobs (including perceived risks of job loss as well as prospects for upward mobility and flexibility), treating tenure profiles as indicators of job insecurity per se is clearly problematic. Insofar as social relations of gender and migration shape tenure profiles in ways unrelated to job-security, it is particularly important to use more direct measures when investigating the ways social locations shape insecurity. With longitudinal data that include job start and stop dates and the reason for job ending, researchers can employ event-history models to directly test which factors increase or decrease job insecurity.

Clarifying causal relationships

In addition to improving indicators, panel data can clarify causal mechanisms. At best, cross-sectional data reveal how particular attributes co-vary. We may observe that workers in jobs characterized by instability also tend to suffer poor health. However, we have no way of knowing whether their health deteriorates as a result of the stresses of instability, or whether workers who are experiencing health problems have difficulty keeping jobs that offer steady employment. Panel data can uncover the contexts in which poor health typically precedes or follows employment in an insecure job. Knowing about the time order

of events can therefore clarify the nature of the linkage between particular forms of employment, social contexts and social location, and dimensions of precariousness.

A longitudinal approach can also allow us to distinguish between risks of entry into and exit from precarious employment. This helps uncover the dynamics creating the patterns of precariousness observed at a given point in time. For example, we know that in many countries women are over-represented in temporary employment, which is strongly associated with job insecurity. However, without panel data we do not know if this is because women have a higher risk of entering temporary employment, and/or because they tend to persist in such employment for longer than do men (that is, have a lower risk of exiting). We may need to be more concerned about the implications of temporary employment for gendered inequalities over the longer term if gender differences are driven more by differential exit rates than by differences in the risks of entering temporary employment.

Moreover, similar incidences of precariousness may result from quite different dynamics. For example, rates of low-income employment may be identical in two countries although the time individuals typically spend in such employment varies. In one country, individuals may have a higher risk of entering low-income jobs, but also a high likelihood of upward income mobility. Another country's institutions may reduce the risk of experiencing low income, but increase the likelihood that once in this state it will persist (see, for example, DiPrete 2002).

Expanding dimensions of insecurity

One of the most influential attempts to capture the multidimensional nature of precarious employment is Rodgers' (1989) fourfold typology. Rodgers suggests that precariousness can be understood in terms of four key dimensions: the degree of certainty of continuing employment; control over the labour process; degree of regulatory protection; and low income. Vosko (2006) argues that a high risk of ill-health is also an important dimension of precarious employment. Although useful as a starting point, these dimensions do not fully capture all the ways in which employment may shape economic in/security. An aspect of precariousness not highlighted by Rodgers and particularly relevant to the self-employed and to temporary employees relates to the *variability* of earnings. When workers cannot predict how much they will earn in any given period, it becomes difficult to plan.

Variability is particularly problematic for low-income jobs, as workers may be unsure whether they will be able to make ends meet from month to month. The degree to which employment offers consistent earnings (and how regulatory frameworks do or do not mitigate such ups and downs) therefore shapes workers' experience of precariousness. It is only by measuring workers' earnings over time that the degree of such volatility can be estimated.

More broadly, we can expand our understanding of dimensions of precariousness by attending to patterns of stability and change. Workers stuck in jobs characterized by ongoing precariousness suffer its ill-effects longer. Moreover, longer spells of precarious employment may lead to more pronounced negative consequences. Consider again the

relationship between particular employment contexts and ill-health. The experience gained with longer job-tenure may reduce workers' risk of some job-related injuries. At the same time, longer exposure to repetitive stresses and toxic chemicals increases the risk of ill-effects. Similarly, job insecurity that is short-term (as in a probationary period for new employees) will likely have little lasting consequence. Ongoing insecurity, on the other hand, can make it difficult to rationally adjust consumption patterns as well as to make key life decisions such as whether and when to have children (DiPrete 2002). A final example that highlights the importance of considering stability and change in precariousness is the issue of wage growth. Jobs differ not only in the earnings level they afford at any one point in time, but also in their typical pattern of wage growth. An entry-level job that provides a low income but affords the possibility of steady upward mobility may be preferable to one that offers an initially higher wage, but little possibility of earnings growth.

Beyond jobs — trajectories of precariousness

In the previous examples, I highlighted ways that observing individuals in relation to particular jobs over time can enhance our understanding of precarious employment.

However, some questions about the temporal dimensions of precariousness are necessarily broader. The research literature provides many instances where longitudinal data has been usefully employed to investigate specific dimensions of precarious employment. There is, for example, a large literature on the predictors and consequences of job loss (for example, Eliason and Storrie 2006; Farber 2005; Stevens 1997). The risks of entering and exiting low-income jobs have also been subject to considerable scrutiny (for example, Finnie and

Sweetman 2003; Fouarge and Layte 2005; Morissette and Picot 2005). Research exploring relations among multiple dimensions of precariousness over time is less common.

Quantitative exploration of patterns of mobility through different jobs and spells in and out of the labour force is also relatively sparse.

One of the key advances associated with the concept of precarious employment has been to consider linkages between multiple aspects of precariousness with respect to different forms and types of employment as they intersect with social location and social context. Adding a longitudinal dimension can build upon this by considering as well how such links are constructed via particular temporal pathways. In this way, we can begin to consider broader configurations of precariousness as they play out over time.

One way to think about this is by considering the question of careers in the context of life-course trajectories. In its most expansive formulation, the life course begins at birth and ends in death, encompassing the sequence of activities, states, and events in various life-domains (Mayer 2004). Current outcomes are understood as affected by social processes that occur over time, and that are part of an underlying trajectory. The concept of the life course also relates individual biographies to institutionalized opportunity structures by means of which they are constructed (Moen 2003). Individual trajectories are seen as created in the context of multiple and interlocking pathways across domains that are themselves embedded in social institutions (for example, educational systems, occupational structures, family norms) and are shaped by intersections with others' lives. Such an

approach in a comparative context can help clarify differences in the reproductive bargain across countries.

Adopting a life-course perspective with respect to precarious employment thus draws our attention beyond particular jobs in several key ways. First, it underscores the dynamic and cumulative aspects of precariousness. It is not just present employment circumstances, but also overall patterns of work and life experience that matter. Do individuals experience one or many spells of precariousness? Do particular types of employment shape precariousness only in the short term, or do they have longer-term consequences? Is precariousness limited to a particular job, or, once entered, does it persist across multiple employment relationships? How do gendered employment patterns create particular path dependencies? Such questions orient us to consider precariousness in relation to broader processes of change and stability that unfold over time.

Second, the encompassing nature of the life course foregrounds ways that gendered career paths are shaped not just by work-related developments, but also by intersections with relations within other domains. Life-course scholars have emphasized the theoretical significance of linked lives, focusing on how individual lives are influenced by the pathways of others, including family, friends, and co-workers (Elder 1994; Moen 2003). This encourages researchers to consider men and women's employment pathways in relation to gendered household relations and resources, and to investigate how these are in turn shaped by broader opportunity structures. As Clement *et al.* (this volume) note, the

labour market is not the only ‘trigger’ to precariousness — families and states also shape how precariousness is manifested and experienced.

Social fractures associated with precarious employment are created in part by policies and practices that influence divisions of labour in- and outside of households (see Gottfried, this volume). In the postwar period, governments, businesses, and unions created policies and practices that presumed and supported a ‘lock-step’ career pattern for men through full-time schooling, to full-time continuous employment, to a one-way exit into retirement (Kohli 1986). This model of the career was in turn built upon particular gendered models of the life course, assuming a (male) ‘unencumbered’ breadwinner supported by a (female) homemaker who would attend to the everyday needs of social reproduction. The homemaker’s own employment pattern would be organized around the requirements of such work and of the primary breadwinner’s employment (Moen and Han 2001; Sirianni and Negrey 2000; Vosko 2006; Williams 2000). A life-course perspective thus highlights ways that the implications of particular precarious jobs for individuals’ well-being depend on their relation to larger patterns in the individuals’ lives. In the next section, I outline more specific ways that considering career trajectories beyond individual jobs can deepen our understanding of precarious employment. As with the prior discussion that highlighted the utility of panel data for understanding job-level precariousness, I argue that longitudinal data can improve indicators, clarify causal relationships, and expand the dimensions of insecurity we can consider.

Improving indicators

The notion of the life course suggests the utility of expanding our *general* understanding of precariousness to encompass broader trajectories or pathways. In so doing, we move away from considering precariousness in relation to particular employment spells and towards a consideration of what Clement *et al.* (this volume) term ‘precarious lives’. This is particularly important in a context in which careers may be increasingly constructed as much across as within particular organizations. However, it requires new indicators. For example, rather than focus on the risk of losing particular jobs, we might investigate patterns of employment instability, considering the number and duration of unemployment spells individuals experience. As MacDonald (this volume) points out, the degree to which job opportunities require migration, and the (often gendered) constraints and possibilities in this respect, can also be seen as a key aspect of precariousness. Following workers’ movements over time allows the most direct measure of such patterns. Transitions between employment and non-employment, as well as variations in work hours and arrangements over time, are also important to uncover insofar as the gendered character of precarious work is often shaped by the organization of unpaid work. In the United States, Royalty (1998) finds that among less-educated workers, women are less likely than men to leave employers for a better job, but more likely to leave the labour force. However, among workers with more than 12 years of schooling, separation patterns are similar. Rather than simply focus on differences in employment rates, comparative research could benefit from a more direct analysis of patterns of transition in and out of the labour force and between

different forms of employment for differently situated workers. Cumulative transition patterns (which Royalty does not consider) are also worth investigation.

Indeed, considering longer trajectories that involve multiple transitions of various kinds can provide new insight into how different dimensions of precariousness are entwined.

Methodologically, this is more complicated than research focusing on transition dynamics related to single spells. However, it can be very illuminating. One promising approach is the use of sequence methods. Rather than focus on single events, sequence analysis attempts to identify typical types of trajectories based on the duration and ordering of a serial succession of different states, such as employment in a full-time job, employment in a part-time job, unemployment and family-care (Abbott 1995). Each individual has a potentially unique sequence that describes when and for how long they are in particular states. Researchers use optimal matching techniques to assess the degree of similarity among these sequences. Essentially, sequences are manipulated and transformed using a number of basic operations until they are turned into one another. The fewer operations required for such transformation, the more similar the sequences are deemed to be. After identifying the (dis)similarity between all sequences found in a dataset via optimal matching, cluster analysis is then used to identify similar types of sequences.

A number of recent studies apply these techniques to careers (for example, Blair-Loy 1999; Halpin and Cban 1998; Huang *et al.* 2007; Hynes and Clarkberg 2005; Scherer 2001).

Moen and Han (2001), for example, create typologies of career sequences for older American men and women. They find that while both men and women travel some career

pathways, gendered distributions are far from even, with some career pathways (such as the intermittent career and delayed-entry career) specific to women. While Moen and Han focus on employment statuses, sequence analysis can also be used to look at ‘linked lives’. Pollock (2007) considers sequences encompassing not only employment careers, but also their intersection with housing and family sequences. MacInnes (this volume), reveals interesting things about the employment consequences of childbirth in the United Kingdom (UK) by looking at sequences of working-time arrangements that account for the activities of both partners in couples.

This type of approach thus allows us to trace how precariousness might be implicated in longer-term sequences of events — can we identify typical ‘precarious paths’, such as alternating states of unemployment, low-income jobs, and labour force withdrawal? As MacDonald argues (this volume), precarious employment needs to be examined in conjunction with both unemployment and underemployment. It can help us see how households manage paid employment and care over time, and how this affects the precariousness of employment paths for men and women. Further, it allows researchers to explore how such paths vary for differently located workers, if they are similar in form across nations, or if precariousness manifests in different types of trajectories in different regulatory contexts. Sequence methods also provide a potential means of considering the relationship between different dimensions of precariousness. Although largely descriptive, sequence methods can be a useful initial classificatory tool. Further, the results of sequence analysis can be integrated with regression methods to investigate the outcomes of different types of trajectories.

Clarifying causal relationships

Considering linkages among and between dimensions of precariousness over time allows a more nuanced picture of how precariousness is experienced. Further, it can help clarify causal relationships in a way not possible with a more limited focus. An important question that cannot be adequately answered with research that limits itself to point-in-time measures or a particular job is the degree to which particular employment experiences have longer-term effects.

The example of temporary work is illustrative. We know that across a variety of national contexts, temporary work tends to be precarious along a number of dimensions, typically involving low wages, limited access to benefits and statutory entitlements, and decreased likelihood of union protection (Kalleberg *et al.* 2000; Korpi and Levin 2001; Polivka 1996; Segal and Sullivan 1997; Vosko *et al.* 2003). Temporary jobs are also inherently insecure given their time-delimited nature. While these are all key indicators of precariousness that have been highlighted by scholars using cross-sectional data, the very insecurity of temporary jobs also implies that the precariousness associated with them may be transitory. Indeed, some scholars have argued that temporary employment provides an important stepping stone to labour market inclusion. The promotion of temporary jobs for welfare recipients, for example, is based in part on the assumption that these jobs provide valuable labour market experience that will help them move to more secure employment in the future (Autor and Houseman 2005). Similarly, new immigrants to Canada are often

counselled to take temporary employment as a means of gaining Canadian experience (Vosko 2000). Whether we think of temporary employment as a bridge or trap depends not just on its duration, but also what happens to workers *after* they leave a temporary job. While questions about the immediate outcomes of temporary work can be explored by considering the nature of transitions from it, it may also have longer-term consequences that deserve consideration. Workers in temporary jobs typically enjoy fewer opportunities for training than those who are permanently employed (Booth *et al.* 2002; Connell and Burgess 2006; Nollen 1996). This is directly tied to the experience of insecurity — employers have little incentive to provide training for workers they anticipate employing for a limited or uncertain duration. Forgone training opportunities may not matter when the worker is only employed in temporary work for a short spell. However, if she becomes enmeshed in a cycle of temporary jobs she may find her earnings falling further behind her counterpart in permanent work as the latter gains skills and experience that she can leverage for ongoing promotion or to switch to a more lucrative job with a different employer. In this way, long durations of insecurity link to low earnings more closely than in contexts where insecurity is transitory. Similarly, the negative health consequences of precarious work likely increase with duration. Short periods of stress associated with insecurity may produce headaches — long periods can lead to more extreme and long-lasting physical ailments (which may in turn curtail employment possibilities in ways that create a higher likelihood of employment in precarious positions in the future).

In general, the longer precarious states last, the more difficult it likely becomes to emerge from them. Consider low income. A transitory period of low income (such as may occur as

a result of a short period of unemployment following a lay-off) may have little long-term effect on lifestyle insofar as workers are able to buffer its ill-effects with a combination of unemployment insurance, savings, and financial help from family and friends. However, the longer such low income lasts, the more likely the worker will have to liquidate valuable assets that may have long-term value, (such as selling a house), or forgo activities that cannot currently be afforded but may have economic value in the longer-term (such as pursuing higher education). This potentially creates a pattern of duration-dependence whereby the length of time one has already suffered a precarious state itself affects the likelihood of experiencing precariousness.

Job instability as well is likely to have lasting effects. In the short term, job instability can increase stress, make it difficult to plan for the future, and reduce income (after job loss). However, it can also have longer-term effects that persist even after a worker is re-employed. Stigma associated with job loss, the imperative to find a new job quickly before money runs out, and industry-level or economy-wide downturns mean that workers are often unable to find new jobs that afford the same income as the position that they lost. Understanding consequences therefore requires knowing what happens to workers after a given employment relationship ends: how long does unemployment last?; how different is income in old and new jobs?; do workers ever catch up to where they would have been if they hadn't lost their jobs?; how long does this take? Such a temporal analysis links to the spatial/mobility issues raised by MacDonald (this volume).

Focusing on broader employment trajectories not only allows us to consider longer-term effects, it also provides the opportunity to uncover the cumulative impact of work experiences. Consider the question of employment instability. Because employers have limited information when hiring, they may use a worker's past mobility history to infer turnover propensity and potential productivity. The social meanings that employers attach to different mobility histories might therefore systematically structure employment and wage offers. In a study of cumulative mobility patterns for young American workers, I found that for workers who were laid off once, the resultant wage penalty was fully explained by the length of time they spent not employed. However, for those who experienced more than one layoff, there was an additional wage penalty. I also found that women who exceeded normative mobility levels experienced a wage penalty that eroded the generally positive impact of non-family related voluntary mobility (Fuller 2008). Evidence of the importance of cumulative mobility patterns can also be found in Stevens' (1997) influential study of longer-term displacement effects. Using data from the Panel Study of Income Dynamics (PSID), she finds that much of the longer-term negative effects of worker displacement stems from additional displacements that occur in the years following an initial displacement.

Expanding dimensions of insecurity

In discussing the ways that a longitudinal approach could enhance our understanding of job-level manifestations of precariousness, I argued that it is important to consider not just earnings level but also patterns of variability and growth. We can ask similar questions

about the shape of worker trajectories as they move across and between different types of employment. Rather than focus on the relationship between job tenure and wage growth, for example, we may wish to consider how cumulative experience garnered in particular forms of employment shape income growth. Parent (2000) finds that the wage premiums associated with job tenure are largely a function of industry-specific rather than job-specific returns. This suggests that it may be useful to investigate whether workers in temporary employment who stay within a given industry fare better over time than workers deployed across different types of work. Perhaps working in a variety of temporary jobs in different industries can serve as a type of ‘job shopping’ that ultimately helps young people in particular discover their aptitudes and abilities and find stronger job matches. Perhaps upward mobility is only possible if one stays within the same industry. Maybe both paths are dead ends. We won’t know unless we actually trace patterns of wage growth over time for workers in different circumstances.

Longitudinal data also provide the opportunity to investigate the extent to which gaps in employment shape mobility for workers in different types of work. We know that cumulative time out of the labour force generally has a negative impact on wages, and that the number of employment gaps also matters (Fuller 2008). However, such intermittency may have more of an impact for some workers than others. Drawing on economic arguments about the rationality of gendered differences in human capital investment strategies, Booth *et al.* (2002: 192) argue that limited opportunities to invest in firm specific human capital may matter less for female temporary workers. For such women, they argue, ‘it can be optimal to invest in a high level of general, rather than specific, human capital,

and to hold a succession of temporary posts'. This presumes that intermittency matters less for wage growth patterns for workers in temporary work. However, one can easily imagine situations where this is unlikely to be the case. Contract workers' ability to secure lucrative contracts often hinge on diligent maintenance of network connections (Barley and Kunda 2004). Such connections may atrophy during prolonged absence from the workforce.

While the above examples focus on patterns of wage growth, it is clear that variability in workers' income over time will also be shaped by patterns of transitions between jobs and in and out of the labour force.

IMPLICATIONS AND CHALLENGES

A longitudinal approach has the potential to contribute a great deal to our understanding of the causes and consequences of precariousness both within particular jobs and across broad life-course trajectories. For simplicity, I have outlined examples that do not have an explicitly comparative dimension. However, it is relatively straightforward to see how the kinds of insights allowed by a longitudinal perspective could also enhance our understanding of differences in cross-national manifestations and correlates of precariousness. As the chapters in this volume demonstrate, precariousness often takes different forms across countries. Attending to its temporal dimensions can add further nuance to our understanding of such variation by highlighting differences in the dynamics of precariousness that may be hidden in static comparisons. Indeed, countries may differ not only in the incidence of jobs that offer low pay, are insecure, and/or lack regulatory

protection, but also in the length of time people are typically employed in such jobs, their risks of entering and leaving them, and their consequences for future employment prospects, as well as for economic security more generally. These temporal dimensions are, I have argued, critical to understanding the broader implications of precarious employment for workers' mobility and life chances. Once in precarious situations, are workers in different contexts more or less likely to become trapped? Do the same types of circumstances tend to lead into and out of precariousness in different countries, or are there institutionally specific on-ramps and exits? What are the implications of such differences for workers' future employment prospects and life chances more generally? How do different institutional and policy configurations shape the nature and prevalence of precarious pathways? How well do they ameliorate their consequences? Do policies work best when they compensate for precariousness, or when they help people quickly exit precarious situations? These are key questions for comparative work that can only be pursued within a longitudinal framework.

Because it allows for a richer understanding of the meaning of precariousness in people's lives, longitudinal analysis can also provide a useful standpoint for evaluating how the experience of precariousness differs among countries for particularly situated workers (women and men, older and younger workers, immigrants and the native-born, etc.). We need to understand not just how precarious pathways differ among nations, but also who ends up following particular trajectories in, through, and out of precariousness, and why.

In this respect, looking beyond specific employment relationships is particularly critical. As other contributors to this volume have made clear, experiences of precariousness are not shaped by labour market policies alone. Educational and training systems and patterns and policies relating to immigration and migration vary considerably across nations and are clearly relevant to how precariousness is experienced and by whom. Intersections between employment systems, family dynamics, and the organization of care work also matter a great deal, particularly with respect to the gendered underpinnings of precariousness.

Indeed, workers have experienced growing insecurity in part because of a misfit between the changing nature of employment and family dynamics and the continued dominance of the (now eroding) standard employment relationship¹ as an organizing frame for social and labour policy. Cross-national variation in institutions, regulatory frameworks, and cultural schemas creates diversity in patterns of education and training, migration, the way that work and care are accomplished, and the nature of relationships between families, states, and market (see, for example, Gottfried's discussion of the reproductive bargain and Clement *et al.*'s discussion of inequality regimes in this volume). Because longitudinal data allow us to trace not just pathways into, out of, and through the labour market, but also how these unfold for women and men in relation to key events relating to family structure and household dynamics (for example, births, deaths, union formation and dissolution, household strategies around earning and caring), migration, and schooling, they provide a critical resource for exploring implications of cross-national variations in this respect.

In exploring longitudinal dimensions of precariousness, researchers need not always rely upon panel data *per se*. Surveys that ask respondents about prior experiences can provide

useful information, and qualitative interviews that reach into the past, such as life histories, can also be extremely telling. At the same time, true panel data is particularly helpful insofar as it minimizes recall bias and allows us to more closely and reliably follow workers' experiences as they unfold.

Today, rich sources of longitudinal data are increasingly available. Improved computer capabilities and advances in statistical modelling have also improved the accessibility and utility of quantitative longitudinal analysis. At the same time, comparative analyses employing panel data present certain difficulties. Several issues are not unique to longitudinal applications, but may be somewhat more pronounced. The first is comparability. Comparability of indicators across data sets is always an issue with cross-national research. With longitudinal data, an extra consideration is the granularity with which variables are measured (that is, surveys may be repeated at longer or shorter intervals, and variables such as start and stop dates may be measured with varying degrees of precision). In addition, the length of panels varies considerably, which can narrow the range of possible research designs. For example, Canada's Survey of Labour and Income Dynamics (SLID) follows individuals for a maximum of six years, a relatively short time frame for considering how careers unfold. The US Panel Study of Income Dynamics, on the other hand, has been following the same families and individuals since 1968. The US National Longitudinal Survey of Youth 1979 (NLSY79) has followed the same individuals since 1979 and has the added advantage of providing an unusually complete history of respondents' employment experiences because individuals in the sample were between 14 and 22 at the time of the first interview.

There have been several key initiatives to standardize measures across surveys (either before or after), of which the most comprehensive is the Luxembourg Income Study. However, there is not yet an equivalent attempt to compile comparative panel data. The closest we have is the European Community Household Panel (ECHP), and its replacement, the EU Statistics on Income and Living Conditions (EU-SILC). However, while these surveys provide a comparable indicators across European countries, they does not map so easily onto panel data from other continents.

Access is also a problem with using multiple data sets. One issue is cost. For example, the ECHP currently costs universities and research institutes €8,000 for the full data set. For researchers outside the EU whose universities would not normally purchase such data, this is prohibitive. In fact, access to the ECHP micro-data is in principle restricted to organizations inside the EU. Although special requests for those outside the EU can be granted, the process is neither simple nor automatic.

Another issue affecting accessibility is the often extreme data-protection measures implemented by national statistical agencies. Typically, researchers must submit formal applications to access panel data, causing delays in the commencement of research. More restrictively, all or part of the data sets must sometimes be accessed in particular secure locations. Scholars wishing to use the SLID or the geo-code data of the NLSY79, for example, must do so from within particular secure labs in the Canada and the United States respectively. A researcher wishing to use multiple data sets from different countries may

therefore have to incur the cost and inconvenience of travelling to those countries to access data.²

For researchers interested in collecting new longitudinal data, issues of cost loom large. This is not simply because individuals must be surveyed repeatedly, but because to do so requires tracking individuals as they move and ensuring their continued cooperation. Working with longitudinal data in a comparative framework clearly presents challenges. Nonetheless, it also affords important opportunities to enhance research on precarious employment. It can provide better indicators of key dimensions such as job insecurity, help untangle causal dynamics, and broaden our understanding of what constitutes precariousness in the first place. Most importantly, it brings mobility to the forefront. By investigating workers' pathways in and through different jobs and types of work inside and outside the labour market we can gain new insight into what precariousness means in different countries, by gender, and what it may take to address it.

NOTES

REFERENCES

- Abbott, A. (1995) 'Sequence analysis: new methods for old ideas', *Annual Review of Sociology*, 21: 93–113.
- Autor, D. and Houseman S. (2005) *Do Temporary Help Jobs Improve Labor Market Outcomes for Low-Skilled Workers? Evidence from random assignments*, NBER Working Paper 11743.
- Barley, S.R. and Kunda, G. (2004) *Gurus, Hired Guns, and Warm Bodies: itinerant experts in a knowledge economy*, Princeton: Princeton University Press.
- Blair-Loy, M. (1999) 'Career patterns of executive women in finance: an optimal matching analysis', *The American Journal of Sociology*, 104: 1346–97.
- Booth, A.L., Francesconi, M. and Frank, J. (2002) 'Temporary jobs: stepping stones or dead ends?' *Economic Journal*, 112: 189–213.
- Connell, J. and Burgess, J. (2006) 'The influence of precarious employment on career development: the current situation in Australia' *Education Training*, 48: 493–507.
- DiPrete, T.A. (2002) 'Life course risks, mobility regimes, and mobility consequences: a comparison of Sweden, Germany, and the United States', *American Journal of Sociology*, 108: 267–309.
- Elder, G.H. (1994) 'Time, human agency, and social change: perspectives on the life course', *Social Psychology Quarterly*, 57: 4–15.
- Eliason, M. and Storrie, D. (2006) 'Lasting or latent scars? Swedish evidence on the long-term effects of job displacement', *Journal of Labor Economics*, 24: 831–56.

- Farber, H.S. (2005) 'What do we know about job loss in the United States? Evidence from the Displaced Workers Survey, 1984–2004' *Economic Perspectives*, 29: 13–28.
- Finnie, R. and Sweetman, A. (2003) 'Poverty dynamics: empirical evidence for Canada', *Canadian Journal of Economic*, 36: 291–325.
- Fouarge, D. and Layte, R. (2005) 'Welfare regimes and poverty dynamics: the duration and recurrence of poverty spells in Europe', *Journal of Social Policy*, 34: 407–26.
- Fuller, S. (2008) 'Job mobility and wage trajectories for men and women in the United States', *American Sociological Review*, 53: 158–82.
- Halpin, B. and Cban, T.W. (1998) 'Class careers as sequences: an optimal matching analysis of work-life histories', *European Sociological Review*, 14: 111–30.
- Huang, Q., El-Khoury, B.M., Johansson, G., Lindroth, S. and Sverke, M. (2007) 'Women's career patterns: a study of Swedish women born in the 1950s', *Journal of Occupational and Organizational Psychology*, 80: 387–412.
- Hynes, K. and Clarkberg, M. (2005) 'Women's employment patterns during early parenthood: a group-based trajectory analysis', *Journal of Marriage and Family*, 67: 222–39.
- Kalleberg, A.L., Reskin, B.F. and Hudson, K. (2000) 'Bad jobs in America: standard and nonstandard employment relations and job quality in the United States', *American Sociological Review*, 65: 256–78.
- Kohli, M. (1986) 'Social organization and subjective construction of the life course', in A. Sorensen, F.E. Weinert and L.R. Sherrod (eds) *Human Development and the Life Course: multidisciplinary perspectives*, Hillsdale, NJ: Laurence Erlbaum.

- Korpi, T. and Levin, H. (2001) 'Precarious footing: temporary employment as a stepping stone out of unemployment in Sweden', *Work, Employment and Society*, 15: 127–48.
- Mayer, K.U. (2004) 'Whose lives? How history, societies, and institutions define and shape life courses', *Research in Human Development*, 1: 161–87.
- Moen, P. (2003) 'Linked lives: dual careers, gender, and the contingent life course', in W.R. Heinz and V.W. Marshall (eds) *Social Dynamics of the Life Course*, New York: Walter de Gruyter Inc.
- Moen, P. and Han, S-K. (2001) 'Reframing careers: work, family, and gender', in V. Marshall, W. Heinz, H. Krueger and A. Verma (eds) *Restructuring Work and the Life Course*, Toronto: University of Toronto Press.
- Morissette, R. and Picot, G. (2005) 'Low-paid work and economically vulnerable families over the last two decades', *Analytical Studies Branch Research Paper Series* 2005248e, Statistics Canada, Analytical Studies Branch.
- Nollen, S.D. (1996) 'Negative aspects of temporary employment', *Journal of Labor Research*, 17: 567–82.
- Parent, D. (2000) 'Industry-specific capital and the wage profile: evidence from the National Longitudinal Survey of Youth and the Panel Study of Income', *Journal of Labor Economics*, 18: 6–23.
- Polivka, A.E. (1996) 'A profile of contingent workers', *Monthly Labor Review*, 119: 10–22.
- Pollock, G. (2007) 'Holistic trajectories: a study of combined employment, housing and family careers by using multiple-sequence analysis', *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 170: 167–83.

- Rodgers, G. (1989) 'Precarious work in Western Europe: the state of the debate', in G. Rodgers and J. Rodgers (eds) *Precarious Jobs in Labour Market Regulation: the growth of atypical employment in western Europe*, Geneva: International Institute for Labour Studies.
- Royalty, A.B. (1998) 'Job-to-job and job-to-nonemployment turnover by gender and education level', *Journal of Labor Economics*, 16: 392–443.
- Scherer, S. (2001) 'Early career patterns: a comparison of Great Britain and West Germany', *European Sociological Review*, 17: 119–44.
- Segal, L.M. and Sullivan, D.G. (1997) 'The growth of temporary services work', *The Journal of Economic Perspectives*, 11: 117–36.
- Sirianni, C. and Negrey, C. (2000) 'Working time as gendered time', *Feminist Economics*, 6: 59–76.
- Stevens, A.H. (1997) 'Persistent effects of job displacement: the importance of multiple job losses', *Journal of Labor Economics*, 15: 165–88.
- Vosko, L.F. (2000) *Temporary Work: the gendered rise of a precarious employment Relationship*, Toronto: University of Toronto Press.
- (2006) 'Precarious Employment: towards an improved understanding of labour market insecurity', in L.F. Vosko (ed.) *Precarious Employment: understanding labour market insecurity in Canada*, Montreal: McGill Queen's University Press.
- Vosko, L., Zukewich, N. and Cranford, C. (2003) 'Precarious jobs: a new typology of employment', *Perspectives on Labour and Income*, 15: 39–49.
- Williams, J. (2000) *Unbending Gender: why family and work conflict and what to do about it*, New York: Oxford University Press.