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The Sociology of the Life Course and Life Span Psychology: Integrated Paradigm or Complementing Pathways?

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Karl Ulrich Mayer

Abstract
The psychology of the life span and the sociology of the life course share the same object of scientific inquiry – the lives of women and men from birth to death. Both are part of an interdisciplinary field focused on individual development and life course patterns which also includes social demography and human capital economics. However, a closer look shows that life span psychology and life course sociology now to stand further apart than in the seventies. In this paper we reassess how this divergence can be understood in terms of necessary and legitimate strengths of both approaches, as well as avoidable weaknesses which could be overcome in the future by more re-combination and integration.

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1. Introduction

In the last thirty years, both life span psychology and the sociology of the life course experienced a take-off with regard to theory building and conceptualization, the advancement of longitudinal methodology, as well as established research programs and numerous empirical studies. At first glance, the psychology of the life span and the sociology of the life course share the same object of scientific inquiry – the lives of women and men from birth to death. Both are part of a common concern with individual development and life course patterns not only in sociology and psychology but also in demography and economics. From the beginning there was an unusual readiness for mutual recognition and reinforcement, leading to visible efforts to develop a common theoretical frame following an ideal of interdisciplinary or even transdisciplinary research on human development (e.g., Featherman 1983; Elder/Caspi 1991; Baltes 1997, Settersten 1999; Diewald 2001). This aspiration seems to be still at hand, and has even increased, not least with the rise of the nature/nurture debate. However, a closer look at the factual development over the last decades reveals that life span psychology and life course sociology, with few exceptions, did not come together at all but now seem to stand further apart than in the seventies. Starting from this observation, we try in our paper to reassess how this divergence can be understood in terms of necessary and legitimate strengths of both approaches, as well as avoidable weaknesses which could be overcome in the future by more re-combination and integration. For this purpose we first give a short overview of the sociology of the life course (section 2) and life span psychology as seen through the lens of sociologists (section 3). It will become clear that both approaches are quite distinct in both the main explananda and the prevailing explanatory factors but nevertheless have some commonalities (section 4). Both aspects, differences as well as commonalities, have to be taken into account when discussing how sociological life course research could profit from including psychological development (section 5) and, vice versa, how sociological perspectives on the life course could enrich and broaden the psychological study of life span development (section 6). Since we are both sociologists, one cannot expect that our arguments are perfectly balanced. Therefore we will say more about what we expect as sociologists from life span psychology than about what psychologists should be aware from the side of sociological life course research. Finally we exemplify these interfaces by two already existing pieces of research (section 7). A brief concluding section attempts to outline what a future collaboration between the two disciplinary approaches and integrated research designs could look like. Again, we confine ourselves to the question of convergence or divergence between these two approaches, which means that we debate at large neither the nature/nurture issue nor the broader questions of a unitary (social) science, nor the division of labor between sociology and psychology as two distinct scientific disciplines. In the following we will build on our prior efforts tackling this problem, but we hope to also make true progress in the refinement of our arguments (Diewald 2001; Mayer 2003; Mayer/Diewald 2007).

2. Sociology of the Life Course

Sociology looks at individual life courses not as expressions of an unfolding personality but as regularities “produced” by institutions and structural opportunities. The

institutional order of societies refers to their internal differentiation into subsystems or institutional fields, the specific regulations within these subsystems, and to the degree of system integration. Within the life course, this refers to the degree to which the mutual interdependencies between steering mechanisms within the several subsystems aggregate to an overarching, coherent logic of leading one's life, and how tight these linkages are woven, thus leaving room for individual decision-making at various life stages, and for life-long planning (Mayer/Müller 1986; Mayer 2004).

Life course patterns primarily denote for sociologists the sequence of participation (in technical terms: states and events) in various life domains that span from birth to death, e.g.: school enrollment and the sequences of education and training activities; entry into the labor market, employment careers, and interruptions of labor force participation, and retirement; growing up in families, leaving parental homes, partnership formations, marriages, and parenthood; and regional mobility. The life course is thus seen as the embedding of individual lives into social structures primarily in the form of their partaking in social positions and roles at the levels of social interaction, organizations, and subsystems of the society. The first task of empirical life course research is then to map, describe, and explain the synchronic and diachronic distribution of individual persons into these social positions and roles across the lifetime, and how the outcomes of these participation patterns form patterns of social stratification. In this sense we speak of the social structure of the life course. Typical questions are: How do life course patterns vary across historical time for different birth cohorts? How do they vary between countries and how can these cross-national differences be explained by culture, institutions, economic development, or other factors? How are they affected by historical events such as an economic crisis like the Great Depression (Elder 1974), a war, or changes in the social security system? How do life course patterns differ between women and men and between social classes, and how are these patterns interrelated?

If we go on and ask how these observed regularities are accomplished, we come to various concepts of the "institutionalization" of the life course. These start with unidimensional concepts like (1) age-related informal norms (of leaving home, marrying, getting a child) (Neugarten 1996); (2) age-related legal norms (e.g., first school enrollment, age of retirement), or welfare entitlements (Mayer/Müller 1986; Leisering 2003); (3) more complex age-related informal role models (e.g., students, young professionals, senior executive); (4) the standardized sequencing of and interdependencies between participation patterns in the various life domains (education, training, labor force participation, retirement, partnership and family formation); and (5) finally we can conceive of the life course as an externally shaped, normatively expected, and internalized pattern of leading one's life (Kohli 1985), addressing the individual self and its responsibility, and in the same time regulating his or her decisions (Meyer 1986).

At an even higher aggregated level the question arises whether over historical time the degree and the importance of (internal) self-regulation in contrast to (external) rigid structural and institutional constraints have actually diminished or increased (Foucault 1977, Pizzorno 1991, Beck 1986); whether individuals increasingly follow their idiosyncratic life plans; whether discipline and social control simply became more fine-

graded; or whether the rise of the welfare state has increased or decreased long-term biographical planning (Mayer/Müller 1986). Which persons are the winners and losers of such transformations and what types of personalities do they have? How important are the residual effects from their family of origin? Similar questions can be posed with regard to international comparisons, e.g. between different types of modern welfare states (Mayer 1997, 2005). How do societies differ in the degree to which they allow stability and continuity or allow exposure to risks and discontinuity (DiPrete 2002)? Do social continuity regimes enhance developmental homogeneity and continuity or rather heterogeneity and discontinuity (Mayer/Müller 1986)? Who do social risk societies favor compared to social continuity regimes? Is individual agency and competence more important for success in life and for the proliferation of coherent life designs?

Thus, when asking how order and regularities in life courses primarily come about, one answer is already given. First of all, institutional contexts, as described above, narrow down to a large extent which life avenues are open and which are closed, which decisions are rather costly and which ones are especially rewarding. Second, the positioning within the system of stratification at a given point in time restricts individual agency. If material resources, autonomy, information, and especially power are very asymmetrically distributed within a society, then most people are hardly free in their choices, but rather have to accommodate. Third, the structural availability of open positions is simply the precondition to participate: without vacant positions there is no career mobility. In sum, explanatory factors of life course outcomes in sociology are mostly on the side of restrictions and less on the side of individual agency.

Additional explanations more directly linked to the life course concept, are the notion of life course contingency and the concept of cohort. Life course contingency points to internal dynamics of the life course, that future states and events are always dependent on the prior life history in the sense of experiences, resource allocation, choices, and turning points. Cohort membership starts to be important already with the simple demographic fact of cohort size (one's own as well as the preceding and succeeding cohorts). These population parameters directly influence competition in the labor market and opportunities for dating and mating.

3. Life Span Psychology

Contrary to the sociology of the life course looking at the outer shape of life, the psychology of lifespan development refers primarily to the internal development of individuals, namely psychological functioning and the development of psychic features of the individual: it "deals with the study of individual development (ontogenesis) ... as lifelong adaptive processes of acquisition, maintenance, transformations, and attrition in psychological structures and functionings" (Baltes et al. 1999, p. 472). At the center of interest stand functional capacities and personality, such as cognitive and non-cognitive abilities, memory, emotion, information processing, attachment, or resilience, and basic, universal principles of self-regulation like the model of selective optimization with compensation (Baltes 1997) or primary and secondary control striving (Brandstädter 1997; Heckhausen/Schulz 1995). Even when developmental psychologists look at life

history events like the transition from school to work, their interests lie primarily in universal models of psychological functioning (e.g., Heckhausen 2005; Wrosch/Heckhausen/Lachmann 2006; Heckhausen/Tomasik 2002).

Contrary to many sociological misunderstandings, life span psychology is not interested in individual idiosyncrasies of the inner life but in regularities. Moreover, these regularities are thought to be more common than the sociological ones. Many of these explananda and their changes across the lifetime can be fruitfully thought of as being the fairly universal results of evolutionary selection. Therefore, life span psychology can – at least on a general theoretical level – make a close and productive connection between phylogenesis as the evolution of the species and ontogenesis as individual development (e.g., Kirkwood 2003). Accordingly, often a relatively large share of the interindividual commonality, variability in functional trajectories, and behavioral outcomes is attributed to, respectively, genetic foundations of the species and interindividually differing genetic endowments.

Genetic and other biological constraints of human behavior vary across the lifetime (Baltes 1997; Kirkwood 2003). On one hand, they are likely to be highest in infancy and early childhood, and on the other hand, in late age, whereas in between societal influences play a comparably bigger role. Thus, individual development (ontogenesis) is closely tied to maturation and aging, though "nurture" in the form of culture, institutions, and historical development is admittedly relevant as well. When taking social influences on individual development into account, developmental psychology predominantly deals more with proximal social contexts like households, families, social networks, or neighborhoods, rather than with more remote social institutions (Roberts 2007).

However, it would be unfair to overstress this verdict. Developmental psychologists agree that at least within the framework of stable and rigid institutions the impact of differential personality characteristics on life course patterns and outcomes is limited. If these institutions define behavioral expectations, and impose in an obvious way different rewards and costs on different behaviors, then life courses are rather effectively channelled along institutionalized pathways and institutions (Elder&Caspi 1991; Caspi & Moffit 1993). Caspi and Moffit assume, however, that conditions of an abrupt and sudden social change allow differences in personality characteristics to become accentuated and, moreover, to become more important for life course trajectories, turning points, successes, and failures.

4. The Psychology of the Life Span and the Sociology of the Life Course: Differences and Commonalities

As we have seen, life span psychology and life course sociology diverge with regard to the main explananda at stake. In addition, they also diverge with regard to the dominant causal forces seen at work. Life span psychology views development as based both on "nature" and "nurture", while the sociology of the life course appears as a narrower "nurture" discipline that acknowledges within its horizon neither the common genetic heritage of mankind, nor genetic differences between individuals, nor other biological

models of human behavior (Shanahan/Hofer/Shanahan 2003; Udry 2000). With very few exceptions (Runciman 1998; Udry 1990), life course sociology has definitely remained agnostic towards evolutionary, biological, and genetic factors shaping life courses. The same applies to a large extent to concurrent psychological traits and functional capacities, be they seen as primarily socially formed or not. Whereas the first is absolutely in line with Durkheim's famous formula – according to which sociology explains the social by the social – the latter is simply a mistake; if personality and psychic functioning are at least partly influenced by social forces, and if they are addressed by societal institutions as prerequisite for their functioning, then they should not be categorically excluded from sociological interest. Conversely, the sociology of the life course sees itself as an endeavour dealing with the complexity of structural, institutional, and historical circumstances that life span psychology should take much more in account to test the asserted universalism of psychological functioning.

Nevertheless there is some overlap beyond the simple fact of process orientation. First, both streams of research agree on the role of the individual actor and bounded decision-making (though only residually conceptualized in life course research – if at all). Moreover, when focusing life course research on the highly aggregated level of how societies shape and select personalities as well as shape and constrain institutionalized life course patterns in historical and international comparisons, then both universal and interindividual differences in functional capacities and principles of self-regulation are relevant. Second, for both paradigms, age and the life time are crucial constraints for decision-making (though in psychology more with regard to biological functioning and age norms, and in sociology more as institutionalized transition rules). It is a matter of fact that both individuals and institutions have to achieve their goals and tasks within the framework of limited (life) time. Third, individual life histories and psychic developments are influenced by the embedding in social contexts at different levels ranging from immediate interaction with significant others to macro social systems. Fourth, marked life phases and transitions between them are seen as developmental tasks providing challenges to individual actors and institution making. Based on both commonalities and differences, does the life span approach have something to offer from which the life course approach could profit, and vice versa?

5. Possible Life Span Imports Into the Sociology of the Life Course

Though life course sociology focuses on the impact of culture, institutions, and historical change, observed life course patterns are also the product of persons as natural organisms, individual decision makers, and personalities (Settersten 1999; Diewald 2001). For the sociology of the life course the times of "structure without agency" are gone with the rise of action theoretical modelling, and now maybe the notion of "agency within structure" seems more appropriate (Settersten 1999, p. 223; see also Goldthorpe 1998). However, the usual design of life course studies lets us think of "agency without agents", because "individuality" – defined as the more or less unique accumulation of experiences and combination of personality characteristics in each single person – is below the sociological radar. Therefore, also the decision-making process is dealt as a black box except by formulating hypotheses about costs and rewards linked to a specific

social situation. But how these rewards and costs actually "work" may be dependent on individual motivation and inner resources, not only in an additive way, but that the situational influences (which are part of the sociological observation of life course processes) are largely mediated by these psychic resources as well as by general psychological processes like selection and adaptation in goal and control striving. Not least, psychological mechanisms of goal and control striving, or of selective optimization with compensation, help to understand how biographical coherence in leading one's life may develop beyond a series of unrelated decisions over the life time. Therefore, it is too simple to identify the individual decision-maker with his role set and the respective resources and constraints. It has to be differentiated between the position with the resources and constraints linked to it, and the person who occupies this position and brings his specific capabilities and orientations with him. The differential selection of different persons into the same positions over historical time is one significant type of social change to occur, as Geiger (1932) has noted for his stratum concept. Possible tensions between the demands of a position and the characteristics and experiences of a person who acquires this position are a driving force for social change, instead of simple reproduction of the existing social structure. Additionally, the separation between positions and persons occupying these positions might be an important tool to separate structural from individual effects. The latter task has been stressed to be one of the most pressing concerns of life course research (O'Rand 1996, p. 3).

One might argue that in modern welfare states with a highly elaborate functional differentiation, the link between genetic, physical, and personality constraints and the interindividual variations resulting from them on the one side, and life course outcomes on the other are largely shaped by interventions in the systems of education and training, employment, and social security. From the side of life span psychology, Caspi and Moffit (1993) are ready to admit that stable institutions indeed shape personality development to a considerable degree, and, moreover, restrict the impact of personality on the life course. At the same time however, they argue that in times of sudden social change and less rigid institutions, the impact of personality may rise. Heckhausen (1999, pp. 33-37) even argues in the opposite direction: If social systems become more complex, then psychological functioning becomes more important. From the sociological side, Elias (1969) and especially Meyer (1986) have formulated similar arguments: Modern institutions have to rely on psychic capabilities and dispositions to work in a satisfying manner (but not in the sense that strong normative orientations have the leading role in shaping behavior).

Life course sociology and life span psychology share common interest in principles of leading one's life and the role that individual agency plays there. It is just in the more elaborate concepts of the institutionalization of the life course that addressing personality characteristics and psychic functioning plays a prominent role. In this respect, life course sociology directly refers to concepts of skill formation (Mayer/Solga 2008) and psychic functioning which are not part of their own theoretical and empirical standard apparatus. Yet, they are of crucial interest for sociology, and life span psychology should be able to provide the relevant theoretical knowledge. That is to say that the external forms of life course patterns do not tell us anything about how they came about by agency or

constraints, or about whether they reflect autonomous, successful goal-striving or unwanted adaptation to insurmountable barriers and anomy. For instance, neither the pluralization of living arrangements nor the alleged destandardization of employment (see Brückner/Mayer 2005) tells us whether one or the other interpretation is appropriate at the individual level. For women, deviations from the usual standard life course are often linked with developmental gains (Smith 1997). Although life course sociologists are definitely interested in interpreting these patterns and their change over time as expressions of growing freedom, growing constraints, or both, they hardly look at individual decision-making, perceptions, and evaluations of the social situation. The long-lasting debate about "individualization" is instructive in this respect.

At the macro level of institutional systems, life span psychology may help to conceive of various patterns of social organization as developmental tasks for which certain individual characteristics and behavioral patterns are potentially helpful prerequisites. Several studies have convincingly shown that not only cognitive functioning but also non-cognitive skills (Heckman/Rubinstein 2001), motivation (Dunifon/Duncan 1998), perseverence, control beliefs (Mortimer 1996), the interplay between primary and secondary control striving (Heckhausen 2002), risk aversion, emotional regulation, and other individual capabilities (Heckman/Stixrud/Urzua 2006) play a decisive role in shaping one's life and for success in life. Unfortunately, we do not currently have systematic historical and international comparisons which would allow us to test whether their impact systematically varies with the institutional design of societies, though sociological approaches hypothesize exactly such diverse impacts instead of a universal relevance of these factors. One example is the distinction between closed- and open-position systems: Sørensen (1986) pointed to the argument that convictions about the actual significance of one's own ability and effort for occupational success are important to mobilize these resources by inciting self-initiative. So-called "open-position systems" are responsive to effort and ability. In closed-position systems, ''it is structure that creates success and failures, efficacy and depression'' (p. 196). Mayer (1997, 2005) discusses similar differences at the level of different welfare state regimes.

In sum, life span psychology offers concepts that life course sociology can use to answer the question of which individual capabilities are required to which degree in specific societies, as they are distinguished in historical and international comparisons, so that the social institutions under observation can rely on them to function effectively and efficiently. In other words, the sufficient "provision" of these individual capabilities becomes a prerequisite for the functioning of these institutions, and knowledge about this aspect is helpful for understanding social differentiation as a key concept of sociology. Moreover, interindividual differences with regard to such individual capabilities help to explain social inequalities insofar as they are, first, important for acting successfully as an individual agent, and second, wanted by powerful collective actors (e.g. Jackson 2001) who select people in more or less rewarding memberships and positions besides educational attainment and training activities regularly observed by life course sociologists. The next question is, then, from where do these relevant psychic characteristics and functionings stem? At this point, for sociologists, the question arises whether they should take notice of the undoubtable fact – in an interdisciplinary view –

that all human characteristics and behaviors are to some degree not only produced by social and other environmental influences but by genetic expression, though the latter is much more relevant for personality than for behavior (Rutter 1997; Diewald 2001; Shanahan/Hofer/Shanahan 2003). Nevertheless, the question remains to which degree, when, and at which costs such socially preferred characteristics – think of several cognitive and noncognitive skills - can be "produced" and are trainable (Cunha et al. 2006; Heckman 2007; Gruber et.al. 2008)? At what age are training and other investments optimal, what has to be done early in the life course, and how much can still be done in later years? A similar suggestion refers to the congruence or incongruence of the social organization of the life course regime on the one side, and age-graded developmental processes on the other. How does individual development shape and constrain institutionalized life course patterns? For example, how does actual age at mating, marriage, and parenthood fit to ages at menarche and fertility? Moreover, age and contextual conditions, and "learning windows" for various capabilities may serve as a kind of benchmark for institutional design: Does the age at school enrollment, as well as concepts for preschool education fit to biological opportunities for learning? Does the legal age for retirement fit to age-dependent declines of various capabilities?

Whether or not genetic information is included in research designs, results in the field of human capability formation overwhelmingly show the decisive impact of the very early life phase before school enrollment, beginning with conception. Two lessons follow from the sociology of the life course for its claim to understand individual life courses as contingent, cumulative, interwoven processes in various life domains and at different levels of development. First, this claim seems hard to maintain without investigating individual development before children enter school. Second, for this earlier life phase, sociology should not only incorporate psychic development but bethink its own inventory, which in this case means to look even at this age at "visible" experiences and events produced by early selection and adaptation, e.g.: network interactions, activities, courses.

6. Possible Life Course Imports to the Psychology of Life Span Development

Above all, life span psychology could profit from a thorough look at the sociological life course approach in regard to the multitude of participations in various life domains and their institutional variations in historical and international comparisons. Regarding the explananda of life span psychology, the challenge sociology would pose to life span psychology would focus on how institutional variation and structural opportunities and constraints specify the developmental tasks that people in different societies at different points in historical time have to face, and how these select and modify psychological characteristics across the life time. For example, do contest-oriented labor markets require different skills and pose different challenges than high trust regimes? Do some welfare regimes allow for a smoother switch between primary and secondary control than others?

A second aspect is a wider horizon with regard to explanatory factors. This refers both to the genesis of personality and psychic functionings and their possible impact on life

course outcomes. Take, for instance, the malleability of personality traits (Staudinger, in this volume): though life span psychology acknowledges the malleability in principle, it concentrates on possible impacts from proximal social contexts and culture, but tends to neglect institutions and structures. What was said at the beginning of the last section with regard to the impact of individual development on life courses is also reversely true for a potential benefit of life span psychology from comparative life course studies: It is not astonishing that in modern societies cognitive ability, self-control, or the capability to switch flexibly between primary and secondary control are somehow important for life success, and it is worth noting that, for instance, "self-discipline outdoes IQ in predicting academic performance" (Duckworth/Seligman 2005). However, it remains unclear whether this is a universal finding or differs for various societies, whether it changes over historical time, and whether it applies for different status groups in the same way. Moreover, does this statistical relationship appear because self-discipline is important for planning and deciding as an individual actor, or is it a valuable individual asset observed and demanded by powerful collective actors as recruitment criterion? Paradoxically, life course sociology is closer to these questions "behind" the pure statistical association between life course outcomes and psychological characteristics, though it usually does not conceptualize and measure the latter ones.

Another example is the discussion about the influence of internalized age norms regulating as rules or conventions age-appropriate behavior like the proper age for marriage, motherhood, fatherhood, or the first stable position in the labor market (Heckhausen 1999, p. 35). Mayer (2003, p. 469) challenges this view when he insists that one should always search for external institutional constraints to verify whether these age norms are really more than mere epiphenomenal cognitions deriving from these constraints. Marriage behavior may serve as an example. If we believe in age norms, changes in the median age at marriage should be primarily the consequences of changes in age norms. In contrast, sociologists of the life course would primarily look at changes in the duration of education and training, because the norm is not age but economic independence before founding a family. The issue is not whether age norms exist, but rather whether they exist at least partly independent of present socioeconomic regulations, opportunities and constraints. This is not a fake question: Possible frictions between institutional channelling and cultural norms are well known since the cultural lag hypothesis conclusion that the cultural system is not always able to keep pace with social change. If we look, for instance, at changes in marriage and fertility behavior in East Germany after 1989, only part of the changes could be attributed to changing opportunities and constraints after the Wall came down. Obviously, behavioral patterns inherited from socialist times still play a role (Huinink/Kreyenfeld 2006).

7. Two Empirical Examples

In the following we shift from theoretical considerations to two concrete pieces of research which demonstrate the power of combining both perspectives. The first example refers to a developmental psychologist dealing with historical change affecting the mechanisms of individual development. The second example stems from a sociologist working with the psychological concepts of control beliefs and strategies in order to

understand continuity, change, devaluations, revaluations, and enhancement in individual life courses in times of sudden historical change.

7.1 Risk and Resilience in Historical Change (Schoon 2006)

Schoon draws on two rich data sets for the study of life courses and human development in Britain, the 1958 National Child Development Study and the 1970 British Cohort Study. She investigates the phenomenon of 'resilience' - the ability to adjust successfully under adverse conditions. The longitudinal design of the two data sets allows for linking childhood circumstances and experiences to adulthood outcomes observed decades later, initially differentiating between socially advantaged and disadvantaged young people. The cohort design allows for variance in risk environments at the macrolevel beyond variations in more proximal social contexts. Her general question refers to what factors enable individuals to overcome adverse childhoods and move on to successful lives in adulthood. The study focuses especially on the extent to which individual, family, and contextual resources influence the school adjustment of teenagers and to investigate their consequent adult attainments. Besides academic attainment, it also considers behavioral adjustment, health and psychological well-being, as well as the stability of adjustment patterns in times of social change. Thus, it combines typical life span psychology concepts (developmental risks and challenges, levels and modes of adaptation) with social structural living conditions (socioeconomic adversity and advantage), both life course and individual development outcomes (see above) in a comparative design concerning macro determinants of life courses, and development (historical comparison by cohort design, economic change).

Schoon starts with the definition of four groups located in a 2 by 2 table defined by the cross tabulation of one social structural dimension (high/low socioeconomic risk) and one skill indicator, reading achievement at age 5/7 (above/below median): The “multi-advantaged” and the “vulnerable” are the +/+ and -/- combinations, the “resilient” children show high reading achievement despite adverse socio-economic conditions, and the “underachievers” show low reading achievement despite favorable socio-economic conditions. Looking at achievement at age 16, the multiple-advantaged maintained their high achievement position, the resilient lost that position and came close to or below the median, the underachievers shifted above the median, and the vulnerable only slightly improved or regressed. Looking at the latter group at the age of 33, their chances for life success are the worst.

Thus, the study shows convincingly that socioeconomic adversity is a persistent significant risk factor for educational failure with negative long-term consequences for adult adjustment in work and health-related outcomes. The term “persistent” does not only refer to life time, but also to historical time. For the younger cohort, when labor market opportunities and material conditions had in general improved, there were persistent or even increasing inequalities in academic attainment and adult psychological well-being, and social contextual factors had an increased influence on individual attainment compared to the older cohort. In other words, wealthier societies do not

necessarily improve the conditions for disadvantaged groups – at least in this case the opposite was true.

Risks exist in a variety of life domains and levels of development, such as the child himself or herself, his or her family, and various social contexts like the school environment and the neighborhood. This "risk specificity" corresponds to a set of protective factors making children resilient to adverse circumstances. For instance, supportive relationships with parents are able to make children resilient in the face of poverty, but they do not help against high-risk school systems, whereas parental educational aspirations are significantly associated with educational resilience among economically disadvantaged children. Thus, one important conclusion is that the factors and processes that modify the impact of adversity are context specific and that their influences have to be studied in the context in which they operate. In sum, the single studies combined in Schoon's volume demonstrate convincingly how fruitful it can be if detailed, multidimensional concepts from psychological life span developmental research and sociological life course research are combined to analyze processes at both levels and their possible interactions over individual and historical time.

7.2 Control Beliefs in Times of Sudden Change (Diewald/Huinink/Heckhauen 1996; Diewald 2006, 2007)

To show how psychological characteristics have to be seen as malleable outcomes rather than stable preconditions for life course processes, Diewald, Huinink, and Heckhausen (1996) studied the impact of life course events before and after 1989 on control beliefs, control strategies, and self-esteem measured in 1993 for the four East German birth cohorts of 1929-31, 1939-41, 1951-53, 1959-61. Control beliefs were measured by a detailed instrument capturing five causal factors (effort, ability, luck, social networks, socioeconomic conditions), and differentiating between causality and agency beliefs for each of these factors (altogether 10 dimensions). The authors could show that, controlling for number of covariates including employment mobility before 1989 and the occupational position held in 1989, employment mobility after 1989 indeed altered control beliefs: People becoming unemployed or experiencing downward mobility believed less in the relevance of ability and effort, and the unemployed believed more in the relevance of external factors (luck and social networks). It was especially interesting that downward mobility only affected causality beliefs, but not internal agency beliefs. In other words, such people were not shattered in their beliefs that they were competent and could strain themselves if required – but they lost confidence in effort and ability really making a difference. In contrast, upwardly mobile people significantly believed more in internal factors and less in the relevance of social networks.

With respect to agency beliefs, the differences between the observed groups are generally smaller, but the unemployed, who believed more in the causality of external factors, also believed that they themselves have less luck and access to external conditions than the other groups. In contrast, the upwardly mobile see themselves significantly more as people who have abilities, but also have luck and access to social networks and can influence socioeconomic conditions. These patterns are in line with the theory of

developmental regulation, because they support adaptive secondary control to protect motivational resources in times when primary control striving is not successful (Heckhausen/Schulz 1995). Success enhances internal control and agency beliefs, whereas the less successful cope with their situation by attributing the reasons for this negative development to the importance of external factors that they cannot influence. However, the patterns of control strategies found for the four birth cohorts clearly contradicted the age-graded patterns usually found. It was not the case that the oldest cohort reported significantly lower primary (tenaciousness) and higher secondary (flexibility) control strategies, but the second oldest cohort born 1939-41 reported lower primary plus lower secondary control strategies, and in addition lower causality and lower agency perceptions with regard to effort, as well as a lower level of self-esteem. This unique pattern is partly due to the bad labor market situation for this cohort in comparison to the relatively good career chances they experienced before 1989. In addition, this cohort was too young after 1989 to profit from the rather generous early retirement schemes. At the same time they were too old to still find good opportunities on the labor market. Even when controlled for working lives before and after 1989, the members of this cohort show evidence for a collective, comprehensive loss of future perspectives. Therefore one could conclude that generations in Karl Mannheim's sense can emerge not only in early periods of the individual life course but also in later adulthood.

Based an the same material, but supplemented by a panel wave updating the life courses of the same individuals up to 1996 and adding a second measurement of control beliefs in 1996, Diewald (2006, 2007) investigated the mutual interplay of control beliefs and worklife careers after 1989. Following the already mentioned arguments of Caspi and Moffit (1993) the expectation was that of a significant impact of labor market mobility on control beliefs as well as an unusually strong impact of control beliefs on labor market mobility. Moreover, these interrelations were expected to be considerably stronger during the first phase of the transformation, because this phase came closest to the situation of system change and upheaval. Results showed, first, that control beliefs were indeed strongly influenced by labor market mobility, not only during the first phase of transition but also thereafter. Taken together, the predominant difference in work trajectories affecting control beliefs in the period 1993–1996 compared to 1989–1993 is that in the second period, the divide between job holders, or labor market insiders on the one hand, and the unemployed on the other became more decisive for the formation of perceived control, whereas downward mobility was no longer important. These patterns of influence in the different periods also reflect the different salience of mobility experiences: While in the second period a ''freezing'' of the labor market at a high level of unemployment occurred and, thus, the divide between job holders and unemployed became the most salient separating line for the East German workforce, this divide also became most decisive for the formation of perceived control. The reason that such strong influences for adults were found can presumably be the fact that the career trajectories were often less expected and less normative than under stable circumstances, which coincides with the theory of Caspi and Moffit (1993). However, in this case, the difference between the first, much more turbulent phase and the second phase should have been stronger.

Second, in the other direction, only a rather limited impact of perceived control on working lives was observed. In sum, mobility experiences seemed to influence perceived control more than the other way round. They were not at all important for unemployment, re-entries into the labor market, and downward mobility, whereas they had an impact on upward mobility and moves into self-employment. These two latter shifts were, however, much less frequent than unemployment and downward moves. According to Caspi and Moffit, for a situation of abrupt social change this is a rather astonishing result and against all expectations. Thus, for understanding the labor market transformation in East Germany, the results underpin the verdict that the labor market was hardly responsive to control beliefs that can be regarded as proxy for active and planned behavior. This unusual pattern is obviously due to a closure of structural opportunities despite an opening of institutional barriers. Indeed, structural forces— especially the loss of so many workplaces without the creation of many new ones—seem to be overwhelming, especially during the first phase, whereas later on, the import of the quite inflexible West German labor market institutions may have prevented a tighter link between control beliefs and labor market moves.

For the study of individual development and life courses in general, the analyses offer at least two further lessons in addition to the already mentioned possibility of generation formation through nonnormative experiences in later adulthood. First, the results show that the notion of a ‘‘mutual interplay’’ of individual development and the life course is true, but not necessarily always in the sense of reciprocal relationships. Due to specific features of social contexts, here at the macro level, influences in one direction may be stronger and more consistent than in the other. Second, the assumption that radical and abrupt social change under all conditions enhances the significance of personality may be too simple. In particular, looking only at the instability of institutions neglects the potential impact of social structure affecting life courses and individual development. Thus, a closure of structural opportunities can counteract the rising opportunities caused by degrading institutions.

8. Outlook: Integrated Paradigm or Complementing Pathways?

Despite the obviously different agendas of life span psychology and life course sociology, is there a joint paradigm in sight that might lead to a better understanding of human behavior? At present, our answer is yes and no. As we have seen, both the explananda and preferred explanatory factors are rather different. Both research streams have developed independently over the last decades despite the early recognized interconnections. This may have been fruitful in the sense of functional specialization. Nevertheless, our discussion has shown that there are also shared explananda and a considerable overlapping of interests, namely explaining actual behavior and life success, so that more synthesis and integration could enhance our understanding of human behavior. This is not meant in a purely additive manner, to ad constructs from both disciplines enhancing explained overall variance. Rather, the aim is to fill chasms with regard to theoretically relevant pieces of explanation within the respective research

streams that are nevertheless neglected in the actual research programmes, and partly even in the theories. This limited aim does not necessarily need a shared, integrated theoretical paradigm but instead more joint research programmes. However, to agree on some commonly accepted axiomatic theorems would alleviate and enlarge potential collaborations. We carefully propose here only few of them (see Diewald 2001 and Shanahan/Hofer/Shanahan 2003) as starting points:

(1) Human characteristics and human behavior are all products of multiple levels of processes possibly interacting with one another based on a given genetic make-up. What we observe at the level of individuals is shaped by both social and biological forces that interact to produce the phenotypes of individual characteristics and behavior. There is no a priori reason to believe that any of these levels is able to claim exclusive explanatory power.
(2) Characteristics and behavior at a given point in time reflect the cumulative history of "reciprocal exchanges between person (including biological make-up) and context" (Shanahan/Hofer/Shanahan 2003, p. 599)).
(3) However, theoretical and methodological arguments may for specific research programs and questions provide good reasons to neglect the genotype or social contexts. They may be necessary for full explanation but negligible for prediction. In general, behavior is less defined by biology than personality characteristics.
(4) If only phenotypical characteristics and behaviors are measured, the separation of biological expression and social forces is impossible. We need independent measures of contexts and genetic similarity to do this.

Where, then, are the promising routes and increased integrations of sociological life course research and psychological life span research? First, many sociologists refuse to take psychological mechanisms and personality factors into account, as sociological micro and macro theories often refer to them. The functioning of institutions often implicitly addresses psychological functioning and personality characteristics like self-regulation, motivation and skills in varying patterns and degrees. Examples were given above. Insofar as institutions and social systems have to rely on these psychological characteristics, their sheer availability is part of institutional functioning and potentially creates social problems and social inequalities. The degree to which they are biologically constrained or socially produced and at what cost shapes possibilities of effective, efficient institutional design. A second question is how persons of varying psychological makeup are observed and selected by others, by organizations and societal institutions, and how they select themselves into various participations. Sociology usually observes this sorting of persons into positions along social structural diversity. However, there is no reason to exclude psychological characteristics, and in the end, the genetic makeup of people as a natural starting point of these allocation processes. A third aspect to include the person was to better understand decision processes. Relying on social, structural, and institutional factors alone, modelling choices remain at the level of "agency without agents". In other words, individuals are no more than "structural puppets". Fourth, in conjunction with the last point, historical change by intra and inter cohort change could be better explained by tensions between cultural goal setting and institutional ways of reaching these goals (societal social production functions; Lindenberg 1986) on one hand,

and individual goals and action strategies on the other.

For lifespan psychology it would be, first, especially rewarding to exploit sociology in order to gain a more refined and a more differentiated repertoire of social structurally constrained, institutionally regulated developmental tasks and their consequences beyond generalized notions of age norms and general developmental goals. This refers primarily to possible explananda of life span psychology. Second, perhaps even more importantly, is that based on the general notion of the plasticity of individual development, social structural conditions and institutional designs should be increasingly considered as explaining factors. Third, following a life history of states and events in various domains over time would allow the assessment of the consequences of specific life course experiences for psychological dispositions, including developmental goals, control beliefs and strategies, orientations, or traits. However, all these suggestions will require more cross-nationally and/or historically comparative, longitudinal research based on rather big samples in order to systematically vary social structural conditions and institutional and cultural contexts.

Thus, closing with more practical considerations for potential integrated research designs, both life course and life span approaches could agree on the following verdict as a starting point: “Longitudinal surveys, which collect information about the same persons over many years, have given the social sciences their Hubble telescope” (Butz/Boyle Torrey 2006, p. 1899). Admittedly, retrospective life history designs cannot be complemented with data on individual development due to methodological reasons. However, the combination with qualitative biographical narratives may help to come closer to include early experiences before school enrollment and the development of orientations over the life course. In prospective panel designs, individual development and life courses can be investigated as parallel processes, interwoven at various levels of personality and in various life domains (Diewald 2001). In addition, the following research design characteristics would enhance the predictive power of modeling considerably: (1) to start as early as possible in lifetime, at best with conception, in order to fully exploit the endogeneity of life course and individual development with earlier experiences influencing later outcomes; (2) to establish genetically sensitive sample designs, and/or to make use of biomarkers, in order to disentangle biological and social influences; (3) to supplement individual-level information collected via surveys by information about social contexts like neighborhoods or work organizations measured independently from the survey respondents, e.g. provided by geographic information tools, separate data bases, or additional (multi-level) designs; and (4) international replications for distinguishing between universal mechanisms and national (regional, local) variations.

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