

The selected set of studies reviewed in an earlier section of this chapter reveals a common interest in studying the origins and consequences of cumulative processes over the life course. However, diverse strategies, competing hypotheses, and inconsistent findings contribute to a diversity of concepts and strategies. They are representative of the exploding literature on cumulative processes that extends to studies of deviance and delinquency; to many different aspects of physical and mental health, and cause-specific mortality; and to different national contexts that variably moderate the levels of social inequality and health disparities via social policies.

The future of life course research in general and research on cumulative processes in particular depends on the continued cross-fertilization of theories and methods, and the rigorous search for competing hypotheses and counterfactual comparisons to challenge the premises underlying the generalizations enumerated earlier. Theories of cumulative advantage and disadvantages have a provocative appeal. They are simple and have generated many questions that occupy researchers in our disciplines. They are falsifiable, but not without considered and considerable efforts to test their fit with reality. We are dependent primarily on quasi-experimental design using large data sets with many variables; this does not protect us. But studies reviewed here, and many others in the recent literature, are making substantial efforts to characterize these processes and to identify their contingencies and causes.

CHAPTER 7

Life Transitions and Daily Stress Processes

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Life transitions and daily stress have been studied extensively, though much research has neglected their mutual relevance. We know from past studies that major life transitions often have been used as markers of social development for the young, and as influences that shape adult health and well-being (Baltes & Baltes, 1990; Chiriboga, 1989, 1997; Elder, George, & Shanahan, 1996). In the life course, transitions denote "changes in status that are discrete and bounded in duration" (George, 1993, p. 358). Transitions not only entail changes in status but, in accordance with life course theory, also lead to changes in individuals' internal states that can be abrupt and disruptive or empowering, thereby resulting in some degree of stress, either positive or negative. From a stress perspective, these transitions also may require individual adaptation that depletes psychological and physical resources or even genetic resources. It has long been known that transitions such as job loss, marital disruption, and death of a loved one adversely affect psychological and physical health (Brown & Harris, 1989; Dohrenwend & Dohrenwend, 1974; Holmes & Rahe, 1967; Hultsch & Plemons, 1979). However, the transition into a marriage or new job may increase well-being through acquisition of new social and human capital (Sampson & Laub, 2003). Because transitions are embedded in life course trajectories that influence the transition experience, these contextual environments must be considered in assessing how transitions affect stress and

subsequent well-being. We contend that stress increases during periods of uncertainty and that transitions, by their very nature, challenge past routines and invite new adaptation. Furthermore, experience over the life course results in people learning how to handle transitions and developing successful adaptations that they can call on again.

In this chapter we present a perspective on life transitions and daily stress processes by describing a model that applies key life course principles to the study of life transitions and daily stress processes (Giele & Elder, 1998a). This perspective highlights variations and differences within and between individuals as they develop in multidimensional social-historical contexts (Elder, 2000; Elder, Johnson, & Crosnoe, 2003). We use principles of life course theory to understand group and individual differences in the effects of life transitions on daily stress across adulthood, within the context of changing and stable personal and environmental factors (e.g., social-demographic factors, personality, chronic stressors, health status). We believe that applying the key life course principles to the analysis of life transitions and daily stress processes will enhance our understanding of the ways people manage the changing circumstances of everyday life to maintain their well-being, both physical and emotional.

Life Events versus Daily Stressors

There are two prominent ways to think about the stress of life transitions. One approach focuses on the molar impact of the life changes—this is the life event tradition (e.g., Holmes & Rahe, 1967). The other approach takes a microscopic dynamic approach to stressors, with a focus on the accumulation of daily stress (Bolger, Davis, & Rafaeli, 2003; Pearlin, 1999). The two approaches are complementary. For example, the transition from marriage into divorce may represent a long-term disruption, as well as an immediate change not only in one's social and economic situations but also in health behaviors (Morrison & Ritualo, 2000; Peterson, 1996). Lorenz, Wickrama, Conger, and Elder (2006) found that divorced women report significantly higher levels of psychological distress than do married women in the years immediately after their divorce. Psychological distress, however, corresponded closely to the event of getting a divorce, rising quickly and then declining as the event receded into the past. Depending on the context, the transition from marriage to divorce may substantially increase the stress level as a whole, but a daily history of this change is likely to show periodic peaks and valleys as individuals adapt to this transition. Wheaton (1990) has highlighted the importance of context, showing that distress decreases

when individuals terminate an unsuccessful, conflict-ridden marriage. For those who exit satisfying marriages, distress increases. What is missing in these analyses is how divorce and subsequent social and economic transformations lead to disruptions, challenges, and perhaps opportunities in daily stress processes that may in turn play an important role in psychological distress.

An emerging literature has shown that day-to-day stressors, such as spousal conflict and work deadlines, play an important part in health and emotional adjustment (Zautra, 2003). Daily stressors represent tangible, albeit minor, interruptions that tend to have a more proximal effect on well-being than major life transitions. In terms of their physiological and psychological effects, reports of life transitions may be associated with prolonged arousal, whereas reports of daily stressors may be associated with spikes in arousal or psychological distress during a particular day (Almeida, 2005). In addition, minor daily stressors exert their influence not only by having separate and immediate direct effects on emotional and physical functioning but also by piling up over a series of days to create persistent irritations, frustrations, and overloads that increase the risk of serious stress reactions such as anxiety and depression (Lazarus, 1999; Pearlin, Menaghan, Lieberman, & Mulan, 1981; Zautra, 2003).

Daily Stressors and Diary Designs

The understanding of daily stressors has benefited from the development of diary methods that obtain repeated measurements from individuals during their daily lives. Using short questionnaires or telephone interviews, individuals report on the stressors they experienced on that day, as well as their behaviors, physical symptoms, and emotional states during that same time frame. The number of days and the number of respondents vary greatly across studies. For example, the Vienna Diary Study followed 40 couples every night over the course of an entire year (Kirchler, Rodler, Holzl, & Meier, 2001), whereas the National Study of Daily Experiences assessed the daily lives of 1,483 adults across United States on eight consecutive evenings (Almeida, Wethington, & Kessler, 2002). Diary methods have a number of virtues (Bolger et al., 2003). By obtaining information about individuals' actual daily stressors over short-term intervals, they circumvent concerns about ecological validity that constrain findings from laboratory research. Furthermore, diary methods alleviate retrospective memory distortions that can occur in more traditional questionnaire and interview methods that require respondents to recall experiences over longer time frames.

Perhaps the most valuable feature of diary methods is the ability to assess within-person stressor reactivity. "Reactivity" is the likelihood that an individual will show emotional or physical reactions to daily stressors (Almeida, 2005). In this sense, "stressor reactivity" is not defined as the converse of well-being (i.e., negative affect or physical symptoms) but is operationalized as the within-person relationship between stressors and well-being. This represents a shift from assessing mean levels of stressor and well-being between individuals to charting the day-to-day fluctuations in stress and well-being within an individual. Stress is a process that occurs within the individual, and research designs need to reflect this process. For example, instead of asking whether individuals with high levels of work stress experience more distress than individuals with less stressful jobs, a researcher can ask whether a worker experiences more distress on days when he or she has too many deadlines (or is reprimanded) compared to days when their work has been free of stress. This within-person approach allows the researcher to rule out temporally stable personality and environmental variables as third-variable explanations for the relationship between stressors and well-being. In addition, the intensive longitudinal aspect of this design permits a temporal examination of how stressors are associated with changes in well-being from one day to the next. By establishing within-person associations over time between daily stressors and well-being, researchers can more precisely establish the short-term effects of concrete daily experiences (Bolger et al., 2003).

Figure 7.1 illustrates how we statistically model daily stressor reactivity. The predictor variables are aspects of stressful events that occur on a given day (e.g., number and type of stressors, average severity of stressors). The outcome variables are measures of well-being the respondent experienced on a given day (e.g., negative mood, physical symptoms). Figure 7.1 is based on daily diary data, using the day of the week as the unit of analysis but repeated data for different intervals of time (e.g., hours or weeks) that can be fit to the model. This model is a prospective reactivity model in that it uses time lags to test whether stressors at one point in time predict well-being at a subsequent point in time. The data can be analyzed using hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992), a method that allows simultaneous estimation of both (1) a separate within-person model of regression slope and intercept for each respondent; and (2) a between-person model in which the within-person slopes and intercepts are treated as dependent variables regressed on person-level predictor variables. The simple form of an HLM can be conceived of as two separate models, one a within-person model (Level 1) and the other a between-person model (Level 2). This model can be expressed as

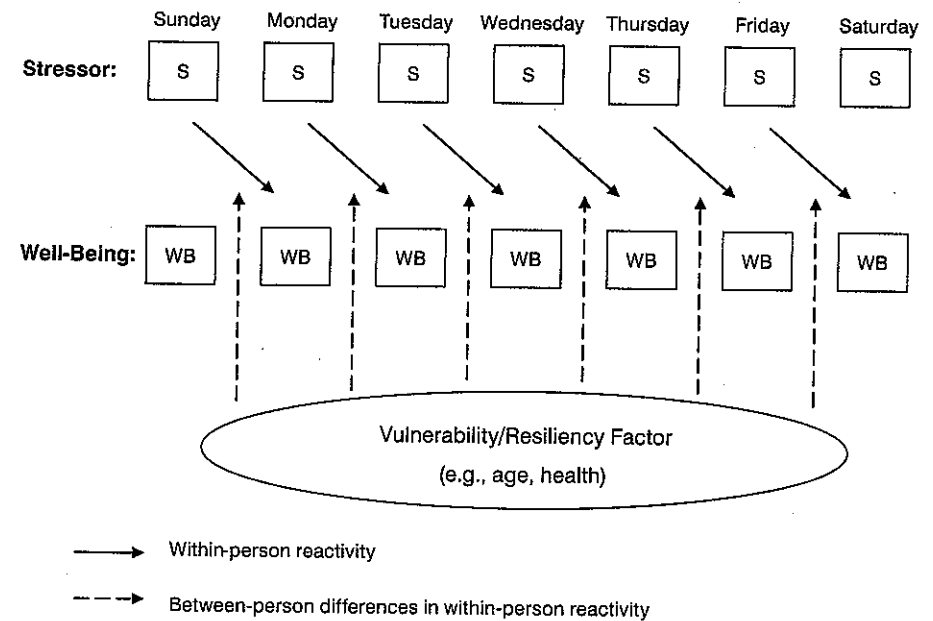


FIGURE 7.1. Prospective model of daily stressor reactivity.

$$\text{Level 1: WELL-BEING}_{it} = a_{0i} + a_{1i}\text{STRESSOR}_{it-1} + e_{it} \quad (1)$$

where WELL-BEING_{it} is the reported well-being (i.e., psychological distress, physical symptoms) of person i on day t , STRESSOR_{it-1} indicates whether a given daily stressor was experienced by person i on day $t-1$ (coded 0, if no stressor occurred, and 1, if a stressor occurred), a_{0i} is the intercept indicating person i 's level of well-being on days when $\text{STRESSOR} = 0$, a_{1i} is the reactivity slope indicating the emotional or physical reactivity of person i to the daily stressor, and e_{it} is the random component or error associated with well-being of person i on day t . To estimate average effects for the entire sample, the intercepts and slopes of the Level 1 within-person model become the outcomes for the Level 2 between-person equations as follows:

$$\text{Level 2: } a_{0i} = b_0 + d_i \quad (2)$$

$$a_{1i} = b_1 + g_i \quad (3)$$

Equation 2 shows that person i 's average well-being score across the diary days (a_{0i}) is a function of the intercept for the entire sample—the

grand mean of the sample (b_0)—and a random component or error (d_i). Likewise, Equation 3 shows that person i 's reactivity slope (a_{1i}) is a function of the grand mean of the entire sample (b_1), and a random component or error (g_i). In this way, reactivity is operationalized as the slope determined by both the occurrence of daily stressors and well-being (a_{1i}).

Researchers can adapt this model to examine not only the occurrence of daily stressors but also other aspects of daily stressors, such as content of the stressor (e.g., overloads, interpersonal conflicts), dimension of threat (e.g., danger, loss), stressor severity, and primary appraisal of the stressors. Subsequent analyses can examine the extent to which reactivity to daily stressors differs as a function of social-demographic factors and personality. The following section describes a life course approach to studying predictors of daily stress processes.

Life Course Model of Life Transitions and Daily Stress

Advances in daily stress research have sought to identify sources of variation across stressors *within individuals*, as well as sources of variation in the stress process *between individuals*. In other words, certain stressors are healthier than other stressors, and certain individuals are more prone than other individuals to the effects of stress. Life transitions are likely to play important roles in both sources of variation. Recent improvements in the measurement of daily stressors and study design have allowed research to address (1) how different types of stressors, and personal meaning attached to these stressors, affect well-being; and (2) how life transitions account for group and individual differences in daily stressor processes.

Figure 7.2 applies a life course perspective to these two questions. The right side of Figure 7.2 represents daily stress processes that occur within the individual. Daily stress processes occur over relatively short time intervals, ranging from minutes to days and weeks. Our model of daily stress combines the environmental stress perspective that emphasizes objective characteristics of daily stressors and the psychological perspective that highlights individuals' subjective appraisal of stressors. Objective characteristics of the stressor include *frequency*, *content* classification (e.g., interpersonal tension, overload), a *focus* on who was involved in the stressor (e.g., family member, coworker), and the normative *severity* of the event (e.g., degree of unpleasantness, disruption for an average person). This model also takes into account individuals' perceptions and evaluations of the daily stressors. Individuals appraise stressors in terms of perceived severity of loss, threat, or challenge, as well as

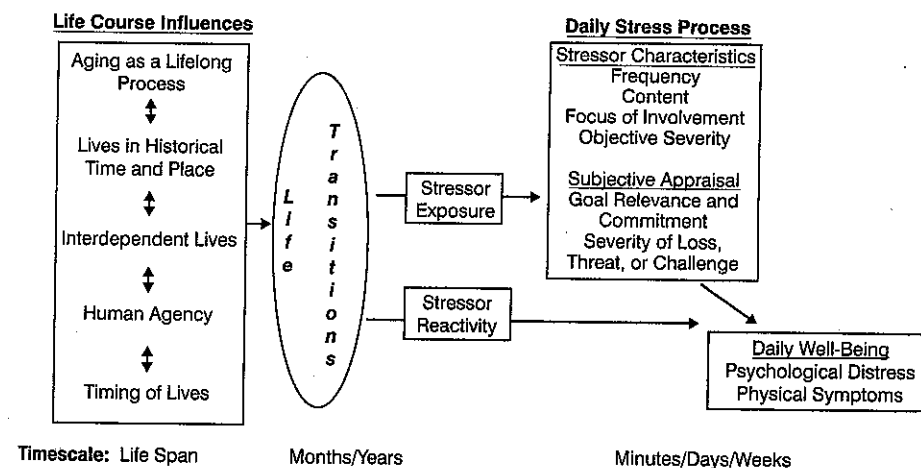


FIGURE 7.2. Life course perspective on life transitions, daily stress, and well-being.

disruption of daily goals and commitments. Both objective and subjective components of daily stressors are vital to daily well-being (Cohen, Kessler, & Gordon, 1997). The topic and severity of the stressor, as well as who is involved, may play an important role in how that stressor is appraised and, in turn, the distress it causes. Integrating these two components of the stress process allows researchers to ask whether certain types of stressors are associated differentially with varying components of well-being and the extent to which certain daily stressors elicit different appraisal processes and, hence, different well-being responses.

The middle of Figure 7.2 shows how life transitions influence daily stress processes. Life transitions occur over longer timescales than do daily stress processes, but they still play an important role in daily well-being. We contend that major life transitions affect daily well-being by increasing exposure and reactivity to daily stressors. "Exposure" is the likelihood that an individual will experience a daily stressor based on combinations of life course factors. Experiencing stressors is not simply a matter of chance or bad luck; rather, differences in stressor exposure more often emerge from individual social-demographic, psychosocial, and situational factors (Pearlin, 1999; Wheaton, 1999).

The stressor exposure path in Figure 7.2 illustrates that daily stress exposure processes may be precipitated by life transitions. It is during periods of uncertainty that stress tends to be higher, and transitions, by their very nature, challenge past routine and invite new adaptations. These transitions may entail older children leaving home (e.g., Lowen-

thal & Chiriboga, 1972), career transitions (e.g., Moen, 2003), and the renegotiation of family relationships (e.g., Blatter & Jacobsen, 1993). Life transitions often involve a transformation of multiple domains of responsibilities, such as when work responsibilities and caretaking are combined for aging parents and children. Normal and expectable life transitions do lead to changes in self-concepts and identities; however, they do not necessarily produce crises (Neugarten, 1979). Role changes that are unanticipated and unrehearsed are likely to expose individuals to unique daily stressors and require them to elect strategies for a successful adaptation. These stressors may mediate and specify the effects of life transitions on daily well-being. "Mediation" may occur when a life transition leads to increased day-to-day stressors that in turn add to the overall effect of life transitions on well-being. This process was illustrated by Rowlison and Felner (1988), who view major life events as transitional markers that often disrupt established daily activities, formerly shared responsibilities, and day-to-day social relations, thereby increasing the risk of psychological distress.

Life transitions also may play an important role in daily stressor reactivity, as depicted in Figure 7.2. Because resources of individuals and their environments (e.g., education, income, chronic stressors) limit or enhance the possibilities and choices for coping with daily experiences (Lazarus, 1999), reactivity to stressors is likely to differ across people, as well as across situations. The stressor reactivity path in Figure 7.2 illustrates that life transitions modify reactivity to daily stressors. The emotional and physical impact of minor day-to-day stressors may be magnified in the context of a major life transition either by representing the proverbial straw that broke the camel's back (e.g., an objectively small, but insurmountable, financial difficulty caused by a breakdown of the family's only car in the wake of the chief breadwinner's job loss) or by taking on new meaning in the context of a matching event that makes the minor event seem much more important than it would be to the average person (e.g., a minor disagreement with a coworker coinciding with a conflict-ridden marital breakup; Brown & Harris, 1978).

Finally, the left side of Figure 7.2 indicates that the effects of life transitions on daily stress processes are greatly shaped by life course influences. Life transitions may bring about disruptions of established roles and status that may be stressful and lead to distress in other areas of individuals' lives (Pearlin, Schieman, Fazio, & Meersman, 2005). However, the effects of life transitions on psychological and physical well-being depend on temporal and social characteristics of the individuals and their environment. Thus, each key principle of the life course perspective has important implications for the study of daily stress processes via exposure and reactivity to daily stressors, as depicted on the left side of Figure 7.2.

Life Course Influences on Daily Stress Processes

The following subsections describe how each of the key life course principles can be directly applied to the study of daily stress processes. We then provide an integrated example of a life course perspective on life transitions and daily stress processes by presenting recent studies on how the timing of retirement affects daily stress and well-being. Our examples come from the National Study of Daily Experiences (NSDE), a telephone diary study of a U.S. national sample of 1,483 adults ranging in age from 25 to 74 years. Interviews occurred over eight consecutive nights, resulting in 11,578 days of information.

The NSDE is well suited to examine daily stress from a life course perspective for a number of reasons. First, previous diary studies of daily stressors have relied on small and often unrepresentative samples, with restricted age ranges that limit the generalizability of findings. In contrast, the NSDE analyzes data from a national sample of adults who are a representative subsample of a general population survey, Midlife in the United States (MIDUS). Second, previous studies of group and individual differences in exposure and reactivity to daily stressors typically have examined only one source of variability, such as age, to the exclusion of others. The NSDE utilizes data collected in the larger MIDUS survey on a wide array of psychosocial and social-demographic characteristics of respondents to study the determinants of exposure and reactivity to daily stressors. Third, previous studies typically have relied on self-administered checklists of daily stressors that only assess the occurrence of a stressor. This study used a semistructured telephone interview instrument that measures several aspects of daily stressors, including objective stressor characteristics (e.g., type) and subjective stressor appraisals (e.g., perceived severity). Finally, the NSDE recently has obtained a second wave of information approximately 10 years after the original data collection. In the final section of this chapter, we use these longitudinal data to examine how the timing of a specific major life role transition, retirement, predicts daily stress processes.

Aging as a Lifelong Process

An overarching principle of the life course perspective is that human development is a lifelong process that must be examined across time (Elder et al., 2003). A primary focus of our research has been on adult development and daily stressors. It is well documented that younger adults report greater psychological distress than their older counterparts (Gurin, Veroff, & Feld, 1960; Mroczek & Kolarz, 1998). This age gradient in distress is most likely due in part to age differences in both exposure and reactivity to major life events and daily stressors. Com-

pared to younger adults, older adults are more likely to experience certain life transitions that involve loss (e.g., retirement, widowhood) and less likely to experience others that involve new or expanded relationships (e.g., marriage, childbirth) (Hughes, Blazer, & George, 1988; Lowenthal, Thurnher, & Chiriboga, 1975). In terms of daily stressors, older adults tend to have fewer undesirable daily events (Zautra, Finch, Reich, & Guarnaccia, 1991). This decreased exposure may be due to a reduction in social roles and time commitments across the life course. Verbrugge, Gruber-Baldini, and Fozard (1996), for example, showed that with increasing age, time spent on personal and physical care, sleep, and personal activities increased, whereas time spent on work and sports participation decreased. Moreover, older individuals also may be less reactive to daily stressors, because they have fewer and less expansive expectations and life goals (Brim, 1992; Cross & Markus, 1991). Another possibility is that older individuals are less reactive to daily stressors because of the types of events they face. Brim and Ryff (1980) suggested that age-related life events, which have a strong likelihood of occurring (e.g., the "empty nest" or retirement), permit anticipatory coping that may mitigate their potentially stressful impact.

Using data from the NSDE, we examined *daily* stressor exposure by assessing age differences in objective and subjective characteristics of daily stressors (Almeida & Horn, 2004; Birdett, Fingerman, & Almeida, 2005; Neupert, Almeida, & Charles, 2007). These analyses revealed that young (25–39 years) and middle-aged individuals (40–59 years) reported a greater daily frequency of experiencing at least one stressor and multiple stressors than did older individuals (60–74 years), consistent with previous research documenting that older adults tend to experience fewer life events (Hughes et al., 1988; Lowenthal et al., 1975). Compared to older adults, young and midlife adults also experienced a greater proportion of interpersonal tensions (e.g., marital conflict or argument with a coworker) and "overload stressors"—stressors involving multiple demands and responsibilities. Older adults, on the other hand, reported a greater proportion of "network stressors"—events that happen to a close friend or relative and turn out to be stressful for the respondent (e.g., a spouse's illness). The age-related patterns of the content classification (overload and interpersonal tensions vs. network) of daily stressors can be interpreted through the social roles that these respondents were likely to inhabit. The results suggest that overloads and demands are a greater source of daily stressors for young and midlife adults compared to their older counterparts, although the source of the demands might differ by gender. Young men's daily stressors were more likely than stressors of respondents in the other groups to revolve around overloads and interactions with coworkers. Midlife

women reported the same percentage of overloads as young women but had a greater proportion of stressors that involved other people (network stressors). Although overloads were not a common type of stressor for older adults, those respondents with overload had the greatest proportion of network and spouse-related events. Subsequent analyses used multilevel modeling to assess age differences in reactivity to daily stressors. Overall, younger adults were more emotionally reactive to interpersonal tensions, and older adults were more reactive to network stressors.

Historical Time and Place

A key principle of the life course perspective is that lives are nested in historical context and place (Elder et al., 2003). Historical and economic experiences can influence future life experiences and alter the trajectory of the timing and decisions made through the life course (Elder & Rockwell, 1979a; McAdam, 1989). In the study of daily stress process, it is important to consider that exposure and reactivity to stressors differ because of not only what people do in their lives but also the historical context and place in which they are embedded. For example, daily stress processes may be altered in the context of a national tragic event. Neupert, Almeida, Mroczek, and Spiro (2006) examined the effects of the Columbia shuttle disaster on the daily lives of older adults. When the Columbia shuttle exploded on February 1, 2003, the U.S. Department of Veterans Affairs (VA) Normative Aging Study (NAS) was carrying out a daily diary investigation of daily stressors and well-being among military veterans and their spouses. Findings from the study showed that respondents reported fewer daily stressors on the days following the shuttle tragedy. Given the enormity of the explosion and the unfortunate deaths of the astronauts on board, it is possible that the explosion led to a general recalibration of the definition of a "stressor," and people were less likely to report minor incidents. Perhaps, with the explosion as the reference point, being stuck in traffic or waiting in line at the grocery store paled in comparison. Respondents also reported a significant decline in positive affect, but there were no significant changes in negative affect after researchers controlled for the number of daily stressors experienced. The decrease in positive affect on days following the shuttle explosion could be attributed to the realization of the somberness of the event and its consequences. The participants in this study also were older (ages 59–89) and had served with the military or had seen their spouses serve. Their previous experiences with stressors and negative affect might have helped to minimize their negative response in this instance.

Specific historical events can impact individuals' lives directly; however, the broader historical context, such as membership in a specific birth cohort, also can shape daily lives. Take the work of Easterlin (1987), who connected cohort size among the low-birthrate generation of the 1930s and the high-birthrate generation of the 1950s to the fortunes and future of personal welfare. Upon reaching adulthood, those born in the 1930s experienced a labor market in which younger workers were in short supply. These members of the 1930s generation were able to find employment with good wages and to ascend the career ladder. These individuals also experienced little unemployment. In contrast, those born in the 1950s faced a labor market in adulthood in which younger workers were abundant and employment competition was high. Difficulties in finding a job, especially a job with good wages and benefits, undoubtedly affected marital, as well as childbearing, decisions. Thus, according to Clausen (1986, p. 8), "a cohort's placement in historical time tells us much about the opportunities and the constraints placed upon its members."

Our research has explored the daily stress processes among the birth cohorts of the baby boom generation. Significant historical changes (e.g., Vietnam War, education opportunities) and economic conditions (e.g., employment rate) associated with birth year have altered the life course of baby boomers in distinct ways. Using data from NSDE, Almeida, Serido, and McDonald (2006) assessed differences in exposure and reactivity to daily stressors among early and late baby boomers. Baby boomers were classified into two groups: early baby boomers—born between 1946 and 1954, and late baby boomers—born between 1955 and 1964. The average age of early baby boomers was 45 (age range, 41–49), whereas that of late baby boomers was 36 (age range, 31–40). Early boomers were more likely to have graduated from college and less likely to have children under the age of 18 in the household. Furthermore, more early baby boomer men had college degrees in comparison to late baby boomer men. These differences could be attributed to early baby boomers who graduated from high school having had the option of entering the armed forces, in addition to continuing their education or entering the workforce. Young adults who could afford an education may have decided to continue their education to avoid military service. In contrast to the early baby boomers, by the time the late baby boomers were making a similar life decision, the specter of military service no longer was present.

Next we examined whether these demographic differences translated into differences in daily stress processes. Although, both groups experienced a similar number of work, home, and health-related stressors, late baby boomers reported more other-focused stressors (i.e.,

stressors that happened to another person but impacted the respondent) than did early baby boomers. It may be that younger baby boomers are impacted more directly by stressors that involve others, such as younger children. Late baby boomers' stressors also presented more of a risk to finances than did those of early baby boomers. There are several possible explanations for this finding; perhaps older baby boomers have had a greater number of years than late baby boomers to establish their financial security. Another explanation might be that having children in the household may be a potential financial drain for late baby boomers. Late baby boomers also reported experiencing significantly higher levels of psychological distress than did early baby boomers. Finally, comparison of education level within each cohort revealed that respondents without a college degree report higher levels of distress on both stressor and nonstressor days. Among late baby boomers, that effect was exacerbated on stressor days, in that on days when late baby boomers experienced a stressor, those with a college degree reported lower levels of distress than did late baby boomers without a college degree. These findings highlight that examining cohort effects simply is not adequate without considering the social–demographic context of individuals such as education.

Interdependent Lives

Another key life course principle is that developing lives are lived interdependently. The principle of linked lives suggests that different levels of social actions interact and mutually influence each other (Giele & Elder, 1998a). Social networks shape and are shaped by major life transitions (Elder et al., 2003). Similar processes also are present at the daily level. People's daily lives are characterized by interactions with family members (e.g., spouses and children), acquaintances (e.g., neighbors and coworkers), and friends. Although these social exchanges often are positive, they also may be negative. Family relationships, especially those that are characterized by higher quality and reciprocity, may be sources of social support and function as buffers against stressors by providing emotional support, advice, and assistance (Rossi & Rossi, 1990). However, these social exchanges also may be conflicted, demanding, and sources of worry or concern (Kiecolt-Glaser & Newton, 2001; Pearlin & Skaff, 1996). Of all daily problems encountered, interpersonal problems are the most detrimental source of stress, taxing an individual's emotional, physical, and cognitive resources (Almeida, 2005; Bolger, DeLongis, Kessler, & Shilling, 1989; Clark & Watson, 1988). Indeed, interpersonal tensions are better predictors of psychological well-being than other types of everyday stressors, such as work overloads (Almeida

& Kessler, 1998; Bolger et al., 1989). The experience of interpersonal tensions, furthermore, varies from early adulthood to old age. The adulthood and aging literatures postulate that as people grow older, they have fewer problems in their relationships, experience less distress, and become less aggressive and more conciliatory, because they are exposed to different social contexts and perhaps are better able to regulate reactions to problems (Blanchard-Fields & Cooper, 2004; Carstensen, Isaacowitz, & Charles, 1999; Lazarus, 1996).

Our research using the NSDE has investigated whether younger and older adults differ in exposure and reactivity to interpersonal problems in day-to-day life (Birdett et al., 2005). We defined "exposure" as the number of interpersonal problems that individuals experienced and the type of social partners (e.g., spouse, child, and acquaintance) with whom they experienced problems. "Reactivity," on the other hand, involved how a person responds emotionally and behaviorally to that tension. To examine these issues, we used daily reports of tensions, which allowed us to assess the variety of social partners who irritate adults of different ages, and how they respond to those irritations. In addition, by examining daily reports, we were able to assess whether differences in exposure accounted for variations in reactivity. These analyses revealed that older adults, compared to younger adults, reported fewer interpersonal tensions, were more likely to report tensions with spouses, less likely to report tensions with children, experienced less stress, and were less likely to argue and more likely to do nothing in response to tensions. Age differences in emotional and behavioral reactions did not appear to be due to variations in exposure to tensions.

Another example of the role of linked lives on daily stress process comes from an analysis of adult caregivers (Savla, Almeida, Davey, & Zarit, 2008). Past research on routine assistance to older parents is based primarily on retrospective accounts of assistance provided over long time spans. Very little is known about the association between providing routine assistance amid everyday circumstances and the psychological consequences for the adult child over shorter time spans. From the NSDE, we used 3,668 daily diary interviews of 529 participants who provided assistance to their parent. A unique question accessible with this design was whether adult children were more distressed on days they provided assistance to a parent than on days they did not. Even after controlling for situational variables, such as time spent on daily chores at home and work, and network stressors, psychological distress was found to be higher on days when one provided assistance to a parent than on days when one did not. Social-demographic and psychosocial variables, such as being African American, unmarried, having a high school degree or less, and being highly neurotic, were found to

be important vulnerability factors. Results highlight the importance of examining micro-level daily data to understand the enactment of the caregiving role.

Human Agency

Although historical and interpersonal contexts play important roles in daily experiences, it is imperative to consider the agency of human beings in constructing their daily lives. Individuals are not passive recipients of their environment. As active agents, individuals construct their lives within the constraints of their social and historical contexts (Elder et al., 2003). Such decisions and choices, undoubtedly, have important consequences for long-term future trajectories, as well as short-term daily experiences (Ong, Bergeman, & Bisconti, 2005). Our research has examined agency by assessing two types of control beliefs, mastery and constraint. "Mastery" often is described in terms of one's judgments about his or her ability to achieve a goal, whereas perceived "constraints" refer to the extent to which people believe that factors interfere with goal attainment (Lachman & Weaver, 1998). Pearlin and Schooler (1978) suggested that personal mastery is an important psychological resource that mitigates the effects of stress and strain. When faced with stressful situations, a strong sense of control also has been linked to low levels of self-reported perceived stress (Cameron, Armstrong-Stassen, Orr, & Loukas, 1991) and lower risk of depression (Yates, Tennstedt, & Chang, 1999). Higher levels of perceived control also buffered recently bereaved wives from anxiety when they were faced with daily stressors (Ong et al., 2005).

We were particularly interested in examining both mastery and constraint in the NSDE because they could be differentially important across the adult lifespan. For example, as younger adults are striving toward goals in their work lives, a sense of mastery may be particularly important. Because midlife represents a time when work status and expertise may be at its peak (Clark-Plaskie & Lachman, 1999) and differences in sense of control within the work domain exist between young and middle-aged adults as a function of progress along the career path at different stages in the life course (Heise, 1990), we examined whether control beliefs would be particularly important for middle-aged adults' well-being in response to work stressors. Based on prior research findings that younger adults who are invested in establishing interpersonal relationships more often employ active problem-solving strategies to their daily interpersonal problems than do older adults, we predicted that perceived control (both constraints and mastery) would have a stronger relationship with well-being (both emotional and physi-

cal) among younger adults than among older adults. Finally, we wanted to examine whether there were age and control belief differences in emotional and physical reactivity to home and network stressors. Findings from the NSDE showed that age and control beliefs both play an important role in reactivity to interpersonal, network, and work stressors (Neupert et al., 2007). Specifically, older age and lower perceived constraints were each related to lower emotional and physical reactivity to interpersonal stressors. High mastery buffered the physical effects of work stressors for younger and older adults, and high mastery was important for middle-aged adults' emotional reactivity to network stressors. Furthermore, when network stressors were examined, high constraint was found to be detrimental for younger and older adults' physical symptoms in comparison to those of middle-aged adults.

Life Transitions, Daily Stress, and Timing

According to George (1993), a study of "timing" has been largely ignored in stress research and is much needed. The principle of timing refers to the idea that "developmental antecedents and consequences of life transitions, events, and behavioral patterns vary according to their timing in a person's life" (Elder et al., 2003, p. 12). Depending on when it occurs in the life course, the meaning of a transition differs and affects an individual differently (Wheaton, 1990). A good example of the effect of transition timing and well-being is Quick and Moen's (1998) research on the transition to retirement. These researchers first conceptualized timing of retirement by defining retirement transitions as *early* (before age 60), *on time* (between ages 60 and 65), or *late* (after age 65). They then categorized retirement timing according to the difference between respondents' expected and actual retirement age, resulting in those who retired earlier than, later than, or at the time they expected. Women who retired on time were more likely than those who retired early or late to be very satisfied with retirement. Furthermore, those women who retired early (before age 60) were more likely to rate their retirement years as better than their preretirement years on the job than were women who retired on time or late. As for men, the expected timing of retirement mattered more than actual timing of retirement transition. In comparison to men who retired when they expected, men who retired earlier than expected were more likely to indicate that the years since retirement were better than the 5 years prior to it.

This study illustrates the importance of accounting for timing of transitions, whether through age expectations or social timetables, in understanding the social and personal meanings attached to life transitions. By investigating the context of life transitions, one can obtain

a more complete understanding about the experiences of individuals undergoing them.

We have begun to examine how transitions in social roles affect daily experiences of respondents in the NSDE. It is important to mention that the NSDE examples presented thus far to illustrate the key components of the life course on daily stress processes have relied on cross-sectional data. The study of transitions, however, requires longitudinal data. Fortunately, the NSDE recently completed a second wave of data collection, approximately 10 years after the first. Respondents in the second wave ranged from 35 to 84 years of age and answered a protocol similar to the original: They completed daily telephone interviews about time use, psychological distress, physical symptoms, productivity, and daily stressors over 8 consecutive days. The newly collected longitudinal data enabled us to study life course transitions and coinciding changes in daily stress processes. The following are new findings on how the timing of the transition from employment to retirement predicts changes in daily psychological distress and the nature of daily stressors over the 10-year interval between the first and second waves.

We chose retirement because it is a very salient marker of adult development. Although not all workers will make the retirement transition, entitled programs, such as Social Security, have made retirement possible for more Americans. Conceptualized as the exit from one's *primary* career occupation, "retirement" also has been defined as the *final* exit from the labor force or *when* one receives a pension (or early retirement package) from a career employer and/or Social Security benefits. Retirement can also be a self-definition of *being retired*. Although the definition of retirement continues to be an unsettled issue, most researchers view retirement as a *process* that occurs in *context*. According to Moen (2003), retirement is an occupational career transition, as well as a family transition. For some, the exit from one's primary career occupation represents a transformation in one's social and physical worlds (e.g., changes in social role). The transition from employment to nonemployment may lead to increased opportunities for participation in unpaid volunteer work and leisure activities, thereby resulting in changes in one's daily life.

Data were from 79 respondents (average age 66.5, $SD = 6.7$; 34 men) who reported being employed at Wave 1, then classified themselves as being retired at Wave 2. As noted earlier, timing of retirement was classified into three categories utilized by Quick and Moen (1998). In addition to timing of transition, we also examined the effects of gender and education (less than a high school degree, high school or some college, and a college degree or more). A series of hierarchical multiple regressions, including transition timing, gender, and education (Step 1), and

interaction between transition timing and gender, and transition timing and education (Step 2) were estimated for each psychological distress and daily stressor variable. Change scores in psychological distress and daily stressor variables were computed by subtracting scores at Wave 1 from Wave 2, in which a positive value denotes higher value at Wave 2.

Gender played an important role in how timing of retirement affected daily experience (see Figure 7.3). Men who transitioned into retirement early (before age 60) experienced the greatest increase in negative mood in comparison to their male and female counterparts who retired on time (between ages 60 to 65) or late (after age 65). For these men, moving into retirement too early may have represented a violation of societal norms and expectations about work, as well as the masculine role. Although not explored in the current analysis, future analyses also should examine the push-and-pull factors (e.g., health, job satisfaction) associated with employment. In contrast to the pattern observed for men, women who transitioned into retirement late (after age 65) reported the greatest increase in negative mood when compared to women who transitioned into retirement early or on time.

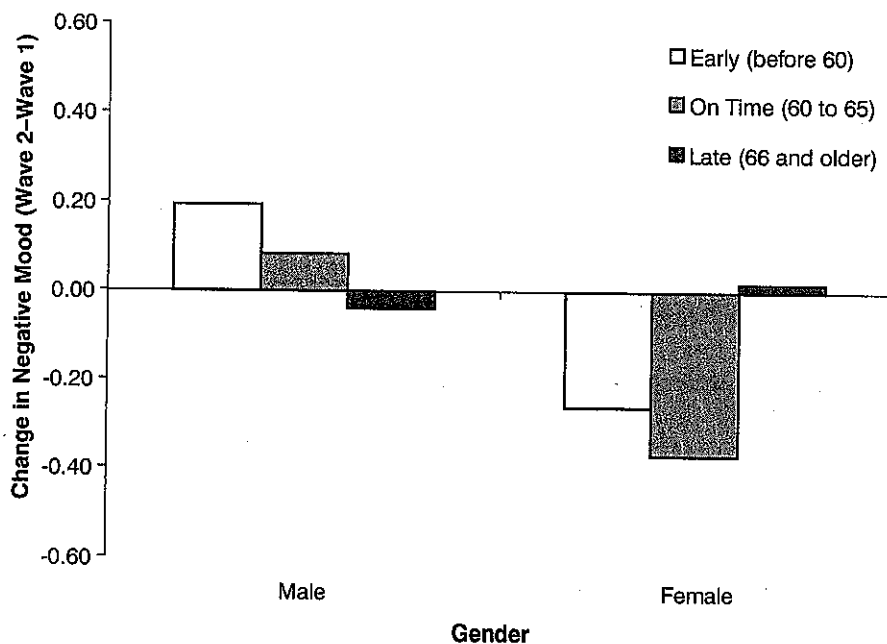


FIGURE 7.3. Retirement timing and gender interaction on change in negative mood.

We also were interested in respondents' appraisals of their daily stressors; however, gender and timing of transition did not predict appraisals of daily stressors. Nor did gender and timing of transition predict changes in stressor severity. Education level also was explored, but there was no significant interaction between education and transition timing, and psychological distress or daily stressors. Although the transition to retirement may represent an opportunity to depart from psychological, physical, and social stressors associated with one's employment (e.g., a difficult employer, irritable coworkers, or a physically demanding job), these findings suggest that researchers must go well beyond whether a transition was experienced, however disruptive, to examine the *timing* of the transition and its impact on individual well-being.

Future Directions: Earlier Stages of the Life Course

Throughout the chapter, we used examples of daily stress processes during middle and later adulthood, but this perspective may also be useful for other periods of the life course. Young adulthood, for example, is a time with multiple life transitions, including moving out of the parents' home, starting careers, and becoming parents. Each of these transitions brings a unique set of daily stressors. For example, parenthood, with associated and ongoing changes in roles, relationships, routines, responsibilities, identities, and task demands (Fish, Stifter, & Belsky, 1993), represents a paradigmatic life change with potentially serious consequences. A host of new and intensified challenges emerge during the transition to parenthood: physical changes, symptoms, and pregnancy/delivery complications; sleeplessness; concerns about financial stability; managing infants' crying or nearly continuous need for physical care and monitoring; and time-related pressures, including work-family balance.

It is important to acknowledge that the interfaces between parental transitions are greatly shaped by life course principles we describe earlier. Many of these principles are featured in Linda Burton's (1996) important work documenting family role transitions among African American women. The principle of linked lives is illustrated in the way that the transition to parenthood transforms the caregiving responsibility of not only mothers but also grandmothers and even great-grandmothers. The timing of childbearing had a profound effect on the whole extended family, because "family timetables for childbearing, marriage, and grandparenthood provided clear directives for these women as they moved from one family role to the next" (p. 201). Members in families with "on-time lineage" timetables expected these role

transitions, were prepared for them, and willingly assumed their role responsibilities. However, in "early lineages," in which accelerated child-bearing resulted in early transitions to grandmotherhood and great-grandmotherhood, these lineages were "thrown off track," in that these women "did not expect, nor were they prepared for, the roles into which they had been propelled" (p. 205).

Life transition and daily stress research can also be applied to even younger ages. Research on adolescent development, for example, has highlighted the transition to middle or junior high school as a time of special significance for youth well-being. This transition has been linked to increases in psychological distress (Blyth, Simmons, & Carlton-Ford, 1983; Simmons, Rosenberg, & Rosenberg, 1973), and risky and aggressive behavior (Nansel, Haynie, & Simons-Morton, 2003; Pellegrini, 2002). As such, the life course model of life transitions and daily stress would allow researchers to illuminate micro-stressors and well-being processes, and their development over a period of dramatic change.

Conclusion

In this chapter we have documented the ways in which five main life course principles can be integrated into the study of life transitions and daily stress processes. Life transitions are often major, life-changing events requiring adaptation and causing depletion of individual psychological and physical resources that may result in stress. Transitions also may increase well-being to the extent that they bring new opportunities and desired social roles. Daily stressors, on the other hand, reflect the minor irritations and frustrations of daily life that may have a more proximal effect on well-being than major life transitions. In terms of their physiological and psychological effects, reports of life transitions can be associated with prolonged arousal, whereas reports of daily stressors can be associated with spikes in arousal or psychological distress that day. Both life transitions and daily stressors are embedded in multiple layers of temporal and social contexts that shape individual well-being. In this chapter we have presented a perspective on life transitions and daily stress processes by describing a model that links key principles of the life course to the study of life transitions and daily stress processes. By utilizing life course principles, we can better understand the opportunities, as well as vulnerabilities, that individuals experience as they undergo life transitions that are both important markers of development and important predictors of daily stress and well-being.

This approach relies on daily diary methodology to capture daily stress. Repeated measurements of *daily* stressful events, as well as health

behaviors, symptoms, and psychological well-being, increase ecological validity, reduce memory bias, and permit the dynamic assessment of stressor reactivity (i.e., within-person correlation of stressors and well-being). Thanks to new statistical approaches, such as multilevel modeling, it is possible to assess within-person stressor reactivity and between-person differences in stress reactivity. This statistical method can be used to examine how life transitions and the key principles of the life course perspective predict exposure and reactivity to daily stressors.

Using data from the NSDE, we have provided several examples linking life course principles to daily stress processes, showing how age, historic events, and birth cohort membership shape exposure and reactivity to daily stressors. In addition, we have demonstrated how the social context in terms of interpersonal tensions and caregiving status, as well as how perceptions of personal control, play important roles in shaping daily stress processes. The final set of analyses showed how the timing of the transition into retirement translated into different levels of daily well-being for men and women. These findings, we hope, will serve as a template for more analyses that combine life transitions and daily stress processes using a life course perspective.

The life course perspective reminds us of the importance of studying human development in context. This reminder is more important than ever as we move further into the 21st century, where we see the life course changing in several ways, with implications for the study of life transitions and daily stress processes. First, not only have parts of the life course been redefined (e.g., emerging adulthood, midlife), but time spent in major stages of the life course also have increased due in part to longer life expectancy and social changes (Moen, 2003). The major life transitions of adulthood, such as age at first marriage and first childbirth, have been rising since the 1960s (Knaub, Eversoll, & Voss, 1983) and have become dispersed over a broader age range. In comparison to the early 20th century, people are getting married and having their first child in their late 20s, which once was the period of career establishment (Knaub et al., 1983). Nor is the immediate transition from a single career to complete withdrawal from the labor force the norm any longer for most Americans. Workers are moving from one or several short-duration or part-time jobs (bridge jobs) between their full-time career employment and complete labor force withdrawal. These social changes present new challenges for researchers, as well as policymakers, in understanding how the timing of life transitions is changing and what the new norms determine what is deemed "early" or "late." We believe that linking the timing and transitions of the life course to the real-life, day-to-day experiences of individuals will help to illuminate their meanings and consequences for the well-being of individuals.

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CHAPTER 8

Conceptualizing and Measuring Trajectories

Linda K. George

The language of trajectories, pathways, and similar dynamic descriptors have become standard fare in life course research over the past quarter-century. The notion of studying life course patterns of change and stability over time has great appeal. And the increasing availability of longitudinal data covering large portions of the life course, as well as methods for acquiring reliable, albeit retrospective, life histories creates the data infrastructure required for life course research. Many sociological theories imply process; thus, trajectories can be important for theory development and hypothesis testing. Indeed, trajectories are arguably the premier tools for assessing the dynamics of change. Despite the obvious appeal of studying trajectories, one need not delve very deeply into the topic—as either an investigator or a consumer of research—to see that the intuitive lure of trajectory-based research is neither simple nor straightforward in practice.

The purpose of this chapter is to examine conceptualization and measurement of trajectories and the substantive implications—including the costs and benefits—of measurement choices. It is organized in five sections. The first section addresses the definition of trajectories and the importance of trajectories for two broad theoretical frameworks. The second section describes various ways of measuring trajectories. The third section provides empirical illustrations of how the multiple ways of constructing trajectories have been applied in life course research. The last two sections address emerging issues in trajectory

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