Promises Fulfilled?

A Review of 20 Years of Life Course Research

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Abstract

Empirical life course research is based on prospective or retrospective longitudinal micro data and nationally representative samples of birth cohorts or larger populations. This field of research has developed since the seventies as one of the major social science instruments of studying the dynamics of both individual lives and societies. The paper reviews critically the contributions of life course studies by comparing the initial expectations with practices and results during the last twenty years.

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1. Introduction

In this paper we will review about twenty years of social science longitudinal studies from the perspective whether they have lived up to their initial promises. One might cast the title question also in an alternative manner and ask: Is the longitudinal microanalytic survey the latest and greatest of the three great social science inventions after the population census and the cross-sectional nationally representative survey? Or is it a costly dinosaur not worthy the big efforts and investments. Survival alone cannot justify the costly continued existence of longitudinal studies. It is a well-known and probably generalizable fact that the analytical potential of longitudinal data bases of any kind is greatly underutilized. For instance, most replication studies are only used as cross-sections and this is also true for the bulk of publications coming from panel studies. This paper, therefore, addresses the issue of legitimacy of longitudinal studies. Did they deliver what they promised?

Three limitations of the way the topic will be treated deserve a short comment: 1) Why does it make sense to focus on the last 20 years? 2) Which type of longitudinal study will be the focus of the review? 3) What will be the kind of evidence on which evaluations and conclusions will be based?

First, the limitation on 20 years. The marking of periods is always somewhat arbitrary in science as elsewhere and, of course, there did exist important longitudinal studies before 1979. One may only be reminded that the US Panel of Income Dynamics was started in 1964 that Glen Elder published “Children of the Great Depression” in 1974 and that life history surveys were conducted in the early seventies by Natalie Rogoff Ramsoy for Norway and Jim Coleman and Peter Rossi for the US. But one can make a good case that large-scale longitudinal studies really had their take off of about twenty years ago. There are two main reasons for this. While great progress had already been made in collecting panel and retrospective longitudinal data, before about 1980 there were neither the adequate computing capacities for storage and analysis available nor the adequate methods of analyzing discrete data in continuous time. Moreover, the great wave of longitudinal studies took off only after 1979. The German Socio-Economic Panel was started in 1984, the British Household Panel in 1989, the European Household Panel just a few years ago. About five years ago the huge research program of the Family and the Fertility Surveys of the demographers was started.²

¹My original motivation in drawing up such an assessment came from two unrelated sources. First, on the occasion of the 10-year anniversary of the British Household Panel Project I was asked to reflect on the development of longitudinal studies. Second, our own German Life History Study was started in 1979 at the University of Mannheim when data protection laws effectively prevented the access to individual level census data in Germany.

²A partial exception to this assessment might be seen in the fact that in Britain the tradition of birth studies
Second, I will cast the assessment problem not so much in terms of longitudinal studies in general, but in regard to socio-economic life course research in particular. This limitation goes beyond purely methodological issues as I will concentrate on population studies rather than special group samples. It also means that I will practically ignore all developmental studies within psychology and education (see, for instance, Magnusson/Bergman 1990).

Third, I will draw on observations on various longitudinal studies, but will mostly rely on the experiences of my own research group with the now nine surveys of the retrospective cohort investigations of the German Life History Study. But I am confident that a large part of my observations and conclusions will be generalizable to life course studies in other countries.

For this exercise it is useful to recall the situation of social science research in the late seventies. Social democratic and like-minded governments were optimistic in being able to intervene actively and positively in the “state of the nation” and were, therefore, eager to get better information not only on standard economic indicators of macroeconomic performance and the standard of living, but also on other areas of “quality of life”. Social science not only stepped in to answer that call, but actively promoted this agenda by the so-called social indicators movement. Moreover, the disconnected collection of one shot-, one purpose-, one investigator-, small and often non-random cross-sectional and mostly attitudinal surveys had clearly reached the limits of scientific returns as had the secondary use of published aggregate tables and indicators of official government statistics.

The proliferation of longitudinal studies was then one of three strategies to create better data for academic and applied policy use. One strategy was the standardized replication survey. High quality, larger random sample surveys with annually repeated cross-sections with

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3The German Life History Study comprises nine retrospective surveys conducted between 1981 and 1999 covering men and women from cohorts born between 1887 and 1971 by means of personal and telephone interviews. Eight surveys are based on representative probability samples of West Germany and West Berlin (cohorts born 1919-21, 1929-31, 1939-41, 1949-51, 1954-56, 1959-61, 1964 and 1971) as well as of East Germany (cohorts born 1929-31, 1939-41, 1951-53, 1959-61, 1971). The life histories of the oldest participants were collected as part of the age-stratified probability sample of the regional Berlin Aging Study and were born between 1887 and 1920. Altogether data is available on 12,057 life histories. Incorporated in the design of the GLHS were two panel studies, the first one, a re-interviewing in 1993 and 1997/98 of the East Germans first interviewed 1991/92, and the second one, the three follow-ups within the Berlin Aging Study. The most recent survey of 1998/99 of West Germans born 1964 and 1971 is also connected to the case records of the official employment and unemployment register. Besides numerous articles, the German Life History Study has produced technical reports (Mayer/Brückner 1989; Brückner 1993; Brückner/Mayer 1995; Brückner/Mayer 1998), and a number of books on substantive issues (Blossfeld 1989; Grundmann 1992; Mayer/Allmendinger/Huinink 1991; Wagner 1989, 1997; Allmendinger 1989, 1994; Trappe 1995; Solga 1995; Lauterbach 1994; Henz 1996; Becker 1993; Konietzka 1999; Huinink/Mayer et al. 1995; Huinink 1995; Zühlke 2000) on, among else, education, training, income trajectories, social mobility, employment and occupational careers, family formation and divorce. All data files but for the most recent surveys are publicly available via the Max Planck Institute for Human Development in Berlin or the Central Survey Archive in Cologne.
largely identical or rotating question contents and rich as well as conventionalized measures of social background variables. Examples for such replication surveys are the US General Social Survey, the German ALLBUS (Allgemeine Bevölkerungsumfrage der Sozialwissenschaften) and the ISSP (the International Social Survey Program). The idea was to create low cost or no cost public use files which would reliably allow the measurement of social change within and across countries. The second strategy was to support a substantive enlargement and enrichment of government census and micro census statistics and to gain access to such information in the form of public use, micro data files on the individual and household level. The third strategy to combat the limitations of both survey research and of census statistics, but to keep their respective methodological and substantive strengths, was to develop nationally representative longitudinal surveys in the form of either household panels or retrospective or prospective cohort sequential studies. It is useful to keep the two alternatives and, in a sense, competing strategies of replication studies and census micro data in mind when I now turn to the assessment of the initial claims and relative achievements of longitudinal studies in the area of life course research.

In the first part of the paper I will reconstruct the arguments for life course studies which were originally advanced. In the second part I will critically evaluate whether and to which extent these claims have been realized. In contrast to the initial defenses of longitudinal studies when arguments for potential utility and illustrative evidence were sufficient, we will now have to look for actual applications and more systematic usage.

2. **The initial visions and claims for micro-analytic longitudinal studies from a life course perspective**

Social science longitudinal studies, first of all, promised to break away from the tradition of viewing societies as the aggregate and static construction of variable distributions in turning the observation plane onto the natural history of persons and households of well-defined collectivities. In so doing the level of observations and the level of actors were to be brought together again and one hoped to overcome the old infertile disjunction between the aggregate and structural macro world and the idiosyncratic or overgeneralized micro world of individual action. Likewise, the pure correlational descriptions of the conventional cross-sectional survey and the artificialities of structural equation models could be expected to be replaced by representing real time processes. Truly, one could entertain a great amount of optimism that a closer representation of such processes would get one nearer to mechanisms and, therefore, to more adequate explanatory accounts. In addition, the scope for better explanations was potentially enlarged by several other improvements. In regard to the
dependent variable, both the relative preciseness and the sheer amount of variability was increased when longitudinal studies moved from having to measure a given property like educational attainment to measuring the timing of the attainment and the duration of exposure to education and training. Instead of having to rely, for instance, on a dependent variable like occupational status at a totally arbitrary point in time (i.e., whenever the survey was done), one could now specify occupational status at given ages or after given labor force experience and could even dream of explaining a status trajectory as an outcome or constructing something like a lifetime status as an analogue to life income.

In regard to the independent variables, one could now decompose the theoretically vague catchall variables of age into a multitude of time dimensions like age, labor force experience, occupational tenure, firm tenure, and duration until retirement. One could differentiate between mere state dependency, exposure time in a given state and event dependency, i.e., effects of switching into and out of a state. Vast opportunities were offered by the large potential of introducing time varying co-variates on the individual, household, local, regional, and national level. This should allow to better differentiate between situational, proximate and distal causes. While these possibilities greatly improved the explanatory tool kit, theorizing and modeling the functional form of time dependencies promised new breakthroughs in theory construction and theory testing. Maturation, accumulation, constant or increasing exposure to risk, diffusion and other theoretically derived processes could be directly imposed on or inferred from the observed hazard functions.

The full exploitation of time as a metric quantity and multiple time clocks promised to contribute to the solution of the perennial measurement problem of having only nominal or ordinal measures available. For many variables of sociological interest like occupational status, the scaling exercises of psychology had proven inadequate because they created new fairly artificial variables far distant from everyday life. The combination of “events”, “states”, and “time” suggested new measures which fulfilled the criteria of realism as well as of metric. As money for economists, time would be used as a crucial variable with superior measurement properties.

If we now move to the expected fruits of longitudinal studies for the study of biographies and the life course, three hopes deserve most attention. First, rich longitudinal data could differentiate our overgeneralized view of life phases such as youth, middle age and old age. Rather than looking for general properties of such life phases, for instance by focusing on age norms and general behavioral patterns, one could unravel them as very complex and conditional trajectories of widely differing groups with little in common. Second, rich longitudinal data could overcome the fragmentation of the multitude of studies looking only
at changes within one life domain such as education, work, the family, or residence. In contrast, they promised to be able to show the mutual embeddedness and mutual interpenetration of various life domains. Third, they would overcome the focus on too small segments of life such as the immediate transition from school to work, household and family formation or the transition to retirement and would bring more comprehensive patterns of lives into focus, showing delayed and long-term effects and biographical continuities. The short-term perspectives of rational choice and situational constraints could thus be supplemented by heuristics of persistent and cumulative advantages and disadvantages.

While aggregate census data told at best very crude stories about social change and replication sample surveys very little, longitudinal studies should bring finally adequate instruments for studying social dynamics and should be able to bring history back to empirical social research. After all, microlevel longitudinal data allowed access to the full picture of gross changes, and intercohort comparisons for single or small bands of birth years could be assumed to prove much more sensitive to incipient changes than either aggregate changes or aggregate indicator time series. Period effects could be fine-tuned to specific co-variates instead of catchall residuals (Mayer/Huinink 1990).

I have already referred to the potential use of longitudinal studies in securing a realistic ground between abstracted structuralism, on the one hand, and overgeneralized and narrow theories of rational decision-making, on the other. Life course studies should be able to demonstrate constraints emerging from the actor’s past biography, but also the variability of behavioral responses under similar conditions. As Huinink (1995) has put it, life courses are self-referential processes. By bringing the actors or rather the complexities of human lives back in, longitudinal studies could be expected to provide a bridge between the zealots of quantitative analysis and the zealots of qualitative biographical studies. While it would bring the context back to variable sociology, it would also go beyond the arbitrary selectivity of a handful of qualitative case studies and their ad hoc interpretations. Case reconstructions from life course data differ little in content from case reconstructions from biographical research, but furnish much more systematic evidence. Longitudinal studies could also promise to link up with the work of developmental psychologists, providing more adequate measures of initial conditions and of differential proximal and distal outcomes. Thus, while sociologists could fill in the black box of the “environment” for psychologists, developmental psychologists could fill in the black box of “how the actor acts” via mechanisms of self-regulation.

One of the great challenges for longitudinal studies was posed by what has become known as the macro-micro and the micro-macro problem, i.e., how structural conditions and how
institutions impact on individual lives, as well as vice versa, how life course outcomes impact on institutional and structural change. Longitudinal studies offered solutions to these problems beyond the usual theoretical rhetoric by transforming them into the study of relationships between individual changes and macro changes in a continuous and common historical time framework. Moreover, cohort comparisons of collective life courses promised to allow to decompose compositional changes and changes in behavioral parameters as two quite different outcomes of structural transformation. And the routine allowance for time lags and the attention to life phases especially sensitive to external sets of opportunities would accommodate the testing of more realistic linkages between macro-changes and micro effects.

More subtle are the ways in which life course data could be expected to contribute to institutional analysis. First, differentiated life course data would allow institutions to be analyzed by reconstructing “careers” within institutions, e.g., within and across firms, by explaining differential access and exits and by tracing differential impacts on later life courses. Second, institutional change (e.g., in the form of event histories for institutional rules) for whole populations or sub-populations could be treated - like structural changes - as time-variate covariates, as for instance, the effects of changes in divorce laws on the divorce hazard rate. Third, cross-national comparisons of longitudinal data in countries of varying institutional arrangements could be applied to detect corresponding behavioral responses. The superiority of such data would lie not least in the possibility to pinpoint the life circumstances of target groups much better.

Longitudinal data could open new vistas for the study of gender differences and the interdependencies of partners, wives and husbands and could demonstrate how initial equalities, e.g., in education, were gradually transformed in gender disparities and spouses’ inferiorities, how attempts to sequence or combine family tasks and work would lead to life long traps for women.

Great hopes could also be invested in the uses of life course data for purposes of social policy studies. Did early intervention, such as war orphan’s pensions or stipends for fewer privileged university students, achieve their purpose and compensate for handicaps? Was there a core of permanently poor, long-term unemployed or chronically ill? Was it cheaper or more effective to prevent social ills by early investment in family incomes, education or training or by ameliorating hardships when they occurred? Would persons accommodate their lives to the normative biographies implicit in social security and pension regulations in order to optimize monetary or other rewards? How serious are long-term disincentive effects on employment of generous income replacement benefits? What are medium and long-term
unintended effects of social policy interventions? How do cohorts differ in their collective risk patterns and, therefore, their likely demands on the social security system?

Life course studies could, furthermore, be expected bringing light into the black boxes of stratification research: How are social inequalities actually generated on the long way between elementary school and adult social class position? Did it all make sense to think of class as in Schumpeter’s famous metaphor as an omnibus which stays the same, but with people always entering and leaving, or should classes be conceived and measured as dynamic collectivities with distinctive life course patterns?

Finally, there was widespread optimism that life course studies on the basis of continuous time longitudinal data would not only serve to integrate various life domains and life phases together, but that it would also serve to bring into direct competition and integration the fragmented social sciences concerned with aspects of the life course: demography, sociology, microeconomics, social policy, developmental psychology, educational science, anthropology and history. With common data these sciences could not anymore shelf off their small protected intellectual monopolies, but would easily cooperate and engage in common theory building.

Finally, there was one other great promise of longitudinal studies which only emerged after the demise of Communist countries in 1989. Retrospective life course data would allow the reconstruction of the social fabric of societal systems which had dissolved and one could thus study the effect of total societal systems on comprehensive life course regimes. Life course studies would be the ideal tools to study system transformation processes, and one could in this way examine whether the ensemble of individual life course patterns adds up to determinants of new structures or whether these are constrained quite independently from individual action.

3. Achievements, Deficits and Illusions

I shall now take this list of criteria of the potentials of longitudinal studies for life course research and will assess what has been achieved and where we fell short of our expectations. First of all, there is little doubt that longitudinal data based on nationally representative samples have become one of the, if not the most important data resource for the social sciences. In fact, so much so that they are often drawn on for information on cross-sectional

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4 I will not concentrate on the relative advantages and disadvantages of differing longitudinal survey designs, such as household panels and retrospective or prospective cohort studies.
population parameters, like educational distributions or employment characteristics where census data can provide more reliable estimates. This success is certainly due to the analytical superiority of such data, but probably it is even more due to the fact that the great household panels and increasingly also cohort studies were institutionalized as a collective good at marginal cost and with user-friendly services.⁵

Likewise, hazard models for duration data have become routine tools in statistical analysis, are implemented in all statistical packages and are now widely used in demography, economics and sociology (Blossfeld/Rohwer 1995). It is noteworthy, however, that usage has been rather one-sided. While Kaplan-Meier type survival analyses, semiparametric Cox-regressions and piecewise-constant models are frequently applied, parametric models are much more rarely put forward and tested. I might add that also the situation in regard to standard tools for exploratory, descriptive and graphical analyses of longitudinal data is far from satisfactory although recent versions of the TDA-package by Rohwer (1997) have somewhat improved this condition (Rohwer/Trappe 1999).

In regard to the use of time/duration as dependent variables and time-variant covariates, state- and event-dependency in endogenous variables, we now have a large array of studies with ingenious definitions of time-dimensions and forms of time-dependencies. In demography, for instance, duration until the birth of the second child after first birth has become a standard form of analysis. One other prominent example is the discovery of the so-called “institutional effect” of being in school or training for marriage and fertility by Blossfeld and Huinink (1991) (which, however, did not hold in the former G.D.R.) and the acceleration effect for the family formation of males upon entry into full employment. Another example is the event-dependency of marriage on leaving home in Italy (Billari 1998). Standard is by now also the reconstruction of educational attainment processes and its determinants across the school and college career (Mare 1980).⁶ Ingenious ways of differentially capturing times at risk have been developed in studies of a union dissolution, as for instance, marriage duration vs. union duration including former non-marital unions (Brüderl/Engelhardt 1997). There has also been a long and successful way from global and cross-sectional estimates of rates of labor market fluctuation - as we still see them in OECD publications - to the complex age- and career-specific analysis of inter- and intrafirm job shifts, occupational changes and sector shifts (Carroll/Mayer 1986; Mertens 1998).

⁵The recent availability of the large collection of national Family and Fertility Surveys will produce a further boom in the use of microanalytic longitudinal studies.

⁶Cameron and Heckman (1998) have recently cast some serious doubt on the actual estimation procedures applied.
Nonetheless, apart from the important studies on long and short-term unemployment, perforated employment (Büchel 1998), social assistance (Leisering/Leibfried 1999) and poverty durations, I have seen very few attempts to use time as a quantifier in constructing dependent variables like duration of social class membership (Featherman/Sørensen 1983; Mayer et al. 1989) or curricular exposure time (Alexander/Entwisle 1996) or lifetime social status. I have seen even fewer attempts to exploit time-variant covariates and time-dependent processes over a longer period of lifetime for more adequate causal analysis, as cogently argued by Blossfeld/Rohwer (1997) and aptly applied in a recent study on educational homogamy (Blossfeld/Hakim 1997). An area where I also see little or no progress is the field of explicit theory construction building on specific parametric forms of time dependency. The Gompertz-Makeham function for mortality, Coale’s and McNeil’s as well as Hernes functions for age at marriage (Keyfitz 1985), the sickle function for divorce (Diekmann/Mitter 1984) and the Gompertz-Makeham functions for job shifts (Sørensen/Tuma 1981) have been around with us for a long time now and new functional forms have neither been posited nor discovered, with the exception of the explicit modeling of diffusion processes by Diekmann (1989). It is puzzling why this should be the case. I offer three preliminary explanations. First, it is likely the case that people still basically think in terms of fixed outcomes as in conventional regression even if they have good duration data available. Second, too few people inspect the hazard rate and search hard for functional time-dependency. Third, in the usual samples with unobserved heterogeneity mixed distributions will be the rule and, therefore, the underlying different time-dependencies might be hard to detect.7

Multi-state transition analyses and competing risk models are well-represented in the literature, but more often than not, they relate to states in a given life domain. For instance, the sequence of single/in non-marital union, married, separated/divorced, and remarried (Brüderl/Engelhardt 1997), union duration and fertility (Lillard 1993) are considered or unemployment-retraining and occupational change (Zühlke 2000) or the simultaneous

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7I owe to Larry Wu an alternative explanation why explicit theorizing about parametric forms of time dependence has not received more attention: (a) most parametric models are simply mathematical conveniences, which take the form they do because one can write down reasonably terse likelihood functions for them; (b) any theory that one writes down to defend a particular parameterization is stylized at best; and (c) many analysts have switched from Cox models to very flexible parametric models, i.e. piecewise constant functions or, even better yet, splined piecewise Gompertz models, in which the log hazard is approximated by a series of piecewise linear splines. (Given a k intervals, the familiar piecewise constant model requires k parameters for the baseline function, one for each interval; it turns out that the splined piecewise Gompertz model requires only one more parameter, for k+1 df, for the baseline function. In practice, the resulting increment in fit between the two models is enormous. This provides something of a nice solution to the usual problem of specifying both a flexible form for the baseline hazard and for the distribution of the unobservables—one can use a parametric, but quite flexible, specification for the baseline hazard, as well as whatever specification for the unobservables that one desires.) Wu also takes issue with my point that within the hazard modeling community converging on models that let one both specify a wide range of heterogeneity distributions coupled with very flexible baseline hazards in ways that are both identified and straightforward to estimate.
processes of retraining and wage changes. However, the intersection of life domains is - with the exception of the classic case of mothers’ employment - rarely explicitly brought into focus. Thus, we still tend to create worlds by defining state-spaces which are far tidier than actual reality. Where are the studies on the dynamics of combining education and employment, of paid work and receiving unemployment benefits, on double and triple jobs, or on the volatility of women’s work and child care arrangements? The old well-trodden paths of problem definitions and disciplinary boundaries still hold strong despite rich longitudinal information. But partly this is also a problem of data collection where, for example, multiple and synchronous employment relationships are rarely asked for and changes in hours worked in a given job is rarely registered. Some might even claim that the present-day complexities defy even the monthly fine-grained filters of life course studies and can only be fully brought to light in semi-observation and biographical case studies.

Even more seldom than studies focusing on the intersection of life domains, we find well-developed analyses of time-dependent processes of the joint trajectories of spouses, siblings, children and parents, and school class, local or cohort peers. One exception is the study by Lauterbach (1994) with the finding of a historically increasing independence of women’s careers from that of their husbands. Coupled careers of spouses in the Netherlands were also extensively studied by Bernasco (1994). Another example is the study by Becker and Nietfeld (1999) on the temporal interplay between the unemployment of parents and the educational advancement of children or Grundmann’s analysis (1992) of how educational expansion benefitted younger siblings via their older brothers and sisters. But even in these examples temporal interdependencies are still only rudimentarily modeled.

It appears also that the increasing availability of longitudinal data has done little to dispel and replace the multitude of cross-sectional, attitudinal surveys of youth or old people with their tendency to underrate internal differentiation or differential pathways and to overestimate normative and cultural causal underpinnings.

The expectation that new longitudinal data would more often make longer trajectories across the life course the object of description and explanatory analysis was on the whole not born out. Most studies still concentrate on short-term or medium-term transition or relative small age bands. This is partially due to the fact that even now most panel studies and many cohort studies still have relatively restricted observation windows except for the much cruder information, as, e.g. contained in the retrospective calendars collected in the German Socio-Economic Panel, or the retrospective data of the British Household Panel. But even where such data is available, relatively little use has made been made out of it. Exceptions are the reconstruction of the life histories relevant for pension entitlements in the study by
Allmendinger (1994), on the effects of the pre-unification employment history for careers during the transformation of East Germany (Mayer et al. 1999), and on the effects of life histories on the aging process by Maas and her associates (Maas et al. 1999). This situation also reflects the prominence of hazard models and thus on single transitions and the general frustration in developing comprehensive life course typologies.

Probably the major argument for longitudinal studies was centered around its potential for studying social change via cohort comparisons. For the major panel studies apart from the US-PSID we still have to await more panel waves to come in before their full fruits for change studies can be harvested. On the basis of the US, British, Dutch and German cohort studies a large number of studies have been conducted. The bulk of it has been concerned with transitions to adulthood and corresponding processes (Morris et al. 1998 a, b; Blossfeld 1990; Mayer 1995), inequality of educational opportunities (Henz/Maas 1995), occupational training (Konietzka 1999), career mobility (Mayer/Carroll 1987), processes of family formation (Huinink 1995; Huinink/Mayer 1995), and divorce (Wagner 1997). The history of a whole and vanished society, i.e., the German Democratic Republic, was reconstructed in the comprehensive cohort-comparative study by Huinink/Mayer and their associates (1995). Despite this richness of research findings based on longitudinal sample surveys it is also fair to say that studies based on (micro-)census data were on the whole able to cover longer historical periods and - since they had command over the full range of single cohorts - could fine-tune changes better than studies based on cohort-sequential surveys (e.g. Müller/Haun 1994). Another deficit in this area is the absence of monographs where cohorts are taken not only as the unit for comparisons but rather as the objects of study themselves in a more historic and synthetic manner. Therefore, the promises of cohort studies as new means for writing the collective life histories of a generation have at best only partially been realized.

There is nowadays a lot of loose talk about structure and agency, but apart from the proliferation of rational choice theory and microeconomic thinking within sociology, there do exist very few systematic research attempts of bordering the gap between action-centered approaches and structural analyses. While it has been wisely suggested that large-scale data analysis only provides the explananda, which then is up to rational-choice theory to explain (Goldthorpe 1998) a more integrated mode of research, it should have been possible by the new round of life course studies. This research tradition is not least grounded in the psychological human development tradition and, therefore, it seemed quite natural to expect that on this ground full-blooded human beings and structural constraints could be fruitfully brought together. Partly this has been realized. Most prominent are in this context the studies by Glen Elder and his associates (Elder 1974; Elder/Caspi 1988) where they connect the adaptive capacities of persons to differential resources and differential risk exposure. Very
fruitful psychosocial connections have also been realized and systematized by Michael Rutter (1996) who has demonstrated the multifold of bad and good coming from adverse developmental conditions. Some of the impressive examples in this area are the longitudinal follow-ups by Laub and Sampson (1988) building on the earlier studies by Glueck and Glueck (1950), where they demonstrated how seriously adolescent delinquents either followed a life-long criminal career or led perfectly normal lives depending on their marital choices. Another rare example for a close integration of psychological and sociological perspectives and measurements is the study by Diewald, Huinink and Heckhausen (1996) on the impact of control beliefs on the occupational trajectories during German unification. These researches also showed remarkable East German cohort differences in regard to self-respect and self-efficacy.

In this area one could also have expected that life course analysis and biographical study would come to a natural rapprochement thereby bridging the abysses between adherents of quantitative and qualitative research. One could easily imagine how cases in quantitative life course studies could be strategically selected, studied as cases and reinterviewed in depth in order to probe competing explanatory accounts or in order to bring to light the disjunction of the subjective accounts and vocabularies of motives on the one hand, and the non-conscious situational, collective and structural constraints on the other hand. In fact I know of only few studies where such combinations have been carried through. Grundmann (1992) and Schütze (1999) have used essentially quantitative material and reconstructed case histories. Pries (1997) in his study of Mexican working lives in Puebla has probably gone furthest to reap the benefits of both approaches within a single study. Abbott et al. (1986, 1990) have propagated optimal matching sequence analysis and the use quantitative material for more exploratory data analysis to cut across the old camps. However, in general, one has to concede that the expected rapprochement has not taken place and that qualitative and quantitative researchers have wasted their energies to downgrade their perceived foes and to protect their sects.

The contribution of life course studies to bridging the macro-micro gap has been chequered. Fine examples are investigations on individual outcomes of educational expansion on the transition to employment (Konietzka 1999) or on marriage and fertility (Huinink 1995) which rely on cohort comparisons or on decomposing compositional change. More directly in the form of time-variate covariates Blossfeld has studied, for example, the impact of the inflow of foreign workers on native workers’ chances for upward mobility and DiPrete and his associates have conducted impressive cross-national studies of employment restructuring on career mobility (DiPrete/McManus 1996 a, b; DiPrete/de Graaf et al. 1997). In these papers

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8 For a devastating critique, see however Wu 2000.
longitudinal data was combined with period specific national employment data. An outstanding example is a recent study by Britta Hoem (2000), where she explained fertility behavior of Swedish women by changes in local labor market conditions.\footnote{Although it should be added in all fairness that Britta Hoem (2000) could rely on full longitudinal register data.} But on the whole, one would have to conclude that too little use has been made of the opportunities of linking aggregate data on the local, regional and national level on a time-continuous basis with individual level longitudinal data.

Similarly, I would judge the harvest of studies on the effects of institutional rules and their changes on individual life course outcomes as less than optimal. On the one hand, we have a well-developed theory of the relationships between the welfare state and life courses (Mayer/Müller 1986; Mayer forthcoming). On the other hand, longitudinal data has been employed effectively to test the effects of such institutional rules as the length and level of unemployment benefits (Sørensen 1990; Hujer/Schneider 1990), age and generosity of retirement rules (Allmendinger 1994), the change of divorce laws (Wagner 1997), retraining policies in East Germany (Zühlke 2000) and the reduction of child benefits (Hoem 2000). However, so far there have neither been systematic cross-national comparisons of the effects of differing welfare state regimes on life course outcomes nor have survey studies really matched up to the requirements of experimental social policy intervention studies. In this sense, the potential of longitudinal data for purposes of the evaluation of social policies is still greatly underutilized.

The fact that longitudinal studies for good reasons rely on nationally representative samples has favored the focus on national changes of occupational structure and employment conditions as well as on national social policies. This obviously implies a large jump between the micro- and the macro-level. In contrast, many studies on careers concentrated exclusively on trajectories within a given organization (Brüderl 1991). It has, therefore, been recognized for some time that at least in the area of labor market behavior, the ideal design would not only include as much information as possible on firms, but would match samples of individuals with samples of firms (Kalleberg/Knoke/Marsden/Spaeth 1996; Abowd/Kramarz 1999). Only then could we accurately assess the impact of the fortunes of firms on the chances of individual workers. While such attempts have been made using surveys (see Kalleberg et al. 1996 for the US), register data would probably provide a more adequate solution.\footnote{Within the framework of the German Life History Study we are currently connecting retrospective survey data for the West German cohorts born 1964 and 1971 with data from the national employment register. This will allow us to use a set of firm characteristics as time-variant covariates.} But all of this is just a bare beginning.
In the field of gender studies great progress has been made on the basis of retrospective and prospective longitudinal data. This is not least the case since convergences and persistent divergences in life course patterns between men and women are at the very center of reconstructing gender differences, their cross-national differences and changes. Trappe, Rosenfeld, Huinink and Sørensen, for instance, have analyzed cohort changes in life course patterns of East German women before unification (Trappe/Rosenfeld 1998; Sørensen/Trappe 1995; Huinink 1995).

Have life course studies changed our views on social stratification, social mobility and class dynamics? Retrospective life course studies and prospective household panel studies alike have persistently shown the large amount of volatility in categorical and relative welfare positions. In this sense they have demolished our preconceived ideas of lifelong status or class membership, persistent poverty (Leisering/Leibfried 1999) or of a stable underclass. They have also demonstrated that standard transition tables of intragenerational class or status mobility greatly underestimate the degree of actual changes going on (Mayer et al. 1989). It has furthermore been shown that the conventional versions of the transitions between school and adult social class oversimplify this process. Not only is the process of differential qualification rarely concluded before entry into first employment and often implies several stages of training (Konietzka 1999), over long stretches of the career initial mismatches between achieved status and acquired qualification trigger processes of mobility within and between firms (Carroll/Mayer 1986). It is obvious that conventional studies would not even have detected the changes which were going on. But it is also fair to say that the earlier assumption of something like a “mature class position” (Goldthorpe 1980) 15-20 years after entry into employment was not far off the mark, since the rate of job and class shifts declines strongly with duration of labor force experience. Therefore, a more conventional four point comparison of social background/highest attained education/social class of first job and social class around the age of 40 does capture a large part of the rough contours of the class allocation process and its outcomes but hides many variations and changes in between these points.

In regard to class dynamics, life course data helped, for instance, to demonstrate that - at least in Germany - a new class of a stable service proletariat has not been forming (Blossfeld/Giannelli/Mayer 1993; Esping-Andersen 1993). But the more comprehensive project of defining and measuring a less static and less individualized concept of class on the basis of longitudinal and household data has so far hardly taken off.

The one research area where longitudinal data has proven its full potential has been the study
of transformation of formerly socialist societies (Mayer et al. 1999; Diewald/Mach 1998). Household panel studies have documented well the changes in income distribution and relative income position during the transformation, while retrospective studies have shown the processes of elite exchange and elite persistence, the reorganization of the labor force and reallocation of persons into a new class structure and stratification system (Solga 1997; Nee 1996; Szelenyi/Szelenyi 1995; Diewald/Mayer 1996). The time-dependent processes of labor demand, privatization and labor market policies have exerted strong and variable influences on individual opportunities.

Why have life course data and analysis proven to be especially fertile in the area of transformation studies? First of all they allow to reconstruct the reallocation processes in a multitude of interrelated steps of mobility across transition time: employment, unemployment and enrollment in labor market programs; moves between firms; moves between qualification levels and status mobility. For instance, the East German experience was characterised by a duality of trajectories which led either into unemployment or early retirement or into relatively high occupational and qualification stability. Second, life course data permit a close view of the temporal pattern. Again, in East Germany - in contrast to e.g. Poland - the early years after 1989 were particularly disruptive while at the same time those laid off very early also had the best access to the newly opened opportunities. Third, the outcomes after 5 or 10 years tell even for those who got through relatively successfully at best a partial story. In East Germany experience of spells of unemployment and a high rate of job shifts was pervasive across all skill levels (Diewald 1999, Diewald et al. 1999, Zühlke 2000).

The medium and long term impacts of societal upheavals and disruptions on individual’s lives have also been studied using life history data in regard to the Great Depression, World War II and its aftermath and the Cultural Revolution. Three kinds of findings seem most noteworthy in this regard. The first type of finding underscores the lifelong collective relative deprivation of cohorts which were exposed to adverse conditions during the formative years (Mayer 1988; Maas et al. 1999). The second type of finding demonstrates differential - both positive and negative - effects of early adverse conditions depending on availability of qualification, social and psychological resources (Elder 1974; Elder/Caspi 1988; Diewald/Huinink/Heckhausen 1996). The third type of finding shows delayed positive outcomes of early adverse conditions (Zhou/Hou 1999).

Another big argument in favor of microanalytic longitudinal studies was their potential richness for cross-national comparisons. Most noteworthy among such studies are Blossfeld/Shavit (1993) on transitions between education and work, Blossfeld (1995) on the “The New Role of Women” and Blossfeld/Hakim (1997) on part-time employment.
DiPrete/de Graaf et al. (1997) have studied job shifts and structural changes in the US, Germany, the Netherlands and Sweden. Allmendinger and Hinz (1997) used life course data to study cross-national differences in class mobility, Billari and Ongaro (1998) are using data from the Family and Fertility Surveys to study European variations in leaving home. Hillmert (2000) have used data from the British Household Panel and the German Socio-Economic Panel to study changes in training and the early career. The efforts to create an integrated US-German panel data file has provided a boost to comparative research (Dunn/Schwarze 1997), but it is still limited in variable scope. All in all, it seems clear that cross-national studies will benefit greatly from the availability of longitudinal micro-data. However, in this field again there is forceful competition from researchers relying on micro data from censuses, especially in the area of stratification and social mobility (Shavit/Müller 1998).

Finally, we have to assess the initial hope that the use of the same or similar data and more or less identical topics of study would re-integrate the theoretically, methodologically and empirically fragmented research of demography, sociology, developmental psychology and economics, and social geography. Although there are many more interdisciplinary cooperations on an individual level - as is testified by the compositions of the participants of this conference - not much of a rapprochement can be detected. Each of the disciplines has tended to reinvent the wheel, especially in regard to hazard modeling, and apart from Gary Becker’s influential ideas on family and household economics, very little in the way of theoretical integration has occurred. Another telling example is the area of career mobility where economics and sociology have hardly taken notice of each other’s work (Sichermann/Galor 1990).

4. Conclusion

This review has abundantly demonstrated that micro-analytic longitudinal studies at least in the area of life course research have led to an upsurge of innovative and substantive research. However, it has also become obvious that their potential is far from being exhausted. While the use of dynamic models in their simpler versions and the adaptations of estimation procedures to incomplete and truncated data has become routinized, the re-formulation of research problems as well as theory-building have not kept up the pace. Cross-national comparisons did enjoy a promising take-off, but theory-building has lagged behind the potential of the data and disciplinary fragmentation is still pervasive.
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