

New Directions in Life Course Research

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Abstract

Life courses are studied in sociology and neighboring fields as developmental processes, as culturally and normatively constructed life stages and age roles, as biographical meanings, as aging processes, as outcomes of institutional regulation and policies, as demographic accounts, or as mere empirical connectivity across the life course. This review has two aims. One is to report on trends in life course research by focusing on empirical studies published since the year 2000. The other is to assess the overall development of the field. Major advances can be observed in four areas: national individual-level longitudinal databases, the impact of institutional contexts on life courses, life courses under conditions of societal ruptures, and health across the life course. In four other areas, advancements have been less pronounced: internal dynamics and causal linkages across life, the interaction of development and socially constructed life courses, theory development, and new methods. Overall, life course sociology still has far to go to reach its full potential.

INTRODUCTION

Over the past 30 to 40 years, life course research has grown as an area of interdisciplinary study of human lives between birth and death, bringing together anthropology, demography, economics, sociology, and developmental psychology, with sociology as an important disciplinary anchor. A longitudinal and life course perspective has become widespread across the social sciences, and longitudinal data collections have not only proliferated, but have become the current gold standard of quantitative social science. Now entering its stage of maturity, has the study of the life course become routine and integrated into fragmented disciplines and specialties, or is it still a progressive field with some degree of intellectual unity? One emphatic advocate of the latter optimistic view is in the special issue of *Science* from June 2006 (Butz & Torrey 2006) in which longitudinal studies of the life course were celebrated as the most progressive and innovative research area of all social science.

There is a need to clarify what is specific to the life course perspective compared with other adjacent research areas. The following criteria represent an emerging consensus (Elder et al. 2003, Settersten 2003b, Mayer 2004):

- a. Changes in human lives (as changes in personal characteristics and transitions between states) are considered over a long stretch of lifetime, such as from childhood to old age, and not just as particular episodes, such as transition to marriage or first birth, or narrow life phases. There is also the strong assumption that prior life history has strong impacts on later life outcomes.
- b. Changes in human lives are investigated across a larger series of cohorts rather than by a few cohorts or synthetic cohorts based on cross-sectional data (lifetime and historical time).
- c. Changes in human lives are studied across life domains, such as work and family, often implying interdisciplinary approaches.

- d. Life course development is analyzed as the outcome of personal characteristics and individual action as well as of cultural frames and institutional and structural conditions (relating micro, meso, and macro levels of analysis, structure, and agency).
- e. Human lives are viewed in the context of collective contexts (couples, families, cohorts).
- f. Life course/cohort analysis is essential for social policies with a paradigm shift from curative to preventive intervention.

In this review, I give preference to materials published since the year 2000, to empirical research, and to publications that satisfy either criterion (a) and/or at least two of criteria (b) to (f) above. I also restrict myself to life course sociology in contrast to human development more broadly, although the boundaries of such a field are clearly somewhat arbitrary.

The review is organized into 11 sections. In the first section, I provide a shorthand history of the development of the field. In the consequent section, I lay out two competing views about recent trends and define a set of tests of the competing views of early growth versus late decline. In the remainder, I review a number of topics: maturation (from a research program to systematic research), the long life (early conditions and later life outcomes), institutional frames and conditions for life courses, life courses and sudden system change, limits of interdisciplinarity (life course sociology and life span psychology), emerging topics (health across the life course), new theory, and new methods. In the final section, I attempt, on the basis of that evidence, to give a provisional answer to the question about the current state of the field.

A SHORT HISTORY OF LIFE COURSE SOCIOLOGY

Life course sociology emerged and developed over several decades (Elder et al. 2003, pp. 3–19; Mayer 2004, pp. 167–69; Elder & Shanahan 2006, pp. 668–79). In the years between the two

world wars, ideas of the life cycle denoted simultaneously personality development, collective life histories, and a method (e.g., Thomas & Znaniecki 1918–1920). In the same period, Karl Mannheim (1928, 1952) proposed another highly synthetic concept—the generation—that fused quite general ideas about social metabolism (i.e., social change via the succession of cohorts) with ideas about historical styles and historically specific collective actors.

In the 1940s and 1950s, the sociological concept of age differentiation as a structural category became more clearly distinguished from the psychological traditions of human development focusing on internal personal dynamics. It should be stressed, however, that the close link between psychological, social-psychological, social, and historical perspectives remained a major focus in the extensive work, e.g., of Elder (1974, 2003) and his associates.

During the 1960s and 1970s, the broader concept of age differentiation (and related fields of research) was further subdivided by the narrower concept of age stratification (which stressed not only functional specificity, but also inequalities in resource allocation and power), biography as subjective narrative, generation as a cultural construct, the life course as social structure and institutional pattern, and the demographic concept of the cohort.

In the 1980s, several attempts were made to pinpoint the specificity of life courses (and biographies) both within and in contrast to past societies. On the one hand, Kohli (1985) and others tried to demonstrate how life courses derive from the prerequisites of the economy where life stages center around work. On the other hand, the uniqueness of modern life courses was derived from the emergence of the welfare state (Mayer & Müller 1986). It was, finally, from the mid-1980s into the 1990s that something like a differential life course sociology emerged, i.e., descriptions of how patterns of life courses varied between increasingly limited historical periods and societies (Mayer 2005).

Looking at the current state of the field, it is fruitful to distinguish two perspectives on life course sociology. First, it can be viewed as a specific branch of a larger field that also embraces human development, life span psychology, social demography, and aging. Within this perspective, we observe divergent tendencies: those who want to keep all these dimensions together (e.g., George 2003, Mortimer & Shanahan 2003, Settersten 2003a, Elder & Shanahan 2006) and those who believe progress may be achieved not only by analytically differentiating more consistent subfields, but also by moving away from developmental origins toward a specific understanding of life courses as institutionally embedded purposive action (e.g., Laub & Sampson 2003, Mayer 2004, Kohli 2007). A second perspective points to different conceptual and theoretical traditions: a (mainly) U.S. variant that embraces the developmental tradition and still retains some affinity to the structural-functionalist differentiation of age groups and age roles, and a European variant that emphasizes the institutional genesis and macro contexts of life course patterns.

ALTERNATIVE VIEWS ON RECENT TRENDS

Recent stock-taking of the development of life course research (Mayer 2000, Shanahan 2000, George 2003, Hogan & Goldscheider 2003, Mortimer & Shanahan 2003, Kohli 2007) has noted past achievements, future potential, and stubborn deficits. On this basis, we can formulate alternate views of its recent trajectory:

1. Life course research was a progressive field for a few decades, but now it has achieved its goals and is finalized and routine. It has become integrated into other specialties and is part of applied science.
2. After major successes, especially in regard to data collection, specifying microlevel causal mechanisms, and policy research, life course research is in a phase of stagnation and refragmentation. The ideal of a new interdisciplinary and unitary field has not materialized.

3. Life course research as a field is still cumulative, progressive, and innovative. Its program is far from being realized. The fruits of longitudinal data collections are still to be reaped, interdisciplinary research is still far from taking off, and methodological breakthroughs are badly needed (and coming).

In the following, I review a number of subfields. These reviews serve both as the materials to report on recent trends as well as the evidence for adjudicating among the above claims.

MATURATION: FROM A RESEARCH PROGRAM TO SYSTEMATIC RESEARCH

For the maturation of a research field, we expect that early programmatic statements and illustrating empirical examples are gradually replaced by a series of well-designed studies, data collections, theory building, cumulative evidence, as well as theory corroboration and modification. Given this standard, life course sociology has moved beyond the initial stage, but still has a long way to go.

Until the 1970s, the empirical gold standard of social science was the cross-sectional survey and its progeny, the replicative survey tradition, e.g., the U.S. General Social Survey. Since the 1980s, prospective longitudinal studies of individuals and households such as the Panel Study of Income Dynamics, the Health and Retirement Survey, the German Socio-Economic Panel, and the British Household Panel have become the new gold standard, augmented by nationally representative retrospective and prospective cohort studies. Over the years, they have all generated databases that now allow the observation of human lives for large representative samples across long stretches of lifetime and across ever more birth cohorts. This maturing of the household panel studies and the institutionalization of cohort-sequential studies, such as the British Cohort Studies, the German Life History Study, or the National Longitudinal Surveys and National Longitudinal Survey

of Youth, has allowed, for the first time, earlier traditions of local or group-specific longitudinal studies to be surpassed. In addition, the continuation of studies that were originally started for high school students like Adolescent Health (who are now in their mid-20s) or young adults like the Wisconsin Longitudinal Study (who are now close to age 70) also opens up entirely new research opportunities.

In the 1990s, many longitudinal studies focused on single life domains (e.g., the World Fertility Survey and Family and Fertility Survey) and specific life phases (e.g., the Health and Retirement Study). The most recent longitudinal studies increasingly cover multiple life domains and multiple life phases, and, by including psychological measures and biomarkers, they move beyond conventional social science variables. Thus far, only Britain has fully institutionalized the complete range of longitudinal studies, combining household panels with single cohort studies and corresponding research institutes. But many other countries cover significant parts of this full program. For instance, Germany has the prospective Socio-Economic Panel and the retrospective multicohort German Life History Study (Mayer 2007) and is currently launching two sets of prospective cohort sequential studies (PAIRFAM and National Educational Panel Studies). In Sweden, the Level of Living Study is extended to life history components (Jonsson & Mills 2001). A major life course study is being planned in Japan.

The availability of longitudinal data will give an enormous push to life course research conditional on sufficiently advanced training of their potential users. By their very nature, longitudinal data collections tend to encourage interdisciplinary work or at least the involvement of multiple specialists and multiple disciplines. The medical and psychological experts of early infancy across the life course are connected to experts in adolescence and schooling. They in turn connect to specialists in training, labor markets, and family formation and finally to gerontologists and geriatricians. Although one could cite examples of such multidisciplinary

cooperation (e.g., within the British Center for Longitudinal Studies and the Institute for Social and Economic Research or the planning groups for the Canadian Household Panel), exemplary interdisciplinary studies are rare.

Indicators of institutionalization also include the publication of a major handbook (Mortimer & Shanahan 2003), introductory textbooks (Shanahan & Macmillan 2008, Quadagno 1999), major readers (Heinz & Marshall 2003, Settersten 2003a), ASA syllabus collections, the extensive work of MacArthur Foundation networks (Settersten et al. 2005), and three new journals with a strong life course affinity (*Advances in Life Course Research*, *Research in Human Development*, and *Longitudinal and Life Course Studies*). It is noteworthy that the latter journal frames its sections as health sciences, social and economic sciences, statistical and methodological sciences, and development and behavioral sciences.

There has been less development in regard to the creation and maintenance of (interdisciplinary) research centers. If we do not count those centers that are primarily focused on aging, there are just a handful, such as the above mentioned British Center for Longitudinal Studies in London as well as the Institute for Social and Economic Research at the University of Essex, the Center for Human Development at Cornell, the life course group at the Carolina Population Center, and the Center for Research on Inequalities and the Life Course (CIQLE) at Yale. However, within other research centers such as the Swedish Institute for Social Research and the Socio-Economic Household Panel Group at the German Economic Research Institute, there have been marked shifts toward an interdisciplinary life course orientation.

THE LONG LIFE: EARLY CONDITIONS AND LATER LIFE OUTCOMES

Has life course research progressed in mapping and analyzing lives over many decades and across several life stages, from early childhood

or adolescence until the postretirement years, and what have we learned from such studies? There are two kinds of questions that one would hope to answer by such studies: First, how stable are certain socioeconomic characteristics and behavior across the larger life span? And second, how can we best understand the dynamics of life trajectories? Do early conditions of childhood, adolescence, and early adulthood have direct impacts on middle and later adulthood, as well as the retirement years and old age, which are not accounted for by the crucial intervening outcomes like educational attainment, career entry, and family formation? Can events and conditions in adulthood significantly alter further trajectories and outcomes?

There are actually relatively few studies relating early initial conditions to late life outcomes. The contributors to Duncan & Brooks-Gunn (1997), Hobcraft & Kiernan (2001), and Wagmiller et al. (2006) track the economic consequences of growing up poor. But almost all these findings look only at outcomes during adolescence and early adulthood. One exception is Hauser & Sweeney (1997), who, using data from the Wisconsin Longitudinal Study (WLS), conclude that “there is scant evidence that the direct effects of poverty last beyond entry into adulthood” (p. 574). Warren et al. (2002), also using the WLS data, test how determinants of occupational attainment, such as family background, education, and ability, change in their impact across the life course. Another exception looking at very long stretches of life (up to age 72) is Crosnoe & Elder (2004). They follow 424 boys born between 1910 and 1914 from the Terman Sample of Talented Children and show for 2 out of 18 parameters significant effects relating early family experiences to career trajectories (Crosnoe & Elder 2004, p. 645). Francesconi et al. (2005) review the impact of family structure during childhood on later life attainment in West Germany, using the German Socio-Economic Panel data, and conclude that, beyond influences on educational attainment, no long-term effects can be found for reported health, earnings, or risk of unemployment,

except for the likelihood of smoking and the risk of receiving welfare assistance. Umberson et al. (2005) look at stress in childhood and adulthood and their effects on marital quality. Peacock & Kitson (1999) assert the limited impact of early familial disruption on subjective well-being in later life. Schoon (2006) studies the combined effects of early childhood economic conditions and reading ability at ages 5 and 7, distinguishing four groups, those with multiple advantages, the underachievers, the resilient, and the vulnerable. On the basis of data from the British Cohort Study for the 1958 and 1970 birth cohorts, Schoon (2006) found no effects on family structure, moderate effects in the areas of work (unemployment and occupational status), and generally small effects on feelings of distress and being in control. Furstenberg (2007) found no or only moderate negative consequences of early childbirth for a group of unwed mothers 40 years later, after controlling for selectivity.

Among this scattered and mostly negative evidence, several bodies of work point in the opposite direction: studies of childhood conditions on later life outcomes in health (see section below) and labor market behavior (Hank 2004), affective relationships between parents and children and learning motivation (Berger & Fend 2005), and (a research tradition that is rarely thought of in terms of the life course) the intergenerational transmission of divorce (Amato & DeBoer 2001, Lyngstad 2006). Cumulative and cross-national evidence points to a mechanism that operates above and beyond selection effects, i.e., lower commitment to marriage among children with divorced parents (Wolfinger 2005, Härkönen & Dronkers 2006).

Laub & Sampson (2003) have contributed the most important recent study of life course dynamics across a very long stretch of the lifetime. In their sequel to their earlier work on trajectories of 52 juvenile offenders, they not only conduct an exemplary combination of qualitative and quantitative methods (latent clustering and hierarchical effects models), they also theoretically challenge the whole field for its myopic view of early determinants of later life outcomes and demonstrate the considerable

impact of both institutional and agency factors in adulthood to modify and reverse earlier trajectories. They forcefully reject the developmental premise of courses set early in life and continue relatively unaffected by external conditions and contexts, a premise that is also shared by most life course theorists. This wake-up call by Laub & Sampson (2003, chapters 3, 10) has become especially salient in the context of a rapidly growing body of literature in psychology (Roberts et al. 2003, Staudinger 2005), economics (Heckman 2006, Cunha et al. 2005), behavioral genetics (Plomin et al. 1990, Plomin & Caspi 1999), and demography (Scholz et al. 2005) in locating life course-determining influences ever earlier in life.

INSTITUTIONS AND THE LIFE COURSE

Since the 1970s, there has been an ongoing concern over whether life courses have become more or less institutionalized (with wildly popular claims such as the pluralization of family life, the erosion of normal work biographies, and the increasing fuzziness of both the transition to adulthood and from work to retirement) (Macmillan 2005). More recently, this earlier focus on the orderliness and disorderliness of lives and their bases has been supplemented by the more fruitful inquiry into the very specific impacts that institutions and policies have on life course outcomes (Mayer 2005, Kohli 2007). Longer-term historical comparisons have been the hallmark of the first of these research traditions, and cross-national comparisons are proliferating in the second.

Although the thesis of an increasing pluralization of family forms has found partial support (Brückner & Mayer 2005, Wu & Li 2005, Elzinga & Liefbroer 2007), there remains conflicting evidence and much controversy in regard to trends in the stability of working lives. Grunow & Mayer (2007) and Korpi & Tählin (2006) are impressed more by the surprising stability of firm tenure and occupation, whereas Blossfeld & Mills (2006) and Struck (2006) see some evidence for decreasing stability often

assumed to be due to globalizing markets. Many of these studies suffer from a lack of clarity over what is being counted as destandardization and deinstitutionalization and/or from a lack of a theoretical model that would allow the attribution of causes. Korpi & Tählin's (2006) study of the missing consequences of globalization on job stability among Swedish men is a notable exception.

In a remarkable series of studies combining cross-national research cooperation with cross-national analysis, Hans-Peter Blossfeld and associates have systematically covered various aspects of the life course, such as education and marriage markets, careers of couples (Blossfeld & Drobnič 2001), youth labor markets (Blossfeld et al. 2005), women's and men's careers (Blossfeld & Hofmeister 2006, Blossfeld et al. 2006b), as well as late careers (Blossfeld et al. 2006a). These studies share a reliance on individual-level longitudinal data, similar but not identical research designs, single country chapters, as well as analytical (first) and summarizing (last) chapters by the editors. They also include a remarkable number of countries with some variation from volume to volume: Germany, Netherlands, France, Sweden, Norway, Hungary, Estonia, Britain, Mexico, Spain, Ireland, Italy, the United States, Chechnya, Denmark, and Poland. Almost predicated by this "many countries" design, these books test and affirm (*a*) universal tendencies, i.e., increasing risks as a result of globalizing markets, and (*b*) a search for between-country similarities and differences usually framed into Esping-Andersen's (1999) regimes of welfare capitalism.

Whether aggregating institutional regimes across and within nations is a fruitful way to conceptualize institutional conditions of life course outcomes and whether life course regimes are a useful way to construct and analyze such outcomes are highly controversial (a critical view can be found in Mayer 2005). But there is little doubt that a marriage of the new political economy (Hall & Soskice 2001) and comparative life course research could be highly productive (Mayer 1997, Kohli 2007). But the

comparison of only two or three countries and the focus on very specific institutions and policies might prove more promising. Good examples are Grunow (2006), comparing Germany and Denmark with counterintuitive results on the career trajectories of women and men in both countries; DiPrete (2002), comparing the exposure to life course risks and their differential for divorce, job loss, and poverty in Germany, Sweden, and the United States; Gangl's (2004) comparison between Germany and the United States regarding the scar effects of unemployment; and a comparison between Germany, Sweden, and the United States on the effects of family policies on women's careers (Aisenbrey et al. 2009).

LIFE COURSES AND SUDDEN SYSTEM CHANGE

The hallmark of the life course tradition has been that among its primary topics were changes of life course patterns across historical time and the impact of historical contexts on life course outcomes (period effects). There have been a number of recent contributions in regard to the former concern, with a tendency to use extant data sets to extend the breadth of the periods (for example, birth cohorts compared), i.e., in regard to transitions to adulthood (Gauthier & Furstenberg 2005, Brückner & Mayer 2005, Konietzka 2005, Fussell & Furstenberg 2005, Wu & Li 2005), job and occupational shifts (Grunow & Mayer 2007), and income trajectories (Brückner 2004). MacLean & Elder (2007) and Dechter & Elder (2004) continued Elder's former work on the impact of World War II military mobilization on health, marital life, delinquency, and career advancement. Hillmert & Mayer (2004) have compared the West German 1941 and 1971 birth cohorts and showed how policy interventions can counteract the effect of cohort size on training opportunities. Zhou (2004) and Zhou & Hou (1999) studied the effect of the Cultural Revolution on (delayed) education, occupational attainment, and income, as well as cohort variations in job shifts in China.

The very sudden system rupture connected to the transition of former socialist countries has provided a new application and testing ground of life course research in regard to the relationship of lifetime and historical time. Eyal et al. (1998) developed a theory of how the transformation of these countries is processed both at the level of institutions and on the level of individual life courses, families, and households. Mayer (2006, pp. 15–17) has outlined a systematic account of how life courses act as medium, mechanism, and outcomes of these transformations. Sudden system change provides a crucial experiment for several tenets of life course theory: Is the usual assumption of the early fixation of lives born out in the transition to postsocialism? Do the institutional imprints of the system of origin and the system of destination change lives radically, or are life courses, as shaped by the old system, projected into the new era? In which way do the former lives act as constraints and resources under the new circumstances? Are there age dependencies in the willingness and ability to adapt? Which are the sources for continuity despite major disruptions?

Diewald et al. (2006b) have traced the consequences of the transformation of East Germany and have spelled out the implications their findings might have for a general theory of the life course. Continuous event histories show a much higher degree of turbulence than do either cross-section comparisons or panel studies. Former qualifications, skills, gender, and age at the time of the transformation play the strongest role in trajectories after system rupture. Former political capital (party membership and function) did not increase the risk of unemployment but led to both upward and downward mobility. The formerly self-employed fared surprisingly poorly after the transition. Prior biographical experiences (e.g., of occupational flexibility) did not predict later work trajectories. Over a 6- to 10-year period, occupation and family ties were highly stable (stability despite or because of turbulence). Negative experiences accumulated for those around age 50 at the time of transition,

an unexpected example of the possible emergence of a distinctive generation even in late adulthood.

The East German experience of unification also provided the context for a study by Silbereisen and his associates on the effects of family income loss on depressive mood and transgression among adolescents. Building both on Glen Elder's work and comparative work in West Germany and Poland, Silbereisen's study showed that, in contrast to West Germany, a decline of family income did not result in depressive mood of fathers and, consequently, of children. Similar to Poland in the 1980s, individuals did not blame economic hardship on themselves but rather on collective circumstances (Forkel & Silbereisen 2001, Silbereisen et al. 2002).

THE POTENTIAL AND LIMITS OF INTERDISCIPLINARY RESEARCH: LIFE COURSE SOCIOLOGY AND LIFE SPAN PSYCHOLOGY

An area where one might have expected increasing interdisciplinary cooperation is in the study of the interaction of developmental and contextual factors across the life course. Although this was clearly one of the major postulates in earlier research programs, one can observe more decline than growth in research integrating life course sociology, life psychology, and related disciplines (Mayer 2003). Fundamental issues remain both in how to approach these interactions and in how to develop integrated research designs.

On the analytic side, some scholars have argued that the genetic, physical, and psychological constraints on how people live out their lives and the interindividual variations resulting from these constraints are not just non-negligible but rather overwhelming compared with the determinants resulting from sociocultural differences (Rutter 1997, Shanahan et al. 2003). It is obviously difficult, if not impossible, to assess such relative weights, although one might at least tender the hypothesis that across evolution, social and cultural construction

would tend to increase in their relative weight and internal factors would recede in importance (Mayer 2003). In stark contrast, however, Heckhausen (1999) (see also Schmeiser 2006) argues that psychological modes of regulation of the life course should become more important than structural or institutional constraints. She makes a distinction between external and internal regulation: External regulation is equated with social conditions such as legal sanctions, group pressure, or organizational rules; internal regulation is equated with relatively stable psychological dispositions related to modes of adaptation and coping, or with regard to substantive preferences. Heckhausen (1999, pp. 34–35) claims that “external enforcement via societal power has gradually, over centuries, been transformed into internalized rules and norms of conduct and behavior. This process of internalization renders the need for external societal enforcement obsolete.” Heckhausen’s position is consistent with sociologists’ claim that life courses have become deinstitutionalized and that cognitive biographical scripts about the normal life course have become more important (Kohli 1985).

Although the historical argument seems plausible at first, one may doubt its applicability to modern life courses as far as the role of normative orientations is concerned. According to Meyer (1986), strong internal norms that guide life courses were appropriate and widespread in the seventeenth to nineteenth centuries, but they would be highly dysfunctional in present-day societies, where very flexible situational adaptation is required. The relative importance that people and cultures accord to their lives as an overall developmental project is highly variable (Brandtstädter 2007).

One rare instance in which it was possible to test empirically which role psychological dispositions play in life course processes and whether they are responsive to changing social contexts is the transition of East Germany from a socialist society to a market economy. Indeed, psychologists argue that personality characteristics should show most salience in times of sudden change and turbulence (Caspi & Moffitt

1993). In the context of a study of life courses during the transformation of East Germany after the fall of the Berlin Wall, Diewald et al. (1996) examined first how control beliefs, control strategies, and feelings of self-respect varied among groups of different age and different occupational experiences before 1989 and between 1989 and 1993. Second, Diewald (2006) tested whether control beliefs had a net impact on unemployment, downward mobility, upward mobility, and occupational shifts between 1989 and 1993. It is noteworthy that control cognitions played an important role in preventing unemployment but that they had no significant effects on upward and downward mobility. For the two variables of internal control and fatalism, only fatalism showed any effect at all and on only one of the four dependent variables: unemployment. In general, the evidence from these studies points to psychological dispositions more often being modified by (in this case, dramatic) life course events than being a strong influence on life course adaptation. At any rate, it is still a long way until the emerging differential life course sociology will be matched with a similarly differential study of the linkages between macro social contexts and human development.

EMERGING TOPICS: HEALTH ACROSS THE LIFE COURSE

The fastest growing research area in life course sociology and related fields, especially epidemiology, concerns the trajectories of health outcomes and the mechanisms responsible for age-specific exposures to health risks and the age-specific differentials in the impact of such risks. This is an important area, not only because it has enjoyed disproportionate growth in recent years, but also because of its potential contribution to the issue of mechanisms operating across the life course and the way individual processes are related to macrostructural outcomes. We identified more than 100 publications with explicit references to health and the life course for the period since 2000. Obviously we cannot do justice to this

literature in a short section. I therefore provide three pieces of information (the major journals of these publications, the main health outcomes, and the major life course condition covered) and then give briefs of a few exemplary studies.

Articles on health and the life course can be found across a very wide range of journals, but the bulk was published in *Social Science and Medicine*, *Research on Aging*, *The Journals of Gerontology*, *Journal of Health and Behavior*, *American Journal of Epidemiology*, *European Journal of Epidemiology*, and *American Journal of Public Health*. *Research on Aging* (Lynch 2008) published a special issue on "Race, socioeconomic status, and health in a life course perspective" that represents the state of the art in combining substantive theory, advanced statistical techniques, and longitudinal data.

Two main research tracks concern the linkages between early conditions and later life health, morbidity and mortality, and the age-specific variation of health risks by social class, education, and income. The life course framework has gained prominence in this context as the major avenue for understanding the relationship between socioeconomic inequalities and health (Ben-Shlomo & Kuh 2002, Lynch & Smith 2005, Blane et al. 2007, Guimaraes 2007). By far, most publications deal with age-associated health risks and their effects in subsequent life.

In regard to health outcomes, these studies deal with a very wide range without yet privileging specifics: depression, mental health, chronic disease, cardiovascular disease, smoking, disability, self-rated health, marital well-being, obesity, stress, physical activity, drug use, affective relationships, oral health, hospitalization, cognitive ability, optimism/pessimism. Among life course conditions, the independent variables concentrate on parental education and socioeconomic status during the individual's childhood and adolescence. A few studies look either at health trajectories or their variation across social groups (Elstad 2005, Chen et al. 2006, Kaplan et al. 2007, Kim & Durden 2007, Freedman et al. 2008).

In the latter tradition, House et al. (2005) report a number of studies based on four waves of data from the Americans' Changing Life Study spanning a period of 15.5 years between 1986 and 2002. Applying multivariate regression and growth curve analyses, they conclude that such socioeconomic disparities are small in early adulthood, increase through middle adulthood and early old age, and decrease again in later old age, controlling for selective mortality. Compression of morbidity and of functional impairment is realized to a much greater extent among the better educated and well-off than among the disadvantaged. House and coauthors attribute these differential health trajectories to differential exposure to psychosocial, environmental, and biomedical risks and differences in welfare supports. They also conclude from their age-sliced longitudinal analysis that the observed patterns are due much more to socioeconomic conditions affecting health outcomes than to the reverse causal impact. Finally, they ascertain cohort changes with the effect of educational disparities on health outcomes in middle and old age.

Given the cumulating evidence on socioeconomic inequalities in health across the life course, ever more attention is being paid to the mechanisms explaining these disparities. House et al. (2005) found that education can explain the age of onset of functional disabilities, whereas income proves to be more salient for their progression. Lynch (2008) found weakening direct effects of education on health across cohorts and increasing indirect effects mediated through income levels. Warner & Hayward (2006) concluded that the early life effects on black-white differences in men's mortality are mainly mediated via education and occupational attainment. In contrast, Walseman et al. (2008) show that early educational disadvantages produce divergent black-white health trajectories in early adulthood even after controlling for adult educational attainment.

Palloni and coauthors (Palloni 2006, Palloni et al. 2008) return to the issue of whether and how early health conditions affect social class position in middle adulthood. On

the basis of a very systematic search of the literature, of longitudinal analyses using the British National Child Development Study, as well as of Monte Carlo simulations, they conclude that early health net of parental influences can account for only about one-tenth of the relations between parental and filial social class. Similarly, they demonstrate that early health conditions contribute little to the (strong) socioeconomic health gradient in adulthood. However, because the parental environment has a strong impact on childhood health, they make the strong claim that the early health-later social class linkage should not be discounted as a mere selection effect, but rather should be seen as a key mechanism in the reproduction of social inequality.

Under the rubric of emerging topics in life course research, we should also pay attention to the role of genes and other biological processes in life course trajectories. Although life course psychology has been much more open to an integration of theoretical perspectives and research designs with biology, especially behavioral genetics, life course sociology tended to ignore the biological foundations of the timing of social events and transitions. At the moment, work in this area has been largely conceptual and programmatic (Shanahan et al. 2003), but it is already clear that in reopening the dialogue between the biological and social sciences, the interaction of biological life history and sociopsychic life course could be a privileged field of research. One of the most promising fields is research of hormonal effects on adolescent behavior (Susman 1997; Udry 1988, 2000; see references in Shanahan et al. 2003).

NEW THEORY?

In contrast to other disciplines dealing with human lives, life course sociology lacks a coherent body of theory. For instance, economics has investment/return theories to account for action across the life course based on rational choice assumptions: human capital theory and the life cycle theory of consumption and savings (Behrman 2003, Bonneuil & Saint-Pierre

2008). Life span psychology has two related theories based on rational choice premises: (a) selection, optimization, and compensation (Baltes 2003) and (b) assimilation and accommodation (or primary and secondary control) as processes of self-regulation. Behavioral economics has developed the intuitive theory of time discounting, but it has also demonstrated its partial lack of empirical confirmation (Frederick et al. 2002). Biology, of course, has the well-established theory of maturation and senescence (Hayflick 1998, Shanahan et al. 2003). There is nothing comparable in life course sociology. Life course sociology has a perspective—a set of orientations or heuristics (Mayer 2004, Elder 2003)—and a relatively full conceptual tool kit containing, among other things: age norms (on time, off time, and their presumed consequences) (Settersten & Mayer 1997); time (event, state, and duration) dependency; transitions and trajectories; and turning points (Rutter 1996). One might add to the tool kit important theories that deal with the effects of early developmental experience on long-term life consequences, such as Caspi & Moffitt's (1993) persistence/desistance perspective on crime, Coleman's (1988) social capital paradigm, and the transition model for school effects (Entwisle et al. 2003).

Indeed, because there is not just one mechanism underlying the social structuring of human lives, but rather manifold mechanisms operating on the individual, meso, and macro levels, one might contend that a simple, unified sociological theory of the life course is not possible at all. Nonetheless, I claim that the lack of explanatory theory(ies) accounts for much of the mostly descriptive or illustrative rather than confirmative nature of life course research. There have been a few recent developments that take first steps in remedying this deficit.

Life course sociology needs to answer satisfactorily the question of what kind of mechanisms operate to relate early conditions in life to later outcomes. A number of recent papers have tried to qualify processes of the accumulation of advantage and disadvantage as such a mechanism (O'Rand 1996, 2003, 2006; Sampson &

Laub 1997; Dannefer 2003; DiPrete & Eirich 2006; Elder & Shanahan 2006; Willson et al. 2007; Douthit & Dannefer 2007; Ferraro et al. 2009). These theories address two mechanisms of generating increasing or decreasing advantage across the life course. One source operates on the individual level and functions either according to the investments/returns model or the exposure-to-risk model. The other source operates on the level of cohorts, i.e., increasing intracohort inequality across collective lifetime resulting from cohort-linked stimuli, experiences, and events, not the least of which is intracohort competition. Increased intracohort competition often results from shifting supply/demand balances, e.g., by changing cohort size. For a long time, the idea of cumulative advantage and disadvantage was not much more than a metaphor. This has changed to some degree by the work of DiPrete & Eirich (2006), who formally specified the underlying growth processes, and Ferraro and associates (2009), who make a strong argument for distinguishing between the mechanisms producing cumulative disadvantage and those producing cumulative advantage. But there is still no sufficient clarity in distinguishing, for example, between disadvantages and handicaps, such as between conditions that are currently bad and those that are bad in their consequences, irrespective of whether they are experienced as currently bad or not. Another continuing puzzle is the often observed decline in intracohort inequality at higher ages that can only partially be accounted for by selective panel attrition or selective mortality (Willson et al. 2007, Lynch 2008). For recent applications of cumulative advantage theory in health, see Walseman et al. (2008), Shuey & Willson (2008), and Taylor (2008).

A second area of theory development also tries to go beyond the language of life courses as sequences of transition and states and instead focuses on the concept of risk (O'Rand 2003). Exposure to risk, measured by its incidence and duration, can be a powerful concept in mapping and measuring life courses. It also has the virtue of tying life course research to public

policy. An emergent literature looks at risks that are specific to given welfare state policies (Jonsson & Mills 2001, DiPrete 2002, Gangl 2004, Mayer 2005). DiPrete's (2002) typology of welfare states, by combining degrees of risk exposure and of risk compensation, is a major advance in theories relating the state and life courses. Leisering (2003) also markedly refines earlier theory building (Mayer & Schöpflin 1989) regarding policy effects on the life course.

There are a few other strands of theory development, however, that have not yet resulted in (much) empirical research and therefore remain postulates rather than tested hypotheses. Huinink and others have tried to incorporate rational choice theory into a life course framework but have not progressed much beyond single event transitions (Feldhaus & Huinink 2009). Hakim (1999) has stressed the role of life scripts for explaining family formation behavior as an alternative for the adaptation of values to changing circumstances. Heckhausen (1999), Shanahan (2000), Settersten (2003b), Schmeiser (2006), and Diewald & Mayer (2008) have taken up the issue of agency and actors in life course processes.

Despite these recent developments in life course theory, its present state is far from satisfactory and severely limits the consolidation of the field. To make progress, there is hardly any alternative to carefully restricting the explananda.

NEW METHODS

Mirroring substantive concerns, life course sociology has followed either holistic or analytic aspirations in its methodology. Holistic approaches tried to develop and apply algorithms to describe and explore trajectories, especially in the form of sequences, whereas analytic approaches followed the exemplar of demography on modeling events and transitions (Fasang 2008, p. 116). In both areas, some progress has been made in recent years.

Much of the takeoff of life course sociology was due to the introduction of event

history analysis. In this tradition, a number of additional textbooks have been published in recent years (Singer & Willett 2003, Box-Steffensmeier & Jones 2004, Blossfeld et al. 2007, Castilla 2007). However, because parametric models are only rarely being applied in substantive applications (Mayer 2000), the most widespread uses, like piecewise-constant exponential models, moved well into the mainstream of statistical causal modeling. This tendency has been accentuated by the incorporation of longitudinal analysis into the more general framework of multilevel analysis (Little et al. 2000, Singer & Willett 2003). Blossfeld & Rohwer (1997) elaborated the argument for life course analysis as an instrument for specifying and testing causal hypotheses. Billari & Phillipov (2004) applied Lillard's (1993) simultaneous equations hazards models studying the association of motherhood and educational participation to better account for unobserved heterogeneity.

Following up on the fundamental critique by Wu (2000) and Levine (2000) of the claims made by Abbott (Abbott & Tsay 2000, MacIndoe & Abbott 2004) for optimal matching analysis, a number of recent papers have suggested improvements of sequence analysis (Elzinga 2003, Lesnard 2006, Stark & Vedres 2006, Aisenbrey & Fasang 2007, Fasang 2008). The main objections to optimal matching were the lack of validation methods, deficits in handling missing and censored data, and an inability to deal with complex interdependencies in the data (Aisenbrey & Fasang 2007). Remedies are proposed by using baselines to enhance the interpretability of distance costs (Brückner 2004, Scherer 2001), deriving data-based transformation costs in piecewise comparisons, treating missing data (Stovel & Bolan 2004), accounting for process direction (Stark & Vedres 2006), and offering alternative sequence analysis methods instead of optimal matching (Elzinga 2003, Billari & Piccarreta 2005, Lesnard 2006).

Clustering trajectories by latent class models was another attempt to arrive at overall typologies of life courses (for applications, see Laub

& Sampson 2003, Moen & Roehling 2005, Shuey & Willson 2008). Disappointingly little progress has been made in the still very promising area of visual methods of data exploration. Exceptions are sequence index plots (Köhler & Brzyjnsky-Fay 2005), vector graphs (Mirowsky & Kim 2007), and mapping joint transitions (Billari 2001).

Somewhere in between the analytic and holistic traditions is the recent surge in growth curve models that on the one hand model trajectories, but on the other hand also fully incorporate causal factors. Shuey & Willson (2008) have applied latent growth models to racial disparities in health trajectories. Applications of growth curve models will increase, especially if performance testing is extended beyond the school years. However, there are few areas in sociology where we have metric data for changes in functional capacity. Therefore, there will always be more need for modeling transitions between states.

One other area where methodological innovations have occurred is the handling of aggregate outcomes of life course behavior. Yang & Land (2006) and Yang et al. (2008) have finally proposed a convincing but fairly technical and nonintuitive solution for estimating age, period, and cohort (A-P-C) effects. This probably comes too late, because micromodeling largely (both in substance and method) preempts the need for the A-P-C macroaccounting scheme. Billari and coauthors introduced agent-based models to bridge the micro-macro gap (Billari 2001, Todd & Billari 2003).

CONCLUSION

This review has two aims. One is to report on recent trends of research in life course sociology and related areas. For that purpose, I focused on empirical studies published in the year 2000 and after. The other aim is to provide a sense of the overall development of the field and to make an assessment of controversial views on the course of its development.

In highlighting recent trends in life course research, I surveyed four areas where major

advancements can be observed: the development and provision of national individual-level longitudinal databases; the study of the impact of cross-national variations in institutional contexts on life courses; the impact of societal breakdowns on life courses; and the proliferation of a strong subfield on the relationship between health and the life course. In four other areas we observe important progress that has not yet fully lived up to its potential: the study of internal dynamics and causal linkages across longer stretches of human lives; the interaction of psychological processes of development and socially embedded life courses; theory development beyond orientating concepts and heuristics; and new methods.

In regard to the second aim of this review, the two contending views are “mission accomplished” and “ready for takeoff.” According to the first view, the field has been highly successful in instilling a life course perspective and more adequate longitudinal methods of analysis in many sociological specialties and has had major impacts on conceptualization, measurement, and causal analysis. It therefore has become reintegrated and routine, and it is not really needed as a special field anymore. According to the second view, not only do major tasks of the field still need to be resolved, but also, given newly existing data sources, new

methods, and potential theory development, they can and should be resolved.

On the basis of the evidence reviewed above, I give credit to both of these views. The first is a fairly accurate description of the current state of the field, whereas the second view adequately captures its unfulfilled promises. In particular, the following goals of life course research still have to be accomplished. First, on the basis of more continuous observations of larger samples across the whole life, one should be able to settle the issues of what extent, in which domains, and with which consequences lives are shaped relatively early in life, or how and to what extent major changes in life direction can and do occur in adulthood and later. Second, the unraveling of the impacts of institutional contexts and social policies across countries and political economies on life courses has hardly begun. Third, the interaction of psychological dispositions and processes and socially constructed life courses still awaits a systematic investigation with adequate data and research designs. Fourth, we know next to nothing about how the internal dynamics of life courses and the interaction of developmental and social components of the life course vary and how they are shaped by the macro contexts of institutions and social policies. In this sense, the takeoff view of life course sociology is probably more appropriate.

DISCLOSURE STATEMENT

The author is not aware of any biases that might be perceived as affecting the objectivity of this review.

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Contents

Frontispiece	
<i>Herbert J. Gans</i>	xiv
Prefatory Chapters	
Working in Six Research Areas: A Multi-Field Sociological Career	
<i>Herbert J. Gans</i>	1
Theory and Methods	
Ethnicity, Race, and Nationalism	
<i>Rogers Brubaker</i>	21
Interdisciplinarity: A Critical Assessment	
<i>Jerry A. Jacobs and Scott Frickel</i>	43
Nonparametric Methods for Modeling Nonlinearity in Regression Analysis	
<i>Robert Andersen</i>	67
Gender Ideology: Components, Predictors, and Consequences	
<i>Shannon N. Davis and Theodore N. Greenstein</i>	87
Genetics and Social Inquiry	
<i>Jeremy Freese and Sara Shostak</i>	107
Social Processes	
Race Mixture: Boundary Crossing in Comparative Perspective	
<i>Edward E. Telles and Christina A. Sue</i>	129
The Sociology of Emotional Labor	
<i>Amy S. Wharton</i>	147
Societal Responses to Terrorist Attacks	
<i>Seymour Spilerman and Guy Stecklov</i>	167
Intergenerational Family Relations in Adulthood: Patterns, Variations, and Implications in the Contemporary United States	
<i>Teresa Toguchi Swartz</i>	191

Institutions and Culture

Sociology of Sex Work <i>Ronald Weitzer</i>	213
The Sociology of War and the Military <i>Meyer Kestnbaum</i>	235
Socioeconomic Attainments of Asian Americans <i>Arthur Sakamoto, Kimberly A. Goyette, and ChangHwan Kim</i>	255
Men, Masculinity, and Manhood Acts <i>Douglas Schrock and Michael Schwalbe</i>	277

Formal Organizations

American Trade Unions and Data Limitations: A New Agenda for Labor Studies <i>Caleb Southworth and Judith Stepan-Norris</i>	297
Outsourcing and the Changing Nature of Work <i>Alison Davis-Blake and Joseph P. Broschak</i>	321
Taming Prometheus: Talk About Safety and Culture <i>Susan S. Silbey</i>	341

Political and Economic Sociology

Paradoxes of China's Economic Boom <i>Martin King Whyte</i>	371
Political Sociology and Social Movements <i>Andrew G. Walder</i>	393

Differentiation and Stratification

New Directions in Life Course Research <i>Karl Ulrich Mayer</i>	413
Is America Fragmenting? <i>Claude S. Fischer and Greggor Mattson</i>	435
Switching Social Contexts: The Effects of Housing Mobility and School Choice Programs on Youth Outcomes <i>Stefanie DeLuca and Elizabeth Dayton</i>	457
Income Inequality and Social Dysfunction <i>Richard G. Wilkinson and Kate E. Pickett</i>	493
Educational Assortative Marriage in Comparative Perspective <i>Hans-Peter Blossfeld</i>	513

Individual and Society

Nonhumans in Social Interaction
Karen A. Cerulo 531

Demography

Social Class Differentials in Health and Mortality: Patterns and
Explanations in Comparative Perspective
Irma T. Elo 553

Policy

The Impacts of Wal-Mart: The Rise and Consequences of the World's
Dominant Retailer
Gary Gereffi and Michelle Christian 573

Indexes

Cumulative Index of Contributing Authors, Volumes 26–35 593
Cumulative Index of Chapter Titles, Volumes 26–35 597

Errata

An online log of corrections to *Annual Review of Sociology* articles may be found at
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