B. Connections between Early and Subsequent Life Phases

CHAPTER 18

Connections between Childhood and Adulthood

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The study of the relationship between childhood and adulthood is an inherently interdisciplinary project. Psychologists, psychiatrists, sociologists, and epidemiologists have all made central contributions to our understanding of the processes through which early material, experiential, and psychological endowments shape subsequent development. In areas as diverse as the childhood predictors of adult health, the long-term sequelae of childhood adversity, and life course continuities in antisocial behavior researchers have presented compelling evidence for childhood–adulthood links and have begun to eludicate the mechanisms responsible for them. These investigations draw on life course concepts such as transitions and trajectories and affirm their utility for understanding the long-term implications of early life experiences.

Childhood is defined differently by different researchers. We adopt a broad definition here, as the pre-adult years of life encompassing infancy through adolescence. That having been said, our review emphasizes research on the life course sequelae of experiences in the pre-adolescent years in order to avoid overlap with chapters covering the transition to adulthood (this volume) and to highlight theories concerned with continuity and change over the full life course.

Empirical evidence for the relationship between childhood and adulthood reveals far more complexity than a simple claim of life course continuities allows. The relationships between childhood experiences and adult outcomes are generally modest and vary significantly

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Handbook of the Life Course, edited by Jeylan T. Mortimer and Michael J. Shanahan. Kluwer Academic/Plenum Publishers, New York, 2003.

with the broader social and historical context (Elder, 1974; Werner, 1985), specific characteristics of the experience (e.g., Harris, Brown, & Bifulco, 1986), subsequent events (Rutter, 1989), and the child's physical and psychological capacities (Masten & Garmezy, 1985). By implication, research concerned with the relationship between childhood and adulthood must attend to discontinuities as well as continuities over the life course.

Our review begins with a discussion of factors that contribute to these continuities and discontinuities, covering factors both internal and external to the individual. We then introduce three broad classes of models for the analysis of continuity and change—linear, contingent, and transactional. We describe how these models have been applied in research on childhood—adulthood links, focusing on studies of the childhood antecedents of adult disease and the effects of childhood adversity on adult life. Our review highlights the strengths and limitations of these models and concludes with a consideration of theoretical challenges for future research.

FORCES OF CONTINUITY AND CHANGE

The continuity and change we observe from childhood to adulthood depend on a complex interplay of competing personal and environmental forces. Internal dispositions, environmental stability, and the cumulative nature of biological and cognitive development all work toward creating continuity in feelings, behaviors, and attainments over the life course. At the same time, physiological development, subsequent life events and transitions, and the individual assertion of choice create variation in developmental pathways.

Internal Dispositions

Several psychological traditions, in particular various forms of psychoanalytic theory, emphasize the formative nature of the first years of life. Although their specific accounts diverge, these traditions share the assumption that early relationships with caregivers influence later development through the internalization of psychological functions (e.g., emotion regulation) or the development of enduring mental representations of those relationships (see Fonagy, 1999, for a review). For example, attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969, 1973, 1980) proposes that children develop internal working models of their relationships with primary caregivers (i.e., attachment relations) that serve as the foundation for later interpersonal relationships (Bretherton & Munholland, 1999). Early experiences of sensitive or insensitive care constitute an experiential basis for children's broader representations concerning their caregivers' accessibility and responsiveness and their own deservingness of care. These representations guide the relational choices that children make throughout the life course, as well as their relationship expectations, self-appraisals, and behaviors and, thereby, create continuity in experience (Hazan & Shaver, 1994; Thompson, 1999). Subsequent work in attachment theory has elaborated this general claim, giving more emphasis to alternative processes through which early attachment relations influence later development (e.g., through their effects on the developing brain and on affective and behavioral regulation; Weinfeld, Sroufe, Egeland, & Carlson, 1999) and to discontinuities in attachment relations over the life course.

Temperament also creates continuity over the life course (Caspi, 2000; Caspi & Silva, 1995). Temperament has been defined in a number of different ways, including as constitutional (i.e., biologically based) differences in reactivity and self-regulation

(Rothbart & Derryberry, 1981), basic stable personality characteristics that are evident early in life (Buss & Plomin, 1975), and behavioral style (Thomas & Chess, 1977). However defined, temperament is thought to influence subsequent development primarily through its relationship with the nature and quality of interpersonal interactions (e.g., "difficult" children elicit more critical responses from their parents) which, in turn, define the child's risk of experiencing interpersonal stressors and the subsequent likelihood of negative sequelae. Temperament and personality also moderate the effects of other stressful circumstances on long-term development. For example, among a cohort of children from disadvantaged backgrounds (poverty, low maternal education, family disruption), those children who enjoyed success as adults were more likely than those who did not to have been described by their caregivers as active, cuddly, and good-natured at age 1—characteristics that were also correlated with later childhood autonomy, good peer relations, and an internal locus of control (Werner, 1989).

Finally, sociological theories of socialization attribute life course continuities to internalized societal norms, knowledge, behavioral tendencies, attitudes, and values (Bush & Simmons, 1981). Through interaction with their families, schools, and peers, children develop cognitive, emotional, and social skills and knowledge that they then apply in future social interactions. Socialization has been often invoked as an explanation for intergenerational continuities in behavior and attainment (Sewell & Hauser, 1980). For example, Kohn (1969) showed that working-class parents place high value on conformity to external authority among their children, whereas middle-class parents emphasize children's self-direction. These class differences in parental values perpetuate inequality across generations by preparing children to occupy similar class positions in adulthood. Other research on socialization evaluates the later-life outcomes of specific socialization experiences, such as parenting styles (e.g., Peterson & Rollins, 1987). For example, youth whose parents were nurturing and involved behave in warmer, more supportive ways towards romantic partners in early adulthood than do other youth and therefore enjoy better marital quality (Conger, Cui, Bryant, & Elder, 2000).*

Of course, socialization does not end in childhood and occurs within diverse contexts that may present conflicting opportunities and challenges (Bush & Simmons, 1981). Nevertheless, values, skills, and behaviors learned early in life are importantly linked to later life experiences through their associations with interpersonal interactions and the selection of environments.

The Stability of Environments

Continuity in social and interpersonal environments over the life course is sustained by two distinct types of processes: macro-level processes of stratification that impede major changes in location within social hierarchies and micro-level processes of environmental selection that support and reinforce pre-existing psychological and behavioral tendencies. These types of processes are usually studied independently, but they may interact in important ways. For example, the association between adolescent ambition and later achievements may reflect motivated selection of challenging environments by ambitious youth, but may also demonstrate the influence of structural constraints on motivation (Kerckhoff, 1995). Consistent with this possibility, Gamoran (1996) finds that the same socially structured experiences that allocate students into hierarchically differentiated positions within school tracking systems also

*More recent research on socialization emphasizes children's active creation of social environments and the importance of socialization in peer contexts (Corsaro & Eder, 1995).

foster orientations that are consistent with the students' eventual destinations. To the extent that the outcomes of development are jointly determined by persons and their environments, macro- and micro-level processes that encourage environmental stability create continuity over the life course.

With respect to stratification processes, there is strong consistency both in the status levels of parents and their children and in the status locations persons occupy within different social hierarchies (e.g., educational and occupational; Kerckhoff, 1995). The intergenerational consistency in status has been explained variously with reference to: (1) social psychological processes through which parental socioeconomic status influences parental encouragement and support of children's educational attainments (e.g., Haller & Portes, 1973; Sewell & Hauser, 1980), (2) structural features of the labor market, that concentrate power over occupational allocation and rewards in the hands of relatively few powerful owners and managers (e.g., Horan, 1978), (3) school-based ability groupings that privilege children from advantaged backgrounds (e.g., Bowles & Gintis, 1976; Entwistle & Hayduk, 1988), and (4) class-based access to social and cultural capital (Bourdieu, 1973; Coleman, 1990). There are also race and gender differences in the relationship between educational achievement and occupational attainment (e.g., Marini, 1989; Porter, 1974) that demonstrate a lack of openness in the occupational hierarchy for members of lower status groups. Whereas social mobility occurs both across and within generations, intergenerational continuity in status and status consistency imply that persons are likely to encounter similar educational, occupational, and class-related environments over the life course.

The stability of environments over the life course also reflects the motivated selection and creation of environments by individuals. Individuals show a preference for social situations that are compatible with their personalities and for affiliation with similar others (Allport, 1937; Alwin, Cohen, & Newcomb, 1991; Caspi & Herbener, 1990; Newcomb, 1961). Selective entry into compatible social environments, in turn, reinforces individual dispositions. While recognizing the importance of active environmental selection, Caspi, Bem, and Elder (1989) posit the existence of a complementary transactional process in which behaviors, expectations, and self-motives elicit reciprocal, sustaining responses in social interaction. In essence, individual predispositions create social environments that support them. (See Moffitt [1993] for an extended discussion of similar processes as they apply to life course continuities in antisocial behavior.)

Social psychologists emphasize the self as a motivational system in the selection of social and interpersonal environments. Theorists propose variously that individuals are motivated to maintain and enhance positive self-conceptions (Gecas, 1991; Gecas, this volume), to maintain consistency in the self (self-consistency or self-verification; McNulty & Swann, 1991; Swann, 1983), and to seek social relations that are consistent with their self-conceptions (Backman, 1988). Although some of these processes may operate at the cognitive and affective levels, each may also influence behavioral choices. For example, persons with negative self-views tend to select interaction partners who provide them with negative feedback or to behave in ways that elicit such feedback (see De La Ronde & Swann, 1993, for a review). Persons with negative self-views also set low goals and self-handicap to prevent damage to their self-concepts (Coopersmith, 1967; Tice, 1991). The interpersonal and achievement-related failures associated with these processes may further reinforce their low self-concepts, setting into motion self-reinforcing, negative trajectories of self-worth. Notably, such trajectories are not necessarily inevitable. Higgins (1996) and Kiecolt and Mabry (2000) articulate the ways in which perceived discrepancies between actual and ideal selves lead to deliberate efforts to change the self, some of which may prove self-enhancing.

Thus, self-motives may create both continuities and discontinuities in the self through the life course.

The Cumulative Nature of Development

Although we will not dwell on this point, the cumulative nature of biological and cognitive developmental achievements also promotes life course continuities. Early biological insults, such as prenatal alcohol exposure and poor maternal nutrition, limit future neurological and physiological potential (Stewart, 1983). The existence of critical stages of development remains controversial within research on cognitive capacities (Bates, 1999; Cynader & Frost, 1999; Nelson, 2000). Nevertheless, at least some researchers contend that there are specific stages during which children must develop cognitive and emotional capacities or they will lose the ability to achieve full developmental potential in the future (Gewirtz, 1969; Williams, 1972).

Transitions, Turning Points, and Human Agency

Stability in the life course is punctuated by physiological alterations, life transitions, and turning points that alter developmental and experiential trajectories (Clausen, 1993; Elder, 1997). Physiological alterations, such as the hormonal changes associated with puberty, create new physical and social selves that require adjustment and adaptation (Rutter, 1986b). Transitions involve age-graded movement into and out of major social roles and/or institutions, such as entering elementary school, gaining or losing a parent, or a parent's job loss. They can occur on- or off-time and be either expected or unexpected, although transitions that are off-time and unexpected have the most profound effects (Thoits, 1983). In contrast, turning points are defined as periods or points in time "in which a person has undergone a major transformation in views about the self, commitments to important relationships, or involvement in significant life roles" (Wethington, Cooper, & Holmes, 1997, p. 216). Turning points are often associated with major life events such as family formation or unemployment (see the chapters by Sampson and Laub and Uggen and Massoglia in this volume) but they may also result from self-realizations or reinterpretations of past events (Wethington et al., 1997).

Bodily alterations, transitions, and turning points have the potential to open up new opportunities, alter life goals, and create stress. Their influence on the life course depends on how individuals interpret and respond to them, as well as on the constraints that limit those responses (Elder, 1997; Rutter, 1989). Although constraints are often conceptualized as structurally based, people vary in their perceptions of the limitations imposed by similar structural contingencies and in their perceptions of their abilities to surmount them (Bandura, 1986). As a result, different persons faced with the same situation will assert different types and levels of effort to change it, creating diverse life pathways. Shanahan's (2000) notion of bounded strategic action captures this complex interplay between structure and agency in purposive action. Further elaboration of the concept would bring us closer to the type of theory of social action that House (1995) envisions and that a comprehensive account of life course continuities and discontinuities requires. Notably, any such account must allow for the possibility that people assert agency not only in response to transitions and turning points, but also in anticipation of them.

Empirical discontinuity between childhood and adulthood also occurs because of the multidetermined and differentiated nature of adult outcomes. There exist multiple pathways to specific outcomes such as adult depression or high socioeconomic attainment, each of

which may be independent of the others. In complement, specific childhood experiences, such as parental divorce, have the potential to be linked to an array of adult outcomes. Most theories of life course continuities are insufficiently specific to predict which adult outcomes should be most strongly predicted by which childhood experiences and vice versa, implying a theoretical and empirical slippage that diminishes observed continuities.

THREE MODELS OF CONTINUITY AND CHANGE

These diverse forces of continuity and change have been incorporated into more general theoretical models that guide contemporary scholarship on childhood–adulthood links. The models can be classified into three broad categories: those that emphasize linear processes of development, those that focus on contingencies, and those that assign central importance to transactions between individuals and their environments. Although the distinctions among these categories blur in practice, they nevertheless provide a useful orienting framework.

Linear models posit the existence of stable physical, cognitive, or psychological competencies that the child carries through life and that place constraints on what the child can accomplish or on the choices the child makes in later life. These competencies are often seen as having their origins in childhood deprivations or traumas, such as prenatal exposure to toxins or childhood parental loss and thereby serve both as explanations for the effects of specific childhood circumstances on adult outcomes as well as precursors in their own right. The linear nature of the models does not necessarily imply simplistic conceptualization. For example, attachment theory's notion of internal working models, discussed above, constitutes a complex set of representational systems involving social expectations of caregivers, events, autobiographical narratives, and understandings of human beliefs and motivations. Moreover, studies that apply linear models often present detailed accounts of the causal mechanisms responsible for the links. What linear models share is the assumption that early experiences and competencies have continued influence over the life course regardless of subsequent events. Linear models are common in areas as diverse as the effects of early childhood poverty on later socioeconomic attainment (e.g., Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Hill & Sandfort, 1995), the psychological sequelae of childhood parental divorce (e.g., McLeod, 1991), and the fetal origins of coronary heart disease (Barker, 1995).

In contrast, contingent models emphasize the potential for both continuity and discontinuity in development. Explicated most clearly by developmental psychopathologists (Rutter, 1986a), these models conceptualize early life events as the beginnings of chains of experience that extend out into the future. Each link in the chain represents alternative possible future paths, with the selection of paths being influenced by strengths and vulnerabilities associated with prior experiences, structural constraints, individual motivation, and luck. In essence, as children move through their lives, alternative pathways open and close in response to their previous experiences and actions. Contingent models of childhood–adulthood continuities acknowledge that children often take active steps to change their environments and that these active steps modify their risk of long-term deleterious outcomes. Turning points in development become central foci of analysis.

Finally, transactional models offer a more fully realized account of person–environment interaction than either linear or contingent models. Drawing on elements of both, they assert that continuities in development occur because of the effects of personal and behavioral predispositions on the selection and creation of proximal social environments and the evocation

of interactional responses that validate or support those predispositions (Caspi et al., 1989; Hinde, 1992; Sameroff, 1983). In essence, they contend that stability in personal dispositions is not mediated simply by internal psychological processes, but that it depends as well on the nature of person–environment interactions. Transactional models take as their starting point the general claim that individuals and their environments are mutually determining (e.g., Buss, 1987; Plomin, 1986), but elaborate that claim by considering the specific motives and mechanisms by which that determination occurs. Given their emphasis on predispositions as motivating forces in those interactions, it is not surprising that transactional models have been applied most successfully to understanding continuities in personality, psychopathology, and behavior problems between childhood and adulthood. We believe that they have untapped potential in other areas of research, which we elaborate below. Because transactional models focus on micro-interactions, they give relatively little attention to structural constraints on development.

We illustrate key features of these broad classes of models through a review of research in two substantive areas: the childhood antecedents of adult disease and the effects of childhood adversity on adult life. In each area, we summarize important empirical findings, highlight the most influential theoretical orientations, and discuss critical disjunctions between the two.

CHILDHOOD ANTECEDENTS OF ADULT DISEASE

Research on the childhood antecedents of adult disease follows a linear model. Empirical studies have focused primarily on early (i.e., prenatal and infant) physical development and childhood socioeconomic status as they relate to adult disease and mortality. The indicators for physical development and socioeconomic status are often used interchangeably (e.g., low birthweight used as a proxy for low socioeconomic status), leading to substantial debate about the interpretation of any observed relationships. Complicating matters further, the processes presumed to underly those relationships are not measured explicitly making it difficult to choose among alternative interpretations.

Low birthweight, placenta size, and weight gain in the first year of life increase the risk of a variety of chronic diseases in adulthood, including coronary heart disease, diabetes, obstructive lung disease, and schizophrenia (Barker, 1992; Wahlbeck, Forsen, Osmond, Barker, & Eriksson, 2001; see Joseph & Kramer, 1996, for a review). Childhood height and leg length, among other anthropometric measurements, are also associated with adult mortality from diverse causes (Gunnell et al., 1998; Waaler, 1984). Certain specific childhood diseases also increase the risk of cause-specific adult mortality. For example, children who experience respiratory tract infections at young ages have higher rates of mortality from chronic obstructive lung disease in adulthood (Elo & Preston, 1992). Together, these studies suggest that adult health problems can be traced to early-life nutritional and developmental disadvantages.

These studies have spawned considerable debate about the primacy of physiological processes in the associations between childhood indicators and adult health. On one side of the debate, Barker (1990) contends that adult diseases are "programmed" by biological processes during the prenatal period and infancy. Initially, Barker focused on fetal undernutrition during middle to late gestation as it relates to stunted fetal growth and, in turn, to risk factors for and the prevalence of coronary heart disease in adulthood. Barker et al. then extended the programming hypothesis to other fetal and infant deprivations and to other adult

health outcomes (e.g., slow weight gain during the first year of life in association with adult risk of suicide) (Barker & Osmond, 1995). Throughout these studies, birthweight and weight gain are used as proxies for nutritional deprivations which are not measured directly. Whereas Barker et al. acknowledge that the environment may contribute to health later in life, they contend that its contribution is constrained by levels of susceptibility determined during fetal development (Barker, 1992, 1995).

On the other side of the debate, critics of the programming hypothesis assert that infant developmental indicators serve as markers for generally poor living conditions during childhood that have effects on later health through both contemporaneous and subsequent risks to health (Bartley, Power, Blane, Davey Smith, & Shipley, 1994; Gunnell et al., 1998; Power & Hertzman, 1997). For example, low birthweight and infant weight gain may represent a variety of nutritional and social disadvantages that influence adult health through their associations with specific childhood illnesses (e.g., respiratory tract infections) and/or subsequent life disadvantages (e.g., low socioeconomic status in adulthood).* Most of the studies that support the programming hypothesis are based on data collected over 50 years ago for other purposes, so they do not include measures of health and health behaviors over the life course that would allow them to address this alternative.†

Pursuant to the interest in early-life disadvantage, several studies have evaluated the later-life health implications of early socioeconomic differentials. The results are mixed but, overall, suggest that low socioeconomic status during childhood is related to risk factors for and the prevalence of adult disease (e.g., Gliksman et al., 1995; Kaplan & Salonen, 1990; Lynch, Kaplan, & Salonen, 1997; see Haste, 1990; Lynch et al., 1994 for exceptions), to adult mortality (Davey Smith, Hart, Blane, Gillis, & Hawthorne, 1997; Davey Smith, Hart, Blane, & Hole, 1998), and to self-rated health and physical symptoms in early adulthood (Power and Matthews 1997; Power, Matthews, & Manor, 1998). The effects of childhood socioeconomic status on adulthood appear to be specific rather than general (e.g., Davey Smith et al., 1998), implying that any comprehensive explanation for them must be able to account for the absence of relationships for some outcomes as well as their presence for others.

Identifying the mechanisms that account for these associations is complicated by the complex, interlocking nature of trajectories of health and socioeconomic status. Childhood deprivations may affect later health through their associations with contemporaneous risks (e.g., parental smoking, childhood infections) that themselves have long-term effects on health (Wadsworth, 1997). For example, *Helicobacter pylori* infection is more common among lower class children (Mendall et al., 1992) and is an important cause of adult stomach cancer (Forman et al., 1991). Alternatively, low socioeconomic status in childhood may be associated with subsequent health risks due to the enduring effects of poor health behaviors adopted early in life (e.g., poor diet; Power, Manor, & Fox, 1991), the subsequent risks of encountering unhealthy environments (e.g., persons from lower class backgrounds are more likely than others to be exposed to air pollution throughout their lives); Holland, Berney,

*Barker et al. controlled for childhood social class in their analyses and found that the relationships between infant health and adult disease were robust to that control. Critics doubt the validity of their measures of social class, however, because they do not correlate with birthweight as one might expect (Paneth & Susser, 1995).

†Much of the evidence for the childhood origins of adult disease derives from studies in England and Scotland in which child participants in surveys carried out in the first half of the 1900s were tracked toward the end of the century and their current health status and/or mortality assessed. Pointed critiques of these studies have appeared in the literature, which note the possible biasing effects of high rates of missing data, the inadequacy of measures of the presumed physiological mechanisms (e.g., early nutrition and diet), and the lack of direct measures of childhood socioeconomic status (Joseph & Kramer, 1996; Paneth & Susser, 1995).

Blane, Davey Smith, Gunnell, & Montgomery, 2000), and the stability of socioeconomic status over the life course (Elo & Preston, 1992; Lynch et al., 1994). Finally, early physical and mental health problems predict low socioeconomic attainment in later life net of controls for origin status (Conley & Bennett, 2000; Miech, Caspi, Moffitt, Wright, & Silva, 1999; Montgomery, Bartley, Cook, & Wadsworth, 1996).

The plausibility of these diverse pathways suggests that the full relevance of childhood socioeconomic circumstances for adult health can only be determined through a complete accounting of life course trajectories. Studies that estimate the effects of socioeconomic status during any specific life stage on health during the same (or a subsequent) life stage may misidentify the risks to health because they fail to consider prior and intervening experiences that explain and/or modify the observed associations. The duration of socioeconomic deprivation also appears to matter in the prediction of child cognitive and emotional health (Duncan, Brooks-Gunn, & Klebanov, 1994; McLeod & Shanahan, 1993, 1996) and, based on the limited evidence that exists, for adult health as well (Davey Smith et al., 1997).

Although there is consensus about the value of life course approaches to the study of socioeconomic differentials in health, the conceptual and empirical challenges of studying complete health and socioeconomic trajectories are substantial. Many prior studies have not even been able to control adult socioeconomic status (SES) when estimating the effects of childhood SES on adult health (Holland et al., 2000), let alone consider trajectories. Prospective, cohort studies hold promise for this type of inquiry. As the empirical inadequacies of existing cohort data sets reveal, however, it is not always possible to anticipate which variables might be of interest in future years and cohort studies confound the effects of aging with changes in historical time.

There are several key issues that beg attention in future research. First, we need more information about changes in socioeconomic conditions throughout the early life course and the effects of these changes as the child grows older (e.g., in prenatal, infancy, childhood, and adolescent stages). Barker's programming hypothesis implies that early childhood socioeconomic conditions have stronger effects on adult health than socioeconomic conditions in later childhood, but systematic evidence for or against this expectation is lacking. Power et al. (1998) found that the effects of social class at birth on adult health held through age 33, even in the presence of controls for current socioeconomic circumstances and were stronger than the effects of adolescent school achievement. Unfortunately, most studies do not have measures of socioeconomic status that span the life course. There may also be some diseases for which there is no socioeconomic differential during childhood or adolescence, but for which childhood and adolescent socioeconomic status predict adult health status through their associations with accumulated risk behaviors (Harley & Mortimer, 2000). Wadsworth (1997) suggests, for example, that, although there is little socioeconomic variation in respiratory function during adolescence, socioeconomic differentials in adolescent and parental smoking create the potential for lagged effects of adolescent socioeconomic status on adult respiratory health.

Second, the effects of childhood conditions on adult health are likely to depend on subsequent life experiences. To date, however, researchers in this area have not examined these contingencies systematically. Barker (1995) acknowledges that "we do not yet know whether socioeconomic influences that affect nutrition and infection in childhood (and thereby influence postnatal growth) can modify the effects of suboptimal growth in utero (p. 311)". Others suggest that poor nutrition in early life leads to adult diabetes only among persons whose life circumstances and nutrition improve in later life because those improvements tax the body's capacity to produce insulin (Hales et al., 1991). Even researchers who have been attentive to socioeconomic trajectories (e.g., Bartley et al., 1994) have not examined interactions between earlier and later socioeconomic circumstances when predicting adult health. Subsequent life

stressors, such as parental divorce or residential changes, might also exacerbate childhood health disadvantages.

Finally, researchers who study the childhood antecedents of adult disease have shown little interest in the reciprocal relations between individuals and their environments. Because health problems are conceived as biological in origin, even when influenced by the social environment, researchers within this area conceptualize people as passive with respect to their environments: they may be affected by their environments, but their responses to those environments and the meanings they give to environmental circumstances are not objects of study. The lack of attention to person–environment interactions means that we do not yet know how people's efforts to cope with their physical and social environments over the life course reinforce and/or mitigate socioeconomic differentials in health.

THE EFFECTS OF CHILDHOOD ADVERSITY ON ADULT LIFE

Researchers from diverse disciplines have contributed to our understanding of how early experiences in a child's life influence adult attainments and well-being. Psychologists and psychiatrists tend to focus on the psychopathological outcomes of childhood separations and traumas, whereas demographers, economists, and sociologists have been more concerned with the economic or marital sequelae of parental divorce, living in female-headed households, or early economic disruptions. Nevertheless, there is substantial overlap in the concerns of these diverse groups of researchers, yielding a rich and varied body of empirical research from which to draw conclusions.

Adverse childhood events constrain future life options, but also create opportunities for development (Elder, 1999). The vast majority of empirical studies in this area emphasize the former over the latter. Children who lose their parents, who are separated from their parents for long periods of time (due, for example, to extended hospitalizations or out-of-home placements), and whose parents divorce experience a variety of physical and emotional problems in adulthood and fare less well than others in the marital and occupational markets—clear evidence for the deleterious effects of childhood adversity. This evidence does not obviate the need to consider the potential for positive outcomes resulting from these same experiences, however. Shanahan and Mortimer (1996) elaborate the social psychological mechanisms through which stressors can increase adaptive capacity and promote positive development including, for example, motives to maintain and enhance self-efficacy. Similarly, the steeling hypothesis suggests that encountering and successfully coping with stressors enhances psychological well-being (Masten & Garmezy, 1985; Rutter, 1985). Despite the clear relevance of these arguments for research on childhood adversities, the strength and nature of the relationships of childhood adversities to adult maladaptation, the circumstances under which they hold, and the specific mechanisms that account for them remain underanalyzed. To illustrate the strengths and limitations of existing research on adversity, we compare and contrast research on childhood parental divorce with research on other childhood losses. Studies in these areas draw on both linear and contingent models of development, affording an opportunity to discuss both types of models within the same general substantive area.

Research on the adult outcomes of childhood parental loss through divorce, death, or out-of-home placement (such as in a group home) has focused on three main sets of outcomes: psychological well-being, marital outcomes, and socioeconomic attainment. We review studies of parental divorce first, followed by studies of other parental losses, because

the two sets of studies derive from different research traditions and employ different conceptual models.

Parental Divorce

Childhood parental divorce has a modest but significant association with psychological well-being in adulthood. The association holds across diverse indicators of well-being, including overall happiness (Amato, Loomis, & Booth, 1995; Glenn & Kramer, 1985), life satisfaction (Glenn & Kramer, 1985), behavior problems (Zill, Morrison, & Coiro, 1993), antisocial behavior (Pakiz, Reinherz, & Giaconia, 1997), depressive symptoms (McLeod, 1991), substance use (Kuh & Maclean, 1990; Wheaton, Roszell, & Hall, 1997), and major psychiatric-III-R disorders (Wheaton et al., 1997). Whereas the adults in several of these studies are only in their early twenties (e.g., Amato et al., 1995; Furstenberg & Teitler, 1994), other study samples included adults through at least their mid-fifties, implying that psychological effects of divorce persist and possibly even strengthen through the adult life course (Cherlin, Chase-Lansdale, & McRae, 1998).

The simple conclusion that parental divorce generates long-term psychological disadvantages belies the complexity of the relationship between childhood parental divorce and adult psychological well-being (Hetherington & Kelly, 2002). Studies disagree about whether divorces during preschool, elementary school, or later ages are more damaging (Chase-Lansdale, Cherlin, & Kiernan, 1995; Zill et al., 1993) and about whether boys or girls are most affected in the long-run (Glenn & Kramer, 1985; Rodgers, 1990). The effects of family conflict appear to be comparable to the effects of divorce (Amato & Booth, 1991), suggesting that parental divorce serves as a marker for a general period of upheaval and stress in children's lives. Interestingly, recent studies indicate that childhood parental divorce has weaker (or, in some cases, positive) effects on adult psychological well-being if the parents had experienced marked marital conflict or violence prior to the divorce (Kessler, Gillis-Light, Magee, Kendler, & Eaves, 1997; Amato et al., 1995).

The latter findings affirm the importance of seeing parental divorce as part of a matrix of related stressors that jointly determine the environments in which children live (Barber & Eccles, 1992; Furstenberg & Teitler, 1994). As stress researchers have noted, with the possible exception of parental death, childhood adversities cluster within families (Wheaton et al., 1997). Whereas the clustering of adverse experiences complicates analyses of the outcomes of specific events (Rutter, 1990), attempts to disaggregate the effects of clustered adversities may offer relatively little insight into processes of risk and resilience. The different clusters of events that children experience have different meanings that are lost when those events are studied in isolation.

The effects of childhood parental divorce on marital and economic outcomes are stronger and more consistent than its effects on psychological well-being. Data from two prospective, longitudinal, cohort studies in Britain indicate that boys and girls from divorced homes marry at earlier ages, have more premarital pregnancies, and are more likely to cohabit premaritally and get divorced themselves than other children (e.g., Kiernan & Cherlin, 1999; Kuh & Maclean, 1990; Wadsworth, 1979), even in the presence of controls for origin socioeconomic status. U.S. studies observe similar patterns (e.g., Glenn & Kramer, 1987; Pope & Mueller, 1976; Thornton, 1991). Children from divorced homes also fare less well economically than children from stable, two-parent homes. They attain lower levels of education and are employed in lower status occupations as adults (e.g., Greenberg & Wolf, 1982; Kuh, Head, Hardy, & Wadsworth, 1997; McLanahan, 1985).

Psychologists and sociologists favor different explanations for the effects of childhood parental divorce on adult outcomes. Not surprisingly, psychologists offer intrapsychic arguments that posit the existence of psychological deficits that interfere with the establishment of stable, committed romantic relationships (Wallerstein & Blakeslee, 1989; Werner & Smith, 1992). In Wallerstein & Blakeslee's (1989) words, "as these young men and woman faced the developmental tasks of establishing love and intimacy, they most felt the lack of a template for a loving, enduring and moral relationship between a man and a women" (pp. 299–300). This anxiety about interpersonal relationships, in turn, leads to declines in psychological adjustment in early adulthood. Sociologists also contend that the marital and socioeconomic problems of children from divorced homes are implicated in their diminished well-being (e.g., Kuh & Maclean, 1990; McLeod, 1991). In contrast to psychologists, however, they see these problems as deriving from structured lack of access to economic resources, changes in parent–child relations, and disrupted socialization in divorced families rather than from disturbed psychological development per se (for reviews see Amato & Keith, 1991; Glenn & Kramer, 1987).

Despite their clear differences, all of these explanations share the implicit assumption that parental divorce affects children's long-term development because it creates early psychological, economic, or experiential disadvantages that follow the child through the life course. They emphasize continuity rather than change and linear progressions of experience rather than contingency. Yet existing research indicates that for all of the societal concern about the long-term effects of divorce, they are modest and, by implication, dependent on the specific nature of the divorce experience, including the level of predivorce parental conflict and subsequent changes in financial status and in parent–child relations.

Other Parental Losses

In contrast to research on parental divorce, the more general body of research on the psychological sequelae of parental losses and separations incorporates explicit consideration of subsequent life experiences that ameliorate or exacerbate their effects. Descriptive studies substantiate that maternal death and other parental separations (e.g., being reared in a group home) predict high rates of depressive and anxious disorders in adulthood (e.g., Brown, Harris, & Bifulco, 1986; Harris et al., 1986; Kessler et al., 1997; McLeod, 1991; Quinton & Rutter, 1988) and are related to problems in marital relationships, as a parent, and in more general social functioning (Harris, Brown, & Bifulco, 1990; Quinton & Rutter, 1988; Quinton, Rutter, & Liddle, 1984). In each case, the long-term effects appear to derive from the circumstances surrounding the loss rather than the loss itself, specifically the subsequent lack of adequate care for the child (Harris et al., 1986).

One pathway through which early adversities might be linked with problems in adult life is their contemporaneous effects on mental health problems and the independent persistence of those problems into adulthood (Rutter, 1981). Evidence for this pathway is mixed. Results from a national U.S. sample indicate that most of the effect of childhood adversity on adult psychiatric disorders can be explained by early-onset disorders; persons who experienced adverse childhood events were more likely to develop disorders at early ages (less than age 20), but were at no greater risk for developing disorders at later ages (Kessler et al., 1997). If that result is replicated, it implies that some of the observed associations between childhood adversities and adult marital and socioeconomic attainments may be attributable to early-onset disorders. However, at least two other studies disagree. Quinton and Rutter (1988) found that the association between institutional rearing and poor parenting and psychosocial

problems in adulthood was independent of the presence of psychosocial problems during childhood. In addition, Cherlin et al. (1998) observed that childhood parental divorce led to increases in emotional problems through age 33 even among in the presence of controls for emotional problems during childhood. Transactional models (i.e., models that emphasize person–environment interactions) have not been integrated into research on parental losses, but might offer insight into the complex relations between losses, early mental health problems, subsequent life experiences, and adult adjustment.

Alternatively, childhood adversities might influence later adjustment because they alter sensitivities to later stressors or influence life options and choices (Rutter, 1981). For example, attachment theory predicts that children who lose a parent in early life (particularly the mother) have trouble coping adequately with the loss and develop a helpless–hopeless cognitive bias that leads to the development of deviant attachment patterns in subsequent relationships (e.g., ambivalence and anxiety). These deviant attachment patterns, in turn, increase vulnerability to later stressors (Bowlby, 1980). Developmental psychopathology (Rutter, 1986a) emphasizes the role of experiences leading to, surrounding, and following adversities in their associations with adult adjustment. Although distinct, both orientations acknowledge that early adversities are best conceptualized as part of a stream of life experiences rather than as isolated events.

Two programs of research that draw on these ideas point to the critical importance of considering turning points and trajectories in the life course following early childhood deprivations. In the first, Brown et al. (1986) and Harris et al. (1990) found that maternal losses were significantly and consistently associated with depression, particularly when followed by inadequate care. They traced the effects of childhood maternal losses on adult depression through two parallel causal pathways: one which links childhood helplessness following a maternal death to poor decision-making (as evidenced by premarital pregnancy and marriage to an unsupportive spouse) and the other of which links the premarital pregnancies and spousal choices to low social class in adulthood, high levels of stress, stress vulnerability, and, thereby, to depression. Key for our purposes here, they found that women who were able to overcome their early life disadvantages (including those brought about by premarital pregnancy) and successfully enter into happy, satisfying marriages were much less likely to become depressed as adults than women who were not.

Quinton, Rutter and their colleagues extend this causal pathway in their analysis of the contingencies that shape the future life course for girls who were reared in institutional settings in Great Britain (akin to group homes in the United States). Whereas on average those girls had high rates of poor parenting and psychosocial problems in adulthood, the link from institutional rearing to adult problems could be broken by marriage to a supportive spouse. Tracing the process further back in time, they observed that women with supportive and unsupportive spouses were distinguished primarily by their paths into marriage: the latter entered into marriage after having known their future spouses for relatively short amounts of time, often as the result of a premarital pregnancy, whereas the former tended to marry men whom they had known longer, without outside pressure. On the basis of these patterns, Quinton and Rutter (1988) concluded that disadvantaged girls who took a more active, planning stance towards their futures could create favorable pathways into adulthood.

The focus on turning points in these studies implies agency on the part of the individual that is lacking from many other studies of childhood events. Future research might expand this focus by examining the links between socially structured experiences and individual predispositions. Whereas planfulness and helplessness appear critical in the studies we described, the studies themselves offer little insight into their experiential origins, the predictors of their variations, and the structural contingencies that modify their developmental

relevance. In Quinton and Rutter's (1988) study of girls raised in institutional settings, girls who were placed (apparently randomly) in better schools were more likely to be planful during the transition to adulthood, but children are not often distributed across social settings in a random manner. Shanahan and Elder's (2002) research on the differential effectiveness of planfulness for achievement following the Great Depression as compared to World War II draws our attention to the importance of historical circumstances in modifying the developmental relevance of individual predispositions.

More generally, we believe that studies of parental divorce and other parental losses would benefit from a more fully realized life course analysis that takes into account positive sequelae of childhood adversities as well as the broader social and historical context in which they occur. Elder's studies of children who grew up during the Great Depression testify to the potential of this approach. He found, for example, that girls from middle-class homes who experienced economic deprivation during the Great Depression developed family-centered values that remained with them throughout adult life. They were less able than their peers from non-deprived homes to acquire education beyond high school and they married at relatively early ages. In contrast, similarly situated boys enjoyed a certain freedom that allowed them to try out adult roles earlier in life, such as taking work outside the home and developed a keener motivation for adult success than their less deprived peers. Both boys and girls from middle-class deprived backgrounds were judged to be healthier and psychologically stronger in adulthood than their middle-class children from non-deprived homes. Moreover, economic deprivation made less difference to the subsequent life course of working-class youth who had less to lose but also less to gain from the experience. In subsequent analyses, Elder and Caspi (1990) and Elder, Downey, and Cross (1986) further elaborated the diverse pathways through which children of the Great Depression entered adult life, highlighting the importance of military experience and education for men and marriage, educational sacrifice, and childbearing for women. In similar fashion, studies of parental divorce could consider the opportunities created by divorce as well as the limitations it imposes and the changing historical contexts that shape the meaning of divorce for individual families.

SUMMARY AND CONCLUSIONS

Our review focused on two areas of research that illustrate alternative approaches to the association between childhood experience and adult life and that have corresponding strengths and weaknesses. Taking a linear approach, research on the childhood antecedents of adult health provides compelling evidence for the importance of early physical and social environments over the life course, but has not given adequate attention to subsequent life circumstances. Research on the psychological outcomes of childhood losses takes a much more contingent approach, but nevertheless fails to articulate the determinants of those contingencies, in particular, the balance of structure and agency and the role of environmental responses to individual behavior. Neither area of research has adequately considered reciprocal relations between persons and their environments (i.e., transactional models) as they shape subsequent life course trajectories.

Research on childhood–adulthood links is central to the broader project of life course research because of its potential to illuminate the relationship between structure and agency and the nature of psychological and social structures, how they are perceived, and how they influence behavioral choices. To date, however, this research has failed to achieve its full potential because of inadequacies in the conceptualization of meaning and structure. For

example, despite the central relevance of subjective interpretation in theories of life stress (e.g., Brown & Harris, 1989), studies of the long-term outcomes of childhood experiences do not consider the meaning of childhood environments and experiences from the child's perspective. Kessler et al. (1997) note that parental divorce is associated with less adult psychopathology when it serves as the end-point in family conflict than when it occurs in the absence of such conflict, following Wheaton's (1990) discussion of the relevance of role histories for the psychological impact of life transitions. Brown et al. (1986) and Quinton and Rutter (1988) incorporate meaning into their interpretations of the links between childhood parental losses and adult well-being, but can only infer meaning from the relationships between the loss, psychological dispositions, and subsequent life choices. There are, of course, clear conceptual and empirical obstacles to incorporating meaning into these analyses, not the least of which is the complexity of assessing subjective meaning among children. Nevertheless, to the extent that childhood–adulthood relations result from selection into different life pathways, meaning must be central to any satisfying theory (Jessor, 1981).

Similarly, research on childhood–adulthood links has failed to develop a compelling conceptual model of the nature of social structural influences over the life course. Social structures shape children's exposures to risks and the resources they have available to cope with those risks, even before birth. What remains unclear is how best to conceptualize the nature of and changes in social structures with age (McLeod & Lively, in press). Theories of human development identify multiple, interactive contexts each of which has multiple dimensions (e.g., Bronfenbrenner, 1979). Those contexts can be further defined with respect to both their structural (e.g., marital status) and functional (e.g., parent–child relationships) aspects (Boyce et al., 1998) each of which is subject to change over time. The MacArthur Network on Psychopathology and Development (Boyce et al., 1998) asserts the need for more research on transactions between children and their environments and on the processes through which those environments translate into biological experiences.

Each of these insights has begun to infiltrate empirical research. Call and Mortimer (2001) demonstrate that experiences in one context can dampen or amplify experiences in another. Wu and Martinson (1993) present a compelling case for elaborating the dynamics of childhood context, further substantiated by research that evaluates the implications of duration of childhood statuses for adult health (e.g., Davey Smith et al., 1997). For all this progress, however, the broader structural underpinnings of social contexts and the relevance of those structures for shaping the form and effects of those contexts remain underspecified.

Underlying these comments is the need for researchers in this area, particularly sociologists, to make contingencies central rather than peripheral to their analyses. As we noted at the outset, the connections between childhood and adulthood are often small in magnitude, implying that discontinuities are the rule rather than the exception. Whereas developmental psychopathologists assume the relevance of both continuity and change, sociological studies of the life course implications of childhood experiences more often rely on linear models for theoretical and methodological guidance. By their very nature, such models do not yield information about how disadvantaged youth surmount early challenges.

More generally, research on childhood–adulthood links would benefit from explicit attention to life course principles. Whereas certain life course concepts such as transitions and trajectories permeate this research, other life course notions such as the age-graded nature of social roles, the centrality of human agency, and the historically contingent nature of development are much less evident. The life course perspective makes central processes that have been treated as peripheral in prior research (e.g., choice and action), opening new avenues of potentially fruitful investigation. Moreover, it serves as a natural bridge between sociological

and psychological perspectives and between social structure and individual development. As such, it provides leverage with which to develop models of life course continuities that transcend disciplinary boundaries.

In sum, future progress in elucidating childhood–adulthood links will require a nuanced theory of social action that is sensitive to the changing nature of cognitive capacities, social structures, and environmental responsiveness with age (House, 1995; House & Mortimer, 1990). This theory can be built in part from analyses of the divergent paths through which children become adults and the joint relation of those paths to structure, meaning, and action. The most satisfying empirical studies of the links between childhood and adulthood move back and forth between individuals and their environments, focusing in on the outcomes of key transitions and turning points over the life course (e.g., the role of planfulness in specific life transitions). Studies that examine person–environment interactions during those periods would complement existing broad-based studies by elaborating the nature of constraints and responses to specific historical and personal conditions. The broader theoretical agenda that our comments suggest cannot be accomplished in any one study, but requires the collective efforts of numerous scholars across multiple disciplines.

ACKNOWLEDGMENTS: We are indebted to the editors for their thoughtful comments on an earlier draft. Mr. Almazan's work on this chapter was supported by the ASA Minority Fellowship Program (T32 MH15722).

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