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THE LIFE-COURSE AND HUMAN DEVELOPMENT: AN ECOLOGICAL PERSPECTIVE *

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A life-course perspective is applied to the study of human development in ecological context. Three meanings of age (developmental, social, and historical) represent key elements of this perspective and depict lives in terms of aging, career, and historical setting. Age locates people in history (by birth year) and in the social structure. The neglect of such temporal distinctions in problem formulation has consequences in studies of status differences and psychological states, of careers and work satisfaction, of children's socioeconomic environment and the family economy, and of life change and stress. Alternative questions based on the life-course facilitate explanatory assessments of the relation between environmental and personal change.

The ecology of human development relates patterns of development to the enduring and changing environments in which people live (Bronfenbrenner 1977). This enterprise has much in common with prominent analytic concerns of the flourishing early stage of the social sciences in the United States, the 1920s and 1930s. W.I. Thomas, among others, made a compelling case for an historical and comparative study of life patterns in their sociocultural environments (Volkhart 1951). Since then a number of developments in theory and method have separated the study of lives from social context, as implied by the critical title of a recent essay, 'Bringing society back in' (Barton 1968). In studies uninformed by the life-course and its historical context, the study of development has generated knowledge bearing an uncertain relationship to the actual lives of individuals (Baltes *et al.* 1977).

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By 'bringing context back in', the ecology of human development has given new vitality to three analytic themes long dormant in research. First, it reasserts the significance of place by attending to the family, neighborhood, and larger community as settings of development. Second, it charts the course of families and lives by focusing attention on age differentiation in the timing and coordination of events. Third, it acknowledges the importance of historical time by a concern with events, crises, and social change.

The sociological analysis of age, life-span developmental psychology, life history methodology, and social demography have converged in the past decade in a life-course perspective on human development from birth to old age. This perspective offers a fruitful way to address each of the above themes. We briefly outline this perspective, and provide an example of its application in a study of unwed teenage mothers, and contrast it to other perspectives on life change, careers, and social position, in which research practice falls short of potential. Throughout the essay our concern is with the fundamental role of problem formulation in research, theory development, and method.

The life-course perspective: essential elements and an exemplar

The life-course perspective locates individuals in age cohorts and thus in historical context, depicts their age-differentiated life patterns in relation to this context, and illumines the continual interplay between the social course of lives and development. The relation of age and time lies at the core of this perspective and is expressed in three temporal meanings: (1) chronological age marks developmental time as a simple index of stage in the inevitable process of growing older; (2) social age identifies age patterns in social roles and timetables; and (3) historical time enters through a concern with birth year as it relates membership in a specific cohort to the experience of history and social change. Each meaning of age informs our study of pathways through the age-differentiated life course and their developmental implications. The life-course refers to these pathways, to social patterns in the timing, duration, spacing and order of events and roles.

Social age

Differentiation in the life-course arises from social meanings of age, as well as from biological facts of birth, sexual maturity, and death. Throughout history and across cultures these social meanings have varied, as evidenced by the shifting meaning of 'childhood'. Norms, expectations, privileges, and constraints express societal distinctions regarding age. Age strata are socially recognized divisions of the life span which constitute a basis for identity and specify appropriate behavior. In complex societies age structures and timetables are plural; the individual life-course is comprised of interlocking careers, such as those of work, marriage, and parenthood (Elder 1975). The scheduling of events and obligations thus becomes a problem of how resources and pressures are managed. The economic squeeze of early childbearing illustrates the adaptive problems that stem from asynchrony between resources and demands.

This perspective assumes that the consequences of events in the life-course vary according to their context and timing. There are cultural definitions of appropriate times for schooling, leaving home, marriage, and childbearing. As a rule, individuals are aware of how the timing of their lives fits with cultural timetables and of the consequences associated with off-timed events (Elder 1975). Extreme departure from cultural timetables often entails decisions among undesirable options, and formal and informal sanctions. The plight of the unwed teenage mother illustrates this bind, for she has few desirable options open to her.

Adult career progress is judged in terms of life phase. For example, one type of status inconsistency (occupational status well below education) is normatively inconsistent and a source of distress only in middle age, a time of peak earnings and status (House and Harkins 1975). Moreover, a complete understanding of status inconsistency during the middle years requires knowledge of the process by which it occurred. Both midlife demotion and prolonged worklife instability may produce the same inconsistent pattern, but their implications for health and well-being are bound to differ.

Historical time

Birth year locates people in history just as social age locates roles in the social structure. Individuals are exposed to a slice of historical

experience in the process of moving through age-graded roles, and they share much of this life experience with other members of their cohort. Cohort membership acquires substantive meaning when we relate cohort experiences and characteristics (such as composition and size – themselves products of historical experience) to historical events and trends. Size differences between the birth cohorts of 1930–34 and 1946–50 reflect the historical experience of the Depression and postwar years.

During times of rapid change successive cohorts are likely to differ in life patterns. They encounter the same historical event at different points in their life-course and thus differ in their experience of it. A recent comparative study of two cohorts of men (birthdates 1920–21 and 1928–29) found substantial cohort differences in the effect of Depression hardship on psychological development from childhood to middle age (Elder and Rockwell 1978). Deprivation (relative income loss between 1929 and 1933) imposed a greater burden on members of the younger cohort, for family hardship occurred at an earlier age and spanned a longer period of their lives. On the transition to adult status, Reuben Hill (1970: 322) observes that each cohort in periods of rapid change "encounters at marriage a unique set of historical constraints and incentives which influence the timing of its crucial life decisions, making for marked generational dissimilarities in the life cycle career patterns".

In summary, a life-course perspective directs inquiry toward understanding the process by which lives are lived. As we trace the impact of larger contexts and distant events to the world of the child and his family, we find that knowledge of the social course of families and individual lives is fundamental. Through an understanding of the life-course and its consequences for development, we are able to explain the process by which early life events are related to later events. Age relates history and social structure in the human biography, and it is through age differentiation that we find the implications of time and place for development. With these general points in mind, we turn to a specific example of a life course study.

Unwed teenage motherhood as a moral career

Furstenberg (1976) has advanced the study of unwed teenage motherhood by applying the concept of career to a topic formerly viewed

in terms of simplistic, atemporal concepts. Prior research generally identified specific kinds of people most likely to have illegitimate births; it viewed unwed motherhood as an event isolated from the life-course. In contrast, Furstenberg showed that a birth out-of-wedlock represents one point in a moral career (see also Rains 1971) and that specific sequences of events lead to an illegitimate birth. At each stage young women have an option: premarital sex or not, contraception or not, abortion or not, marriage or not. Only a few of the possible paths lead to an illegitimate birth, and Furstenberg explored why some girls followed these paths and others did not. After the birth girls encounter further decisions: abandonment of the child, putting the child up for adoption, marriage or single parenthood, more illegitimate births, educational and vocational options, entry into the welfare system or economic independence. The impact of illegitimate births depends on how the career of unwed motherhood meshes with the other careers of marriage, occupation, and education. Each point of decision lies at a different stage in a career, and each requires a different explanation. A full understanding of the sources and results of unwed teenage motherhood involves linking these separate explanations into a broader perspective.

Furstenberg's study of the association between out-of-wedlock births and economic dependency shows the extent of his departure from previous analyses. As background to his study of a longitudinal sample of mostly black adolescents living in low-income areas of Baltimore, Furstenberg reported two studies that obtained conflicting results on the economic effects of premarital births. Cutright (1973) studied women who had borne children, dividing the premaritally pregnant from others. His comparison of these groups indicated that no ill effects of premarital pregnancy occurred if the mother married. In contrast, Coombs and others (1970) observed a long-term economic disadvantage of premarital pregnancy among two samples of married women. Though differing samples restrict comparability, these contradictory findings may reflect an incomplete research question: do women who are economically dependent tend to have a history of premarital pregnancy? Answers to this question do not reveal why the effect is observed. Furstenberg poses a different question: "How many women with *similar* childbearing careers manage to remain economically independent [and] how many with entirely *different* histories ultimately end up on welfare?" (emphasis author's 1976:

148). By investigating how "the process of recovery is achieved" and "the critical conditions that determine whether or not the economic consequences of premarital pregnancy will be temporary or persistent" (1976: 149), Furstenberg is able to explain the effects of unwed teenage motherhood.

Recovery from economic loss turned upon marriage, education, household composition, and additional children – not upon personal values, for few young mothers desired public welfare. Marriage was a critical decision in economic recovery; women who did not marry had little chance of recovery. Though employment increased prospects for economic recovery, young mothers entered the labor market with a handicap. They were deficient in education and experience, younger than their competitors and often dropouts from school. They suffered labor market discrimination against women, and because most were black, they also faced racial discrimination. The jobs they obtained often did not even cover the expenses of child care and maintenance of a family. If other adults were present in the household, the young mother was often able to use this economic and child-care help to finish school and bring home net income. Finally, if the young mother had additional births, child-care problems often rendered it impossible for her to get a job that provided net income. Persistent economic dependency thus turned not upon the event of unwed pregnancy itself but instead upon which of several pathways through the life-course were followed by the young mother.

Furstenberg's analysis also helps us to understand the effects of illegitimate birth upon children. The young mother's occupational and marital status after childbearing made the greatest difference in her child's cognitive and social development. Her status at the time of the birth made relatively little difference. Indeed, children in families with a father present displayed cognitive skills almost equal to those of children not born out-of-wedlock. Thus Furstenberg's analysis illumines the process by which some unwed teenage mothers were able to repair the damage of an illegitimate birth in their own lives and in the early lives of their children.

Practice and potential in the study of lives

In this section we examine selected developmental studies in which the research problem neglects temporal distinctions emphasized in

the life-course perspective. Problem formulation – underlying both theory and method – fails to meet the demands of developmental research for an understanding of process. Research on the family commonly gives no attention to temporal variations in family life that are related to timing of events, and studies of careers fail to examine pathways that connect events widely separated in time. Research on the psychological effects of life change all too frequently ignores when the change occurs, its nature and relation to other life events. These deficiencies stem from research questions that disregard two principles of life-course analysis: first, the effects of an event depend on its timing and relation to other events; and second, the social and developmental meaning of an event is derived from its context and from life history.

On matters of timing Furstenberg focused on the effects of a disturbance in the normative schedule during a woman's adolescence. Such effects would not be seen if the illegitimate birth had occurred some ten or fifteen years later, after the completion of school and a period of work and accumulation of assets. Likewise, late marriage differs from early and on-time marriage in divergent patterns of disadvantage and advantage: late marriers often have well-established worklives and sometimes advanced education, but they also have a smaller number of potential mates (Elder and Rockwell 1976). Economic gain or loss bears different meaning when household size is expanding than when it is contracting, and when economic demands of children are high or low. The analytic significance of these temporal matters is underscored by unsatisfactory explanations when they are slighted.

The second principle distinguishes between the cross-sectional and the longitudinal study of lives. Consider studies of the relation of socialization to family status. Cross-sectional analysis is not sensitive to the socioeconomic history of the family, nor can it attend to consequences of status change for childbearing. A sample of working-class families may include the downwardly mobile, the upwardly mobile from the laboring class, and the stable working class. Although each type of family is 'working class' in cross-section, they have substantially different aspirations and provide different resources for children (Elder and Rockwell 1978). A life-course perspective on family status moves beyond correlations or regression coefficients between statuses at different points in time to examine the process or paths that link events at different times. Thus some working-class men who advance

into the middle class by mid-life do so through an orderly pattern of worklife progression, while others switch lines of work. The status change may occur early for some and late for others. One would not expect a single explanation of mobility to suffice for each of these patterns.

In what follows, we explore the cost of ignoring these two principles for knowledge about lives and briefly suggest modes of inquiry that are informed by a life-course perspective. We begin with a study of status differences in psychological status and indicate the inadequacy of research that fails to view status within specific phases of the life-course. This is followed by a study of 'careers' that is not guided by a concept of the life-course and how it is socially patterned. Finally, we identify both of these weaknesses (treating status apart from time and apart from the socially patterned life course) as major flaws in analyses of children's socioeconomic environment and of life change in relation to psychological functioning.

Status variations in psychological states

Values, attitudes, and psychological functioning reflect the constraints and opportunities of life situations; education, occupation, and income structure this context (see Kohn 1977). But we still know very little about the mechanisms that link social position to life outcomes. Why are differences in occupation relevant for health and child care? A life-course perspective focuses inquiry on these mechanisms, and orients research to potential historical and lifetime variations in the psychological effects of status.

The impact of status varies across the life span as status and status change assume different meanings within the normative context of age strata. Age-graded standards give specific meanings to status. Promotion to senior partner in a law firm has different meaning for lawyers at the mid-point and at the end of their worklives. Prospects for advancement diminish in later life. The effects of loss of status are different among older and younger workers; opportunities, obligations, resources all differ by age. Moreover, occupation is not expected to reflect education, or income to reflect occupation, in the early years of worklife. During the middle years job advancement and earnings more nearly approach their lifetime peak.

These observations favor analysis which views the psychological

correlates of status by life stage or phase. The appropriate analysis is one in which status patterns are linked to psychological states within age strata – such as young adult, the early and later phases of middle age, and old age. But we see no evidence of this recommended method in one of the more ambitious studies conducted on status differences as they affect people's lives.

Curtis and Jackson (1977) sampled men in six American communities (male heads of households, 21 years of age or older) for a study of the sources of educational, occupational, and income inequality, and their psychological consequences (perceptions of the class structure, conservatism, anomia, and punitiveness). We shall only deal with those portions of the study that bear upon age-related lifetime variations in psychological states.

Age clearly has relevance for this problem, but the authors use age as a statistical control, not as an index of context [1]. In their regression analyses Curtis and Jackson assume that the apprentice lawyer has the same attitudes whether younger or older; that an increase in earnings of $1000 has the same impact for men starting out and concluding their careers. The simple adjustment for the 'effects' of age assumes additivity and linearity where theory underscores the need to examine interaction. They are thus prevented from observing that higher-status jobs reach an economic peak later in life than lower-status jobs; that imbalances between supply and demand contribute to the stresses of childbearing in family life; and that income acquires psychological meaning in relation to demand, which varies over the family life-course. Although they do acknowledge potential differences in the relation between status and attitudes by life stage (1977: 156–157), this expectation is not based on an understanding of the life-course.

In our judgment the study's basic flaw stems from a research problem that is uninformed by the sociology of age and the life-course. The life course perspective calls for a study of the relation between psychological status and status *within* life stages. This type of study

[1] Curtis and Jackson occasionally introduce the 'family life cycle' as a dummy variable in their regression analyses. However, each stage is defined by role change and configurations, not by roles in relation to age patterns. Thus families in a particular stage, such as childbearing, will vary widely in age range and status. Moreover the approach does not specify processes by which families move from point to point in the life-course. Family cycle analysis conveys the erroneous impression that all families move through the stages and all at the same rate (see Elder 1977).

selects a sample stratified by men just entering the labor force, at the peak of their careers, and nearing retirement. Analysis could then examine the multiple sources of status differences (education, occupation, and income) in relation to their various effects within each stratum. Age patterns in norms and career progress support the expectation of systematic variation in status effects within age strata.

Social status vs. career

The study of careers involves questions that cannot be answered by information on a person's status at a point in time, or by the relation between statuses at different points in the life-course. Though a person's first job may predict his last job with fair success, the association does not tell us about his occupational career between these points – stability of a line of work, status change, idleness, and shifts in employer. The concept of career refers to a sequence of activities that are functionally related across settings. In this sense a career is roughly the same as a person's life history in work, marriage, parenthood, or consumption.

Career analysis is oriented toward the process of situational change and its implications. This task is illustrated by a study which found relatively high levels of worklife achievement in men with incongruently low levels of formal education (Elder and Rockwell 1978). These men, born in Berkeley, California, just before the Great Depression, had grown up in deprived families. Whether middle or working class, they obtained substantially less education than did nondeprived men. However, at midlife, there was no difference in average occupational status between deprived and nondeprived men. Contrasts in worklives resolved this incongruity: deprived men generally began their worklives and established a stable line of work at earlier ages. This pattern of accelerated career formation countered the handicap of Depression hardship and limited education.

In the Berkeley analysis the research problem stemmed from the convergence of life patterns among men who entered the labor force with significantly different historical and pre-adult experiences. Another type of career question starts with people in a common situation and seeks to explain why some are more successful than others. This is the question which Coleman and associates (1972) explored in a sample of white and black men born in the 1930s. Working with

men in the same occupational stratum at first job, they sought the "mechanisms which lead to differential levels of success" some ten years later. Additional education emerged from regression analyses as the most significant source of success, especially among white men. Occupational events were second in importance for whites; marital and family events, for blacks. When combined, these factors accounted for a substantial portion of the variation in men's status after ten years, but they do not explain the process by which specific worklife or family events made a difference in level of success. Moreover, the study does not place such events in the context of temporal phases of careers. For example, number of jobs and employers assume different meanings when part of orderly or disorderly careers (Wilensky 1961).

Though event timing and sequencing do not enter Coleman's analysis, a life-course perspective would orient the study to such concerns. When did marriage occur relative to work entry, exit from education, and military service? Timing of the first birth bears directly upon worklife pressures of family needs, but this was not part of the research. The study also does not distinguish between career costs of unemployment at the beginning and end of the ten-year period. Overall, the Coleman study exemplifies research that lacks theory on careers and the mechanisms by which men attain differential success.

We find a similar deficiency in Robert Sear's (1977) longitudinal study of sources of occupational satisfaction among men near the end of their careers (average age 61). The men were members of Terman's original sample of gifted children in California. Unlike Coleman, Sears did not focus his study on life-course questions. His analytic task entailed prediction of satisfaction, not an exploration of life patterns which have differing implications for the later years. However, a man's satisfaction with what he has done in his occupational life is a function of who he is, where he started from, how he arrived at his final position, and what he did along the way. It is a product of the life-course. The same degree of satisfaction may have different meaning for men who followed different paths.

Sears used a step-wise regression procedure for the selection of predictive factors. Not surprisingly, prior attitudes emerged as the most substantial predictors of occupational satisfaction at age 62. Work satisfaction in 1960, "extent of having lived up to intellectual

capacity", and vitality in 1972 assumed statistical precedence over worklife and the life-course. This suggests that attitudes regarding work are more powerful determinants of work satisfaction than the career itself. Indeed, Sears concluded from his analysis that work does not matter in work satisfaction (an invalid interpretation even on statistical grounds, Duncan 1970): "it looks as if there were some continuing affective quality" rather than "the objective facts of life" that determines work satisfaction.

It is most unlikely that analysis undertaken from a life-course perspective would support this conclusion (Elder 1974; Kohn 1976). Though Sears' work may be a perfectly valid description of attitudinal correlates of work satisfaction in later life, it does not help us understand the psychological consequences of the various routes men followed to old age. The study fails to do justice to the diverse realities in men's lives.

A life-course study of sources of work satisfaction would trace early differences, such as class origin, aspirations, and interests, to occupational choices, education, and career formation. Orderly worklives would be differentiated from disorderly; early career establishment, from later; and upward mobility, from downward mobility and stability. Work satisfaction would be linked to these differences. Certain career lines offer satisfaction through steady progression; others are gratifying because they represent unplanned achievement; and still others yield satisfaction for men with low aspirations. Although some of these variables enter Sears' analysis, they are not ordered in a life-course account of men's work satisfaction at age 62.

The family economy in children's lives

We criticized the Curtis and Jackson study for its failure to examine the psychological meaning of status within the life stages of men. The Coleman study ostensibly focused on the mechanisms of differential achievement, but it did not in fact examine this process from a career perspective. Both of these limitations also appear in traditional concepts of the socioeconomic environment of children.

Child development is a temporal process, yet research in this area has generally relied upon atemporal measures of the child's socioeconomic environment such as parental occupational status and income.

In her review of the literature on social class and development, Cynthia Deutsch (1973) emphasized the diversity within general class strata, but she did not acknowledge the limitations of atemporal measures of family position for developmental research on children. The problem of diversity within classes is at least matched by that of variation in socioeconomic career of families. As a panel study documents (Lane and Morgan 1975), poverty is not a stable condition for a substantial number of lower-income American families. Over a six-year period families moved above and below the poverty line. Static measures of economic well-being represent a mixture of temporal patterns that obscures their social and psychological significance. Development, social reality, and the life-course perspective all make a persuasive case for temporal concepts of children's socioeconomic environments, but this is only a first step.

It is also necessary to recognize that both family income and composition change over time and that their effects on children cannot be fully understood apart from their relationship. Few studies have actually explored this relationship or its consequences for family interaction and child development. The familiar concept of the family life cycle captures change in family composition resulting from the addition and departure of children (Elder 1978). Change may also occur when parents die, divorce, or remarry, or relatives move in or out of the household. Studies have examined marital relations and parenting in relation to family stage, and a critical review of the literature (Clausen and Clausen 1973: 186) cautions that "the meaning and consequences of having a given number of children in the family will vary with each phase of the family cycle".

The meaning of family stage and size also varies by the timing of events. Variations of ten years or more in mother's age at first birth produce large differences between the age and career position of parents in the childbearing stage. Even within the same occupational stratum, late marriage and childbearing offer a number of socioeconomic advantages when compared to the early timing of these events. The later the events occur, the more both husband and wife are able to accumulate material resources and augment their income. As Freedman and Coombs (1966: 648) point out, couples "who have their children very quickly after marriage find themselves under great economic stress, particularly if they married at an early age . . .". These effects are not adequately specified in terms of social status or family

stage alone; problems of child care, parental stress, and family management arise from the temporal relation between socioeconomic career and family composition.

By focusing on this relationship we obtain a simple model of the family economy that takes into account demands and contributions of all members of the household. Economic consequences of change in household composition stem from the relation between supply and demand, from earning levels and number of earners, and from the number of young and old dependents. Change in the family economy occurs as the household head ages and changes roles; as children arrive, age, and depart; and as productive family members are lost through disability, death, divorce, and new family formation. One of the most significant results of studies based on this concept is that a family's economic welfare has more to do with household composition than with economic loss or gain among family earners (Lane and Morgan 1975: 50).

How do families adapt when resources fall below, match, or exceed demands? Gove and associates (1973) identify three responses to decline: (1) efforts to control and reduce consumption – a reduction in living standards, such as a move to lower-cost housing; (2) reallocation of time and energy resources – more labor intensive operations, employment of the wife, double shift work; and (3) attempts to balance income and outgo through credit, use of savings, and loans from kin. Young and Wilmott (1973: ch. 7) identified three adaptations to economic squeeze in large families: highly paid overtime work, shift work, and moonlighting. Reentry of mothers into the labor force after childbearing may reflect accumulated pressures of debt, aspirations, and pending educational costs. A child's family environment thus changes as families adapt to new relations between household composition and resources. These changes create pressure points in the family's experience that increase the likelihood of family problems.

Sensitivity to the relation of household composition and resources leads us to study temporal variations in a family's support network and its ties to community agencies and institutions. For many years sociologists have explored the complex meaning of a family's residential environment in the socio-psychological effects of neighborhoods on children. Families with majority- and minority-status in a neighborhood – such as middle-class families in a working-class neighborhood (Rosenberg 1975) – have been compared on environmental influences. But

appropriate attention has not been given to family attributes such as career stage and its relation to income. Middle class families in working class areas may include aspiring, younger couples with grade school children and families that have suffered financial misfortune. Such differences in family history and stage are relevant to assessments of neighborhood composition and effects. Residential choice is one adaptation to the relation between household composition and economics and acquires meaning from its context within the life course.

Life change and its psychological effects

Family responses to change are among the life changes which constitute important foci in developmental research. Family routines, roles, and relationships change as mother enters the labor force, as the father takes on overtime work (and has few hours to spend with children), and as grandparents begin to care for younger children. Change in the family economy entails change in the lives of family members. These changes are structured in part by norms regarding the life course, such as appropriate times for children to leave home and for mothers to enter the labor force. But changes may also be off-timed and conflict with other events and obligations, producing disadvantage and stress.

According to a life-course perspective, the stressfulness of a life change depends on three primary considerations: (1) the nature of the change (drastic in alteration of customary habits or not, loss or gain, expected or not); (2) the life history of experience, expectations, and adaptive skills that one brings to the change (Elder 1974: ch. 2); and (3) the temporal context of the change – its position within the life course and relation to other events. On all of these counts, a parent's death, mother's employment, and father's loss of job have different implications for child and family at each family stage. Geographic mobility entails minimal disruption for children in grade school; far greater disruption, if they are locked into school curricula, testing schedules, and peer networks of the high school years. A shift in line of work may be a gain in the early years of the worklife and a loss in later years.

The nature and stressful impact of a life change cannot be understood apart from knowledge of its temporal context, and the resources and beliefs people bring to it. However, this view of life change and its implications for health bears no relation to that proposed by Holmes and Rahe (1967). Their physiological view argues that life change itself

entails risk of illness. This risk is not affected by the temporal context of the change and its relation to other changes, by any characteristics of the change other than a global perceived stressfulness, or by differences in the life histories of individuals and families.

Using the method of magnitude estimation of psychophysics, they built a Social Readjustment Rating Scale (SRRS) for psychiatric and research use. The scale includes judgments of 43 changes that range from family relations and economics to social activities. A high level of inter-rater agreement has been achieved across samples of old and young, males and females, and different cultures (*cf.* Askenasy *et al.* 1977). Death of spouse is consistently ranked highest in magnitude of life change, followed closely by divorce and separation. At the low end of the scale raters place 'change in eating habits', 'Christmas', and 'minor violations of the law'. However, this ranking is not independent of major social change: Janney *et al.* (1977) report that economic changes took precedence over other personal and family events in an earthquake-stricken Peruvian city.

The SRRS has appeared in the work of medical, psychological, and sociological researchers. It (or a variant) is one of the most widely-used instruments for the study of life change in stress (Dohrenwend and Dohrenwend 1974; Gunderson and Rahe 1974; Wildman and Johnson 1977). The scale has earned a fair record in predicting health change, although mainly in questionable retrospective studies. But studies using the SRRS are necessarily divorced from theoretical and empirical knowledge about the life course. As a result we are unlikely to learn precisely what psychosocial processes link life change and health.

The SRRS favors what might be termed a 'trait approach' to situations, rather than an approach which examines behavior as a function of transactions between person and situation (Eckehammer 1974). Each event receives a single 'life change' score. A change in living conditions entails the same degree of social readjustment for a single man and a father of adolescents, for young adults and the elderly, even though research and observation suggest readjustment demands greatly differ. Consider also the meaning of death of spouse, an event which typically occurs late in life according to demographic timetables. Death of a young husband leaves a family with few resources and heavy obligations, and can markedly alter the development experience of children. Although a spouse's death may qualify as a life change of maximum proportions in all life stages, its effects depend on timing within the life-course.

The SRRS makes little effort to specify the direction of life change, though others have assessed the different adaptive outcomes of loss (widowhood, empty nest) and gain (marriage, parenthood) (Lowenthal and Chiriboga 1973). But the implications of direction depend on timing, and Barbara Dohrenwend's (1973) failure to consider timing might well account for her conclusion that gains and losses differ little in their effects on anxiety.

The SRRS obscures the causal structure of life changes. The same global score indexes any number of causal sequences, each with differing health implications. Some changes, such as taking a mortgage or loan over $10,000, may be adaptations to pressure that, in fact, alleviate stress. Other events are clearly evidence of health change, such as change in sleeping habits. Hetherington and associates (1976) observed effects of a single life change, divorce, that range from changes in psychological functioning and self-perception to economic stress, effects which varied by characteristics of the marriage before divorce and by sex of the child. Family stability may be enhanced by 'change in work hours or conditions', 'change in social activities', and 'marital reconciliation' – all of which are presently scored as stressful (and perhaps destabilizing) events. When all such changes are lumped together into a single score, the researcher cannot specify the precise social and behavioral meaning of the score. The SRRS may predict stress and health decline, but we do not know precisely what it means or what process links life change to stress.

Sociologists have taken preliminary steps toward introducing theory into a research form of the SRRS (Mechanic 1975). Hough and associates (1976) developed a revised version which incorporates some distinctions of direction and timing. This form distinguishes certain gains from losses: 'health of family member become better' and 'health . . . becomes worse' received ratings some 42 ranks apart. They also introduced limited ordering distinctions: birth of first child ranked 18; birth of second or later child, 34; and 'gain of new family member other than child', 22. Wife's entry into and departure from the labor force produced no reliable difference, but additional precision would be needed to bring out the meaning of these events. The wife's entry into the labor force after a long period of homemaking is probably more stressful than reentry after the early phase of child rearing. These clarifying steps are essential in making the scale more interpretable, but such steps ultimately document the theoretical limitations of a global measure of life change.

Despite glaring deficiencies as a representation of life change, the SRRS' utility as a predictive device generally affirms that life changes do follow a predictable order. Consensus in judging the magnitude of life change undoubtedly reflects this social order. The evidence of the SRRS suggests that people do have their own catalog of life events which are ranked by required readjustments and that this ranking is based on both normative and factual (biological, demographic) criteria. However, the SRRS' research use has reversed steps in the process of inquiry: it has placed technique before problem formulation, explanatory theory, and an understanding of the life-course. Informed questions on life change and health do not lead in the direction of a global life change measure which ignores the timing and context of events.

Overview: a matter of question and perspective

We have sought to illumine some differences in problem formulation and perspective by application of a life-course perspective to selected problem areas. Our criticism has focused on the kinds of questions posed and on the method which was brought to bear. An ecologist of human development might have addressed any of these questions, and we suggest that a life-course perspective would be fruitful. Questions on context and process come readily from this perspective, a point well illustrated by Furstenberg's research objective: to elucidate the effects of precipitate parenthood in adolescence by "exploring when, how, and why childbearing before the age of 18 jeopardizes the life prospects of the young mother and her child . . ." (1976: 1).

Thomas (Volkhart 1951: 114) once called question formulation the "hunting activity" of the creative social scientist. It is a core task of inquiry, and one where developmental research often falters. The goal is to trace out the linkages which explain processes, not simply to assess the validity of a hypothesis of theory. Depending on the problem, research may utilize case histories, clinical judgments, surveys, field experiments, and varied statistical techniques. Explanatory linkages, once teased out, must be tested for consistency, unambiguity, and invariance, using the full spectrum of statistical tools (see McCall 1977: 336). Theory and method are interwoven with substance and the flow of ideas through the course of explanatory research. In all of this, there is above all "the use of some imagination or mind from point to point",

as Thomas once put it (Volkhart 1951: 84); the analyst "raises the question, at appropriate points, 'what if', and prepares a setup to test this query". These succinct observations define an appropriate strategy for life-course analysis.

The life course perspective offers a conceptual means of introducing temporal considerations and explanatory analysis to the study of lives and human development. Through its articulation of age and time, this perspective views persons in age-differentiated careers and phases over the life span. Career stages and their relation specify the meaning and consequences of life events. By locating people in historical context and in the social order, the sociology of age orients research to the process by which historical change is expressed in life experience. In this essay, we have explored some implications of the neglect of such temporal distinctions in a review of research on the psychic effect of status variation, on careers and occupational satisfaction, on children's socioeconomic environment and the health impact of life change. Though each example addresses topics that are relevant to developmental study, their problem statements do not incorporate temporal principles on life patterns. In each case a life-course perspective suggests alternative modes of research of the process of human development.

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