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Life Course Perspectives on Social Factors and Mental Illness

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Virtually all major issues in the study of mental health involve conceptualizing and modeling change. Social selection and social causation, estimating the effects of stress, identifying other antecedents of mental illness, examining the consequences of mental illness – these and many other topics require conceptualization of processes and analysis of longitudinal data. Despite the centrality of dynamic processes to our understanding of mental health and illness, most longitudinal studies span relatively short periods of time and focus on temporality as a prerequisite for causal inference.

Life course perspectives offer a complementary way of conceptualizing and modeling stability and change. The most obvious characteristic of life course research is the focus on longer periods of time than are characteristic of most longitudinal studies. Equally important, in life course research, temporality is the conceptual focus rather than primarily a methodological issue. A prime illustration of the difference in focus between most longitudinal studies and life course studies of mental illness is the issue of social causation and selection. A substantial body of research has focused on the extent to which social factors are causes or consequences of mental illness (e.g., Johnson, 1991; Ross & Mirowsky, 1995). Life course theorists, in contrast, rarely think in those terms. Rather, they are interested in the dynamic interplay between social factors and illness, typically seeking to trace temporal pathways. The pathways or trajectories often include lagged effects, reciprocal effects, and/or cyclical effects – temporal patterns that cannot easily be categorized as selection or causation effects.

The purpose of this chapter is to consider the cross-fertilization of life course research and the sociology of mental health and mental illness. The chapter begins with a brief review of the four major principles that underlie life course perspectives. Few empirical studies include attention to all four of these principles – but all life course studies focus on at least one of them. Most of the chapter is devoted to three major themes regarding temporality, social factors, and mental health or illness. The first, and most complex, focuses on the relationships between social factors and mental health over long periods of time and several specific research topics are reviewed. The second major theme is the dynamics of recovery and recurrence among the mentally ill. The third area is the social transmission of mental health problems

across generations. For each of these themes, the potential contributions of life course perspectives are highlighted, as are the ways that mental health research serves as a strategic site for applying and empirically testing life course principles. The chapter ends with a short section on a critical issue for future research.

It is prudent to note how the terms "mental health" and "mental illness" are used in this chapter. Although this field is typically referred to as social factors and mental health, almost all research focuses on mental health problems. Mental health problems are conceptualized and measured in a variety of ways, ranging from distress, to symptom scales that correspond to diagnostic entities (e.g., depression symptoms), to specific psychiatric disorders. There have been lively debates about the extent to which diagnostic categories are valid, discrete, and meaningful (e.g., Kessler, 2002; Mirowsky & Ross, 1989). This review covers research using the broad range of measures of mental health problems – discrete as well as continuous measures, diagnostic categories as well as distress. As discussed below, the use of diagnostic or other dichotomous measures of mental health problems is especially relevant for research that incorporates life course principles.

Life Course Perspectives: Key Principles

There is no unified theory of the life course – nor, as I have argued elsewhere, should there be. Life course perspectives can best to be used in conjunction with specific theories (George, 2003). That is, life course perspectives are best tested in the context of specific topics – topics for which the importance of long-term processes has been recognized and which offer theories with which life course principles can be integrated. As I argue throughout this chapter, research on mental health and mental illness is ideally positioned to profit from incorporation of life course principles and provides research questions and theories that are superbly suited for testing life course principles.

Although life course perspectives do not comprise an integrated theory, they share four core principles, each of which can augment our understanding of mental health.

Long-term Temporal Patterns. The first and most fundamental principle of life course perspectives is the need to examine temporality over long periods of time (Elder, Johnson, & Crosnoe, 2003). Indeed, although few studies can or should incorporate all four key life course principles, a focus on long-term temporal patterns is the defining characteristic of life course research.

Life course perspectives take a long view of biography, often covering decades or longer. Key assumptions of life course perspectives are that lives unfold over time in long-term pathways or trajectories; that the present cannot be understood without knowledge of the past, including the distant past; and that, in addition to the *content* of trajectories (e.g., marital histories, occupational careers), their temporal characteristics also are important (Settersten, 2006). Potentially important temporal characteristics include *length of exposure* (i.e., the extent to which time in a given state affects outcomes of interest), *sequencing* (i.e., the extent to which

the order in which events or exposures occur affects outcomes of interest), and *duration dependence* (i.e., the extent to which time in a given state alters the probability of movement to another state) (Alwin, Hofer, & McCammon, 2006).

Two primary types of data are used in life course research. Multiple measurements over long periods of time are, of course, preferred. Because of the large investments of time, money, and effort required for longitudinal studies that span large proportions of the life course, retrospective data also are frequently used. Retrospective data are inferior to prospective data in multiple ways (e.g., memory problems, "rewriting" the past). Nonetheless, techniques such as life history calendars (e.g., Scott & Alwin, 1998) can yield rich data about life course patterns. Also, the more objective (e.g., recall of dates of earlier marriages vs. recall of the quality of earlier marriages) and vivid (i.e., recall of sexual assault vs. recall of first kiss) the information sought, the more accurate the retrospective data.

A variety of modeling techniques are used to examine life course patterns: regression techniques in which factors measured at one point in time are used to predict outcomes observed later in time, path models that posit complex combinations of direct and indirect effects, survival or event history models that estimate "time till" transitions or other discrete outcomes, and growth curve models in which trajectories are the independent and/or dependent variables (e.g., trajectories of social support predicting trajectories of depressive symptoms).

As described in more detail in the next section of this chapter, there is substantial evidence that the cross-fertilization of this life course principle with key research questions in the sociology of mental health has considerable payoff. One of the most useful outcomes of this cross-fertilization has been a reframing of some key theories of mental health. For example, taking a long-term perspective renders the social selection versus social causation debate essentially moot. Rather than focusing on reapportioning variance to selection and causation factors, the principle of temporality focuses attention of delineating the multiple pathways that do and do not result in mental health problems (for a more detailed discussion, see George, 2003). The stress exposure versus stress vulnerability debate can also be reframed when viewed from the perspective of the rates of growth in both stressors and mental health outcomes (George & Lynch, 2003).

The Intersection of Biography and History. Life course perspectives attend to elements of context that are often ignored or underemphasized by other conceptual frameworks. One of those is historical context. Elder's seminal *Children of the Great Depression* (1974), generally recognized as the work that first articulated life course perspectives, examined the effects of an historical event on lives in the short- and long-term, including the risk of mental health problems. Historical context takes multiple forms – not only highly visible events such as the Great Depression and wars, but also historical trends (e.g., increasing divorce rates) and changes in public policy (e.g., the deinstitutionalization of mental patients during the 1970s and 1980s). Not all life course studies focus specifically on historical context. Nonetheless, this principle is intended to remind all investigators that their

data are historically embedded and that societal norms and conditions provide opportunities and constraints that differ across historical time.

A variety of important issues in mental health research provide opportunities to test hypotheses about the effects of historical context. One example is possible historical changes in the nature or strength of the relationships between marital status and mental health. There have been dramatic changes in the average age of first marriage, the risk of divorce, and family structure during the past half century. Whether these changes have altered the relationships among marital status, marital dissolution, and mental well-being have not been adequately explored. Similarly, the labor market has been dramatically restructured as a result of globalization, the demise of the working class in the U.S., the changing social contract between employers and employees, and the transition to a post-industrialized service economy. It has long been known that stable employment, especially in jobs on the high end of the occupational hierarchy, is a positive predictor of mental health. It is not known whether the structural transformations of the labor market have affected rates of mental health problems (albeit, see Dooley, Prause, & Ham-Rowbottom, 2000, for a study of the effects of underemployment – which has reached previously unparalleled levels – on mental health).

Linked Lives. A third principle of life course perspectives is awareness that individual lives are interdependent and socially embedded. Although much sociological research focuses on social relationships, life course perspectives typically view social ties in broader terms. Put simply, life course perspectives contend that there is virtually no outcome of interest (e.g., health, SES) that is *not* affected by the social networks within which individuals are embedded. Life course scholars also argue against investigations in which social relationships are restricted to those in a given domain (e.g. restricting studies of occupations to social relationships on the job). As is true for historical context, social relationships underlie and affect all areas of life, providing both opportunities for and constraints on individuals.

The focus on linked lives meshes nicely with several key issues in the sociology of mental health. Examples include the importance of social support as a buffer of stressful experiences, the caregiving role that family members must frequently play when loved ones are mentally ill, and the mental health consequences of loss of significant others via death or estrangement and conflicted relationships.

Human Agency. A final life course principle focuses on human agency – on the long-term consequences of individual decisions and actions. Social science disciplines, of course, recognize the need to understand the relative roles of social determinism and human agency – and the formidable challenges in making such determinations. Life course perspectives add some subtle facets to this quest. First, life course perspectives focus more on within-person changes over time than do most sub-fields in the social sciences. Life course studies typically examine between-person patterns as well, but the emphasis on long-term patterns and trajectories highlights alternate pathways that are shaped by individual choices as well as by contextual opportunities and constraints. One important element of this

principle is determining how choices made earlier in life (e.g., whether to attend college, whether to marry) have long-term consequences. Second, as noted above, life course scholars typically avoid the terms selection and causation, focusing instead on the dynamic interplay of social factors. Both "selection" and "causation" connote processes outside the individual's control, thus underemphasizing the role of human agency (e.g., social scientists talk about being *"selected"* into marriage or a specific occupation – not about individuals *deciding* to marry or pursue a specific career). Finally, although the effects of human agency and social determinism cannot be definitively established, simply highlighting human agency as a core principle alters investigators' interpretation of research findings.

Relatively little research to date has examined the effects of long-term patterns of human agency on mental health outcomes. An example of life course research that examines the impact of individual decision-making on mental health outcomes is Elder's studies of individuals who made the transition to adulthood during World War II. The decision of World War II veterans to use the GI Bill to obtain advanced education proved to be a milestone in terms of both socioeconomic achievements and mental health throughout adulthood (e.g., Laub & Sampson, 2005). Clearly, however, this is a component of the cross-fertilization of life course and mental health research that merits increased attention.

Mental Illness: Taking the Long View

As noted above, the defining characteristics of life course research are (a) examining long-term patterns of change and stability and (b) paying explicit attention to temporal characteristics. The greatest volume of research on mental health problems that incorporates and/or speaks to life course perspectives focuses on long-term patterns of social risk factors and their impact on mental health outcomes. In this section, three topics that take the long-view in understanding mental health are examined.

Mental Health Across the Life Course

Ideally, one would like to begin with an overview of patterns of mental health problems across the life course. Confident conclusions about such patterns would require prospective data that span the life course. In addition, because historical context is likely to affect rates of mental health problems and, perhaps, their timing within the life course, long-term prospective data for multiple cohorts would be required. Unfortunately, such data do not exist. Findings from two long-term longitudinal studies are reviewed below. The quality of these studies, however, does not permit confident or generalizeable conclusions. Beyond those studies are two alternatives: (1) postponing consideration of this issue until adequate data are available or (2) examining age differences (which confound age and cohort) in mental health problems, keeping in mind the limitations of cross-sectional comparisons. On the assumption that cross-sectional data are, at minimum, a source of hypotheses to be tested on longitudinal data, age differences in mental health problems also are reviewed.

Long-term Longitudinal Studies. Elder, Clipp, and colleagues used data from the Terman Study of men to examine the short- and long-term consequences of World War II combat experience (compared to non-combat experience and non-military service) on physical and mental health (Clipp, Pavalko, & Elder, 1992; Elder, Shanahan, & Clipp, 1994). The Terman Study began in 1921–22, recruiting boys and girls with high IQ scores who were age 3–19 at baseline. Data were collected at 13 irregular intervals using multiple modes of inquiry; the last time of measurement was 1991–1992. Clipp et al. (1992) identified six trajectories of mental health over the course of adulthood: stable high mental health, stable low mental health, increasing mental health over time, decreasing mental health over time, decreasing mental health followed by increasing mental health, and a highly fluctuating pattern. The most prevalent pattern was stable high mental health, followed by increasing mental health over time. Although these life course patterns and their distributions accurately describe the sample, the findings cannot be generalized to the population because they applied only to men and the sample was non-representative in intellectual abilities. In addition, measurement of mental health varied over time; Clipp et al. developed their trajectories using ratings based on review of information that varied widely across times of measurement. Demonstrating that multiple trajectories are needed to adequately describe long-term patterns of mental health is the major contribution of this study.

Vaillant and colleagues also examined the long-term consequences of combat exposure on the mental health of male World War II veterans, relative to peers who had not experienced combat. Data for this study were from a study of male Harvard undergraduates that began in 1940–41. Data were collected annually through 1946 and then biennially every two years for 50 years or until death, typically by mail survey. For the sample as a whole, mental health problems were relatively rare with the exception of alcoholism (Cui & Vaillant, 1996). Compared to their peers, men who experienced combat reported much higher rates of PTSD symptoms, both immediately after the war and throughout old age (Lee, Vaillant, Torrey, & Elder, 1995). PTSD symptoms were especially likely among men who experienced combat and had pre-military mental health problems. This study has the same limitations as those based on the Terman men: all male, non-representative sample and methodologically questionable assessments of mental health problems. It also highlights some of the complexities of social selection and causation in that it is difficult to untangle the independent effects of pre-military mental health problems and combat exposure on subsequent mental health.

Age Differences in Mental Health Problems. Two studies examined age differences in depressive symptoms during adulthood in substantial detail (Mirowsky & Ross, 1992; Schieman, Van Gundy, & Taylor, 2002). Both studies are based on representative data from community samples. Findings are both congruent and discrepant across the two studies. Mirowsky and Ross (1992) report that middle-aged adults report fewer depressive symptoms, on average, than young and old adults. Schieman et al. (2002) report that average levels of depressive symptoms decrease across age groups and are lowest among older adults.

Both studies include detailed analyses to identify the extent to which differences across age groups are due to compositional differences on social factors known to predict depression. Mirowksy and Ross report that the lower level of depressive symptoms among middle-aged adults is largely explained by the fact that, compared to their younger and older counterparts, middle-aged people are more economically advantaged, are more likely to have stable marriages and jobs, are relatively free of physical health problems, and have higher levels of perceived personal control. They conclude that sense of control is the major proximal predictor of depressive symptoms. Schieman et al. report that the lower levels of depression reported by older adults primarily reflect the fact that older adults report fewer economic hardships, fewer interpersonal conflicts, and greater religiosity than young and middle-aged adults. Similar to Mirowsky and Ross, Schieman et al. found levels of mastery to be lowest among the oldest age group, pointing out that the inverse relationship between age and depression is somewhat suppressed by sense of mastery. Without longitudinal data across the life course, it is difficult to reconcile the age differences reported by Mirowsky and Ross and Schieman et al. Note, however, that these are bivariate differences. The compositional factors that *explained* observed age differences in levels of depression were remarkably similar across the two studies.

Epidemiologic data on age differences in psychiatric diagnoses is available from two primary sources: The National Comorbidity Survey (NCS) (e.g., Kessler, McGonagle, Zhao, Nelson, Hughes, et al., 1994) and the Epidemiologic Catchment Area (ECA) studies (e.g., Robins & Regier, 1991). The NCS has two advantages over the ECA: the data are more recent and are based on a nationally representative sample. ECA data are from five locally representative areas and have been extrapolated to generate national estimates. Unfortunately, however, the NCS sampled only adults age 18–64 at baseline. Therefore, age differences in psychiatric disorder observed in the ECA are reviewed here. Although there are small differences across diagnoses, the general pattern for Axis I psychiatric disorders is a linear decrease across age groups (Robins & Regier, 1991). That is, the prevalence of mental illness peaks during young adulthood and is lowest among older adults. Although this pattern is only partially compatible with age distributions of social resources (especially income and physical health), it is congruent with selective mortality. Mental illness is a risk factor for mortality. Consequently, to the extent that the most severely mentally ill die before old age, it is not surprising to find a relatively healthy group of late life survivors. Mortality selection also is more compatible with the age differences in depressive symptoms reported by Schieman et al. than those observed by Mirowsky and Ross.

Life course patterns of mental health is an ideal topic for the cross-fertilization of life course perspectives and the sociology of mental health. The latter focuses attention on the distributions of stressors and resources that either protect individuals or put them at increased risk for mental illness. Life course perspectives remind us that these risk and protective factors are not consistent across the life course and that age changes in mental health may reflect these temporal patterns.

The Persisting Effects of Early Traumas and Adversities

The effects of traumas and adversities experienced early in the life course on mental health at later ages is arguably the most important contribution of life course perspectives to mental health research – certainly the sheer volume of studies is largest for this topic. Two related, but distinct bodies of research have emerged. One focuses on childhood traumas; the other on late adolescence and early adulthood.

Childhood Traumas and Adversities. A variety of childhood traumas and adversities substantially increase the risk of later mental health problems. Childhood traumas are typically defined as occurring before the age of 11, but some investigators set the boundaries a year or two earlier or later. Childhood traumas significantly related to mental health problems in middle and later adulthood include parental death, parental divorce, physical abuse, and sexual abuse. There is strong and consistent evidence that parental divorce during childhood is associated with a variety of mental health outcomes, including general distress, depressive symptoms and disorder, and anxiety symptoms and disorders (e.g., Cherlin, Chase-Lansdale, & McRae, 1998; Harris, Brown, & Bifulco, 1990; McLeod, 1991; O'Connor, Thorpe, Dunn, & Golding, 1999; Ross & Mirowsky, 1999). Evidence for parental death, however, is mixed. Some studies report that parental death at an early age is associated with increased risk for mental health problems in adulthood (e.g., Hallstrom, 1987; Harris et al., 1990); other studies fail to observe a relationship between parental death and adult mental health (e.g., Tweed, Schoenbach, George, & Blazer, 1989).

Childhood abuse/neglect also is associated with mental health problems during adulthood (e.g., Horwitz, Widom, McLaughlin, & White, 2001; Kessler & Magee, 1994). Childhood sexual assault is an especially potent harbinger of mental health problems, usually PTSD and/or depression, both immediately after the assault and throughout adulthood (e.g., Roberts, O'Connor, Dunn, & Golding, 2004; Winfield, George, Swartz, & Blazer, 1990; Yama, Tovey, & Forgas, 1993). Indeed, even if children are not victims of abuse or assault, witnessing such aggression has persisting effects on adult mental health (e.g., Kessler & Magee, 1994; Shaw & Krause, 2002 – the latter demonstrates that effects persist 70 years after witnessing the violence).

The effects of childhood poverty/low SES on adult mental health also have been examined. Most, but not all, studies report the childhood economic deprivation is a risk factor for adult mental illness (e.g., Gilman, Kawachi, Fitzmaurice, & Buka, 2003; Hallstrom, 1987; Landerman, George, & Blazer, 1991), but the magnitudes of these relationships are smaller than those for childhood traumas. Recent studies also report that residential instability and living in unstable, poor, and disorganized neighborhoods during childhood increase the odds of mental health problems in adulthood (Gilman et al., 2003; Wheaton & Clarke, 2003).

For life course scholars, establishing relationships between childhood events and later mental health problems is only the first step. Equally, if not more, important is identification of the pathways and mechanisms that account for the persisting effects of childhood adversities – and that result in subsequent mental

health problems for some, but not all, who experience such adversities. Much has been learned about the pathways by which childhood traumas increase vulnerability to mental health problems decades later. Childhood traumas and adversities substantially reduce individuals' socioeconomic achievements and ability to develop and sustain high-quality social relationships (e.g., Harris et al., 1990; McLeod, 1991; O'Connor et al., 1999; Ross & Mirowsky, 1999; Shaw & Krause, 2002) which, in turn, increase vulnerability to mental health problems. Another pathway is between childhood adversities and higher exposure to stressful life events during adulthood (e.g., Horwitz et al., 2001; O'Connor et al., 1999). The mechanisms by which early stress produces high levels of stress decades later remain unidentified, but the relationship is a strong one.

It should be noted that appropriate resources can short-circuit the relationships between early adversities and later mental health problems. The potential negative effects of parental divorce, for example, can be prevented if parent-child relationships remain good after the divorce, if the child receives adequate parental supervision, and if the custodial parent is not severely economically deprived (e.g., Harris et al, 1990; Landerman et al., 1991).

Research on the persisting effects of childhood traumas reviewed thus far focused on the "main effects" or "direct effects" of early adversities on subsequent mental health. There is another way in which childhood traumas operate to increase the risk of mental health problems later in life. Several investigators report that severe childhood stressors interact with recent life stress to multiplicatively increase the likelihood of psychiatric symptoms and disorders (Kraaij & Wilde, 2001; Landerman et al., 1991; O'Neil, Lancee, & Freeman, 1987). In a related but distinct vein, Davies, Avison, and McAlpine (1997) found that higher rates of depression among single mothers than married mothers were partially explained by single mothers' higher levels of childhood adversity. These results suggest that the early experience of severe stress may create a lifelong vulnerability to stress, such that lower levels of adult stress will trigger mental health problems.

Adult Traumas. Traumas experienced after childhood also can be potent risk factors for mental health problems both immediately after the trauma and many years later. The most frequently studied adult trauma is combat exposure during war. By now, veterans of three major wars have been studied over varying lengths of time: World War II, Korea, and Vietnam. There is strong and consistent evidence linking combat exposure to subsequent mental health problems, including PTSD, depression, anxiety, and substance abuse problems (Clipp et al., 1992; Cui & Vaillant, 1996; Elder et al., 1994; Kulka, Schlenger, Fairbank, Hough, Jordan, Marmar, & Weiss, 1990; Lee et al., 1995). Moreover, the increased risk of mental health problems among combat veterans remains as much as 50–60 years later.

Pathways between combat exposure and subsequent mental health problems have been identified. Conditions after discharge from the military are consequential. Veterans who are able to find employment quickly, who obtain higher status jobs, and who marry adjust more quickly to civilian life and are at lower risk of mental health problems (e.g., Elder et al., 1994; Kulka et al., 1990). In addition, the accumulation

of social resources over time lessens the risk mental distress and disorder during the decades following combat exposure. In addition to social bonds with family and friends, Elder and Clipp (1988) report that continued postwar contact with the "comrades" with whom combat was shared also decreases the risk of postwar mental illness. There also is evidence of "selection effects:" men who experienced mental health problems prior to combat exposure were at especially high risk of psychiatric symptoms and disorder both immediately after the war and decades later (Elder et al., 1994; Lee et al., 1995). Other selection effects influence risk of combat exposure. Men with lower levels of education and with pre-existing psychiatric symptoms and/or adjustment problems were more likely than their advantaged peers to experience combat. Thus, men with the fewest resources with which to cope with combat trauma were the most likely to experience it.

It should be noted that military experience also brought life course advantages to some veterans. In particular, men for whom military service interrupted long-term patterns of deviance (Laub & Sampson, 2005) and those who took advantage of the GI Bill to obtain higher education that was otherwise unavailable to them (Elder et al., 1994; Laub & Sampson, 2005) experienced fewer psychiatric problems than men who did not use their military experience to accumulate economic and social resources. Note, however, that all veterans, whether or not they were exposed to combat, were eligible for the GI Bill. The proportion of veterans who reaped advantages from military service and also experienced combat is unknown.

Stress Accumulation. Recently, the conceptualization and measurement of stress has broadened beyond stressful life events and chronic stressors to incorporate the individual's stress history. Cumulative stress or adversity (Turner & Lloyd, 1995), lifetime history of stress (Wheaton, 1996), and operant stress (Turner & Avison, 1992) all broaden the scope of stress measurement and include major lifetime traumas regardless of their recency. These more comprehensive stress measures are (a) more strongly related to mental health outcomes and (b) better able to explain status differences in mental health problems than are measures restricted to the present and recent past (e.g., Turner & Avison, 2003; Turner & Lloyd, 1999). Note, however, that summing lifetime traumas does not permit fine-grained analyses of the impact of timing, sequencing, and other specific temporal patterns.

Another method of assessing stress accumulation is to use growth curve models to examine the effects of "growth" of stress over time on the "growth" of mental health problems. In previous studies, Scott Lynch and I were able to demonstrate that (a) growth in loss-related stressors predicted growth in depressive symptoms in a sample of older adults (Lynch & George, 2000), (b) that the usual social factors used as controls in stress research (e.g., SES, demographic characteristics) predicted baseline levels of stress and depression but did not predict growth in either (George & Lynch, 2003; Lynch & George, 2000), and (c) that African Americans reported greater levels of growth in both stress and depression than whites (George & Lynch, 2003). We also discuss the implications

of using growth curve models for reframing the issue of the differential effects of stress exposure and stress vulnerability.

Stress accumulation also is an ideal site for the cross-fertilization of mental health theory and life course perspectives. The concept of cumulative stress or adversity is highly compatible with the theory of cumulative advantage/disadvantage, which has become a staple of life course research (e.g., Dannefer, 2003; O'Rand, 2002). Overall, the stress paradigm has proven to be an especially useful and straightforward theoretical framework for incorporating life course principles.

Life Course Milestones and Turning Points

Most of the statistical techniques used in the social and behavioral sciences estimate the linear relationships between variables. These techniques often accurately model hypothesized relationships (e.g., a "dose-response" relationship between stress and depression). But not all research questions imply linear relationships and caution is needed to insure that linear models are not estimated in a pro forma way.

Some individuals experience events or conditions that are milestones or turning points in the life course. Conceptually this implies that certain events or conditions literally change the direction of life course pathways (Nagin, Pagani, Tremblay, & Vitaro, 2003; Ronka, Oravala, & Pulkkinen, 2003). Statistically, milestones and turning points are observed as deflections which change either the direction or rate of change in trajectories (Haviland & Nagin, 2005; Seidman & French, 2004).

Mental health problems experienced early in the life course can be milestones or turning points, resulting in a variety of alterations in the life course. This is another topic for which dichotomous measures of mental illness are especially salient. A milestone implies a discrete change in status or direction. The only way to study mental illness as a life course milestone is to identify the times at which individuals transition into mental illness and trace subsequent alterations in their lives. Two primary types of turning points have been studied to date.

The Consequences of Early Mental Illness for Adult Achievements. There is substantial evidence that mental health problems during childhood, adolescence, and/or early adulthood are associated with poor social and economic achievements in later adulthood. Early onset mental health problems predict lower educational attainment (e.g., Chen & Kaplan, 2003; Gore & Aseltine, 2003; Woodward & Fergusson, 2001) and lower occupational status and income (Chen & Kaplan, 2003; Wiesner, Vondracek, Capuldi, & Porfeli, 2003). Adult social bonds also are negatively affected; early onset psychiatric disorder predicts decreased likelihood of marriage, especially for persons with psychotic disorders (e.g., Walkup & Gallagher, 1999); earlier age of marriage for persons with affective and substance abuse disorders (e.g. Forthhofer, Kessler, Story, & Gottlib, 1996), earlier parenthood (e.g., Woodward & Fergusson, 2001), and higher rates of divorce (e.g., Wade & Pevalin, 2004).

The findings cited above are primarily from longitudinal studies that followed samples from adolescence through early to mid-adulthood. Although important,

these studies cannot inform us about whether later onset of mental illness has similar effects on life course accomplishments. Logically, earlier onset would be more likely to decrease later achievements because both socioeconomic achievements, especially educational attainment, and family formation are typically established during young adulthood. Turnbull and colleagues compared individuals who experienced early (age 25 and younger) and later (age 26 and older) onset. They found that SES and family characteristics among those with late onset were no different from age peers who had no history of psychiatric disorder. Those with early onset, however, had significantly lower levels of SES and poorer family outcomes than their age peers who had no history of psychiatric disorder (Turnbull, George, Landerman, Swartz, & Blazer, 1990). Freud is credited with saying that the major tasks of adulthood are to love and to work. Clearly, early onset of mental health problems places successful fulfillment of those tasks at risk and can be a turning point in the life course.

The Consequences of Early Mental Illness for Adult Mental Health. Early onset of mental health problems also is a powerful predictor of recurrent mental health problems throughout adulthood. For example, Woodward and Fergusson (2001) report that anxiety disorder during adolescence is the strongest predictor of anxiety disorder in early adulthood. Similarly, Kim-Cohen and colleagues (Kim-Cohen, Caspi, Moffitt, Harrington, Milne, & Poulton, 2003), using data from a 15 year longitudinal study, report that 75% of the adults who experienced psychiatric disorders had also experienced mental illness as adolescents. Using data from the long-term study of Harvard undergraduate men, Vaillant and colleagues report that depression and excessive alcohol use during young adulthood are associated with increased risk of depression at ages 47 (Long & Vaillant, 1985) and 65 (Vaillant & Vaillant, 1990).

Delinquency during adolescence also increases the risk of multiple psychiatric disorders during adulthood. Using data from a sample of British women who were followed from birth though age 52, Kuh, Hardy, Rodgers, and Wadsworth (2002) report that adolescent delinquency predicted major depressive disorder in middle age. Similarly, Hagan and Foster (2003) report strong associations between adolescent delinquency and adult depression for both men and women and alcoholism for men. In both studies, the effects of juvenile delinquency were estimated with a wide variety of other predictors of mental health problems statistically controlled (e.g., educational attainment, adult SES, marital status). These authors posit that juvenile delinquency is a stronger predictor of depression and substance abuse than of antisocial personality, suggesting that what is called "conduct disorder" in psychiatric nomenclature is a generalized risk factor for a variety of mental health problems during adulthood.

There are undoubtedly multiple reasons for the strong relationships between early and later psychiatric problems. Genetics may play a role, although the often-observed shift from juvenile delinquency to affective or substance use disorders during adulthood seems to contradict the theory that specific genes lead to family histories of specific disorders. Unmeasured social factors may partially account for

the strength of these associations. Obvious social risk factors (e.g., SES, demographic characteristics) have been controlled in the studies cited above, but those risk factors were measured at a single point. It is possible that more fine-grained patterns of change and stability would partially explain the pathways from early to subsequent mental health problems. Other scholars hypothesize that both early onset psychiatric problems and other adversities experienced early in life change brain anatomy and chemistry in ways that sustain vulnerability to mental health problems over time (e.g., Schulenberg, Sameroff, & Cicchetti, 2004).

It also is important to recognize that early adjustment problems, especially juvenile delinquency, often do not lead to mental health problems during adulthood. Two studies demonstrate this particularly well. In a series of research papers (e.g., Laub, Nagin, & Sampson, 1998; Sampson & Laub, 1990) and a book (Laub & Sampson, 2003) based on a sample of delinquent males born in the 1920s who were studied intermittently until age 70, Sampson and Laub demonstrate that the accumulation of social resources, especially stable jobs and supportive marriages, inhibit adult crime, psychiatric symptoms, and substance abuse/dependence. Long and Vaillant (1985) studied a sample of inner-city men from the time they were children until they were age 47. During childhood, boys from unstable homes exhibited substantially higher rates of delinquent behavior and psychiatric symptoms than boys in stable homes. By age 47, however, psychiatric and substance use symptoms were unrelated to childhood family stability. Both studies were based on high-risk samples where elevated rates of psychiatric problems during adulthood would be expected as a result of socioeconomic deprivations and high rates of delinquency. In both samples, however, surprisingly high proportions of study participants were able to overcome their early adversities and be productive and healthy adults. Thus, multiple trajectories describe both samples, with some pathways associated with continued psychiatric vulnerability during adulthood and other pathways demonstrating impressive resilience. Although early onset of psychiatric problems is a far from perfect predictor of mental health problems later in the life course, it is clear that early onset can be a milestone or turning point associated with chronic or recurrent psychiatric problems across adulthood.

The cross-fertilization of life course perspectives and the sociology of mental health is ripe for furthering our understanding of the conditions under which mental illness does and does not become a life course milestone. Although life course perspectives assume a link between past and current statuses, mental health theory informs us about the most likely pathways linking early mental illness to later achievements and mental health.

The Dynamics of Recovery and Recurrence of Mental Illness

Social scientists have paid little attention to the role of social factors in recovery from and recurrence of psychiatric disorder. A primary reason for this is that, as described above, recovery and recurrence necessitate conceptualizing mental

health problems in terms of discrete categories representing the presence or absence of illness. Nonetheless, two social factors are strongly implicated in patterns of recovery from and recurrence of psychiatric disorders.

Most research examining recovery and recurrence of mental illness has focused on major depressive disorder (MDD). MDD is largely a chronic or episodic disease. Some individuals experience a single episode of MDD, recover, and never experience a recurrence, but this is rare – and is especially rare in the absence of sustaining a maintenance level of psychotropic medication (Geddes, Carney, Davies, Furuhawa, Kupfer, Frank, & Goodwin, 2003). Recovery from MDD exhibits a clear pattern of duration dependence. Specifically, for approximately one year after the onset of MDD, the odds of recovery increase. After a year, the odds of recovery steadily decrease, signaling a pattern of chronic depressive disorder. Evidence is quite consistent: 50% or fewer of MDD patients will recover within a year (e.g., Bosworth, Hays, George, & Steffens, 2002; Keller, Shapiro, & Lavori, 1982). Most people who recover from MDD will experience a recurrence. Recurrence also exhibits a pattern of duration dependence, although it is more variable than the pattern for recovery. Research evidence suggests that between one-third and one-half of recovered MDD patients will experience recurrence within two years and fully 85% will experience recurrence within 15 years (Mueller, Leon, Keller, Solomon, Endicott, Coryell, Warshaw, & Maser, 1999).

Two issues merit mention at this point. First, the vast majority of studies examining recovery from and recurrence of MDD are based on clinical samples. But evidence suggests that only about half of the people who experience MDD receive treatment for it (e.g., Kessler et al., 1994). Recovery rates in the three community-based studies available are generally consistent with those reported in clinical samples (Honkalampi, Hintikka, Haatainer, Koivamma-Honkanen, Tanshanen, & Vinamaki, 2005; McLeod, Kessler, & Landis, 1992; Pevalin & Goldberg, 2003). Recurrence rates were examined in two of these studies and varied widely Honkalampi et al., 2005; Pevaline & Goldberg, 2003). Overall, however, almost all that is known about the "natural history" of MDD is based on clinical samples and may not apply to untreated cases.

Second, most studies of the course and outcome of MDD (and other psychiatric disorders) cover relatively short periods of time (from 6 months to four years), although a few studies are based on data covering decades. The question arises: Should relatively short-term studies of recovery and recurrence be viewed as life course research? Technically, of course, the answer is no. Because both complex temporal processes and the effects of social factors are so prominent, however, these studies demonstrate much of the logic of life course research despite their shorter than desirable time frames.

The Role of Social Support in Recovery and Recurrence

George and colleagues were among the first to demonstrate that social support is a potent predictor of recovery from MDD in a clinical sample (George, Blazer, Hughes, & Fowler, 1989). Since then, a myriad of clinical studies, in the U.S. and

other countries, and covering intervals ranging from three months to five years have reported that high levels of social support predict higher odds of recovery from MDD and shorter time until recovery (e.g., Bosworth et al., 2002; Bosworth, McQuoid, George, & Steffens, 2002; Lara, Leader, & Klein, 1997; Nasser & Overholser, 2005; Steffens, Pieper, Bosworth, MacFall, Provenzale, Payne, Carroll, George, & Krishnan, 2005). Social support also increased the odds of recovery from MDD in three community studies: a British study spanning 8 years (Pevalin & Goldberg, 2003), a one-year U.S. study (McLeod et al., 1992, and a two-year longitudinal study of women in New Zealand (Honkalampi et al., 2005).

Social support is a multidimensional construct and there are multiple conceptualizations of its relevant dimensions. Most investigators, however, concur that two major dimensions are perceived social support and instrumental support. Perceived social support refers to the individual's subjective assessment of the adequacy of the quantity and quality of support available. Instrumental support refers to tangible (e.g., help with shopping or housework) and intangible (e.g., provision of advice) forms of assistance received from family and friends. Research on the role of social support in recovery from MDD consistently finds that perceived social support has the strongest effects on recovery (e.g., George et al., 1989; Lara et al., 1997; Nasser & Overholser, 2005; Steffens et al., 2005) results for instrumental support are mixed (e.g., George et al., 1989; Hays, Steffens, Flint, Bosworth, & George, 2001).

The strong relationships between perceived social support and recovery from MDD pose a methodological challenge. The general assumption is that social support is independent of MDD and, thus, is a resource that facilitates recovery. An alternate hypothesis, however, is that depression causes negative perceptions of life in general and social support in particular, confounding the two phenomena. A number of studies tackled this issue directly, using a variety of methods including time series analysis and patterns of interaction (Blazer & Hughes, 1991; George et al., 1989; Steffens et al., 2005). Results indicate that perceived social support is distinct from depressive cognitions, permitting confident conclusions that high levels of perceived social support facilitate recovery from MDD.

It is reasonable to hypothesize that loss of or reductions in social support might also predict recurrence of MDD. Unfortunately, I am aware of no studies that have tested this hypothesis—largely, I suspect, because loss of significant others is studied as a stressor rather than as a loss of social support. This is an important topic for future research, in part because there is some evidence that chronic and recurrent depression leads, over time, to reductions in social support from family and friends (e.g., Holmes-Eber & Riger, 1990).

Another neglected dimension of the effects of social relationships on recovery and recurrence of MDD and other psychiatric disorders is conflict and negative interactions with significant others. Negative interactions with significant others are significant predictors of a variety of health outcomes in non-clinical studies: physical symptoms (Edwards, Hershberger, Russell, & Markert, 2001), incidence of the common cold (Cohen, 2004), subjective well-being (Rook, 1984), psychological distress (Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005), and depressive

symptoms (Krause & Rook, 2003). I am aware of only one study, however, that examined the effects of negative social interaction on recovery from MDD. McLeod and colleagues (1992) found that both conflicted relationships with friends and negative reactions from one's spouse significantly increased time to recovery from MDD. In a similar vein, George et al. (1989) found that perceived social support was a strong predictor of recovery from MDD, but married MDD patients were less likely to recover than unmarried patients. We speculated that the marriages of depressed patients were more a source of stress than of support.

Sociologists who study mental health have much to offer to our understanding of the factors associated with recovery and recurrence of mental illness. The sociology of mental health offers a broad range of potential risk and protective factors that have not yet been adequately examined in relation to the dynamics of mental illness. Because the "natural history" of MDD and other psychiatric disorders spans long periods of time, life course principles also should be incorporated. This important opportunity for cross-fertilization will remain unfulfilled, however, unless sociologists are willing to employ dichotomous measures of being "in" and "out" of illness episodes.

The Role of Stress in Recovery and Recurrence

Research evidence concerning the role of stress in recovery from and recurrence of MDD is inconsistent. I am aware of only two studies in which stressful life events were observed to delay recovery from MDD. Bosworth and colleagues followed patients with coronary artery disease for a year. They report that stressful life events over that interval predicted both the onset of MDD and decreased rates of recovery among those with MDD (Bosworth, Steffens, Kuchibhatla, Jiang, Arias, O'Connor, & Krishnan, 2000). Similarly, Pevalin and Goldberg (2003) reported that, over 8 years, stressful life events reduced the odds of recovery from MDD in their British community-based study. In contrast, George and colleagues (1989) report that negative life events were unrelated to the odds of recovery in their clinical sample. Clearly this issue merits additional research.

Research on the role of stressors (typically stressful life events) in recurrence of MDD has sparked considerable controversy. First, evidence has been mixed, with some studies reporting that stress significantly increases the likelihood of recurrence (e.g., Daley, Hammen, & Rao, 2000; Frank, Tu, Anderson, & Reynolds, 1996), and other studies reporting no significant relationship between stressors and recurrence (e.g., Kendler, Thornton, & Gardner, 2000; Lewinsohn, Allen, Seeley, & Gotlib, 1999).

Additional complexities emerge when investigators examine whether stress is *differentially important* for the onset of first vs. recurrent episodes. Recently, the "kindling hypothesis," which had been observed in neurological investigations, primarily animal studies, caught the attention of psychiatrists and psychologists (Post, 1992). In essence, the kindling hypothesis posits that powerful predictors of the onset of a chronic or episodic illness will be less potent predictors of recurrences and/or increasing severity of illness (Hlastala, Frank, Kowalski, Sherrill, Tu, et al.,

2000; Segal, Williams, Teasdale, & Gemar, 1996). A couple dozen studies have examined whether the relationship between stress and depression exhibits a kindling pattern – that is, whether stress is a more powerful predictor of first-episode MDD than of recurrences of MDD. Most studies are between-persons designs in which risk factors are compared across groups of first-episode and recurrent-episode MDD patients. Kendler and colleagues, however, followed nearly 2,400 female twin pairs for nine years and were able to perform within-person analyses of first and recurrent episodes of MDD (Kendler et al., 2000) – indeed, they observed as many as nine recurrences. Regardless of research design, findings demonstrate that stressors are stronger predictors of first-episode MDD than of recurrent MDD (see Mazure, 1998 and, especially, Monroe & Harkness, 2005, for superb reviews).

Given the consistency of findings, controversy about the kindling hypothesis is not based on empirical evidence; rather, it is interpretation of the findings that is disputed. In essence, two positions have emerged. One group of scholars interprets the weaker effects of stress on recurrent than first-episode MDD as evidence that major depression usually originates (i.e., first episode) when external demands overwhelm the instrumental, cognitive, and affective capacities of the individual. Recurrent episodes, in contrast, are generally triggered by internal dysfunction. In essence, over time, MDD becomes a more autonomous and self-starting disease (e.g., Farmer, Harris, Redman, Sadler, Mahmood, & McGuffin, 2000; Kendler et al., 2000; Lewinsohn et al., 1999). Monroe and Harkness (2005) label this the *stress autonomy model*. Another group of investigators interpret the evidence much differently, hypothesizing that individuals become more vulnerable to recurrence with increasing numbers of previous episodes. They interpret the weaker associations between stress and recurrent as compared to first-episode depression as evidence that, as recurrences cumulate, lower levels of stress are required to trigger recurrence (e.g., Brilman & Ormel, 2001; Hammen, Henry, & Daley, 2000). Monroe and Harkness term this the *stress sensitization model*. It is interesting to note that the authors of both systematic reviews of the kindling hypothesis and MDD favor the stress sensitization model, although they also acknowledge that research to date cannot adjudicate between the two models (Mazure, 1998; Monroe & Harkness, 2005).

Two implications of the kindling hypothesis debate are especially relevant. First, the question of whether individuals become increasingly sensitive to lower levels of stress over time is a life course question. Social scientists are already working with concepts such as cumulative stress to estimate the effects of lifetime stress on mental health. It also would be useful to determine whether, as stress cumulates over the life course, less severe forms of stress are sufficient to trigger mental distress and/or illness. Evidence generated by studies that had nothing to do with stress sensitization is compatible with that interpretation. Both the often-observed (a) persisting effects of early traumas and (b) interactive effects of childhood traumas and recent stress on adult mental health may reflect stress sensitizing processes. Second, most research on the kindling hypothesis is based on clinical samples and/or between-persons designs. Studies based on representative community-based samples and that follow the same individuals for long periods of time are needed to produce stronger evidence. Addressing this issue

through the integration of stress theory and life course principles would shed new light on the kindling hypothesis.

Linked Lives: Intergenerational Transmission of Mental Health Problems

The concept of linked lives reminds us that mental health is a function of not only personal assets and liabilities, but also the nature and quality of our connections to significant others. The powerful role of social support has been described in other sections of this chapter. This section focuses on another facet of linked lives: evidence about the intergenerational transmission of mental illness. Genetic determinants of mental illness are beyond the scope of this review; rather, the emphasis here is on the extent to which the children of mentally ill parents exhibit mental health problems and what is known about the pathways by which transmission of mental health problems across generations occurs.

Evidence for the Intergenerational Transmission of Mental Health Problems

Evidence that mental illness is reproduced across familial generations is both plentiful and consistent (Downey & Coyne, 1990; Goodman & Gotlib, 1999). This evidence rests on two research designs: cross-sectional studies that compare rates of mental health problems among the offspring of mentally ill and non-mentally ill parents and longitudinal studies that follow both parents and children over time. The latter, of course, are methodologically superior – not only because changes in psychiatric symptoms and disorders can be traced over time, but also because the effects of children's length of exposure to parental mental illness can be measured.

Children's mental health has been measured in terms of psychiatric disorder and behavioral problems. The primary determinant of the measurement approach used is the age of the children. Standard psychiatric diagnostic systems are feasible for adolescents and young adults. For younger children, behavioral problems are better indicators of adjustment (Goodman & Gotlib, 1999).

Although both mothers and fathers have the potential to transmit mental health problems to their offspring, (non-genetic) research to date has focused virtually exclusively on mothers. Few investigators offer a rationale for restricting the parental generation to mothers, but it is apparently assumed that mothers interact more with their children, are more likely to co-reside with their children, and have closer relationships with their children than fathers. Type of maternal psychiatric disorder might be expected to affect the likelihood of intergenerational transmission, but the vast majority of studies to date focus on mothers suffering from affective disorders in general and either depression or anxiety disorder in particular.

Evidence to date documents strong relationships between mothers' mental illness and mental health problems among their children (e.g., Andrews, Brown, & Creasey, 1990; Bifulco, Moran, Ball, Jacobs, Baines, Bunn, & Cavagin, 2002; Ellenbogen & Hodgins, 2004; Hammen, Brennan, & Shih, 2004). Indeed, I could not locate any study that failed to report a significant relationship between mothers' and children's mental health. In arguably the best study to date, which followed mentally ill and non-mentally ill mothers and their children for 10 years (until the children were in their late teens or early adulthood), the children of mentally ill mothers were four times more likely than the children of non-mentally ill mothers to qualify for a diagnosis of affective disorder (Bifulco et al., 2002).

Pathways from Mothers' to Children's Mental Health

Most investigators take the position that mothers' mental health *per se* cannot account for the observed patterns of intergenerational transmission. Instead, there must be pathways or mechanisms by which mental health problems traverse generations. Moreover, mentally ill mothers differ from non-mentally ill mothers in numerous ways, necessitating that intergenerational transmission be examined with a broad range of variables statistically controlled (e.g., SES, maternal marital status). Some investigators report identifying the pathways by which maternal mental illness reproduces mental health problems in their children. For example, Bifulco and colleagues (2002) report that the effects of maternal major depressive disorder on their adolescent/young adult children's mental health were totally mediated by childhood abuse and/or neglect. More commonly, partial mediating effects are reported – e.g., Hammen, Shih, and Brennan (2004) reported that most of the relationship between mothers' MDD and depression in their offspring was mediated by children's interpersonal distress (poor relationships with both peers and family members). Similarly, Ellenbogen and Hodgins (2004) report that poor parenting mediated most of the relationship between maternal MDD and their children's behavior problems. In contrast, Andrews and colleagues (1990), in a study of depressed mothers and their young adult daughters, report that maternal depression, poor parenting by the mother, and abuse/neglect of the children were independent predictors of MDD among the daughters.

It also appears that maternal mental illness can interact with a variety of factors to affect the odds of children's mental health problems. Hammen, Brennan, and Shih (2004), for example, report that maternal depression had only modest direct effects on children's depression, but that the interaction of family discord and maternal depression greatly increased the likelihood of MDD among children (the direct effects of family discord also were modest). In a somewhat different vein, Brennan, Le Brocque, & Hammen (2003) examined the interactive effects of maternal depression on children's MDD in an attempt to understand the conditions under which maternal depression did *not* increase the risk of their children's depression. They identified three factors that interacted with maternal depression to *protect* their children from depressive disorder: the mother exerted low levels of parental control, high maternal warmth, and low levels of maternal over-involvement with her children.

Much remains to be learned about the conditions under which parental mental illness—both mothers' and fathers'—reproduce mental health problems in their children. Research to date has not been fine-grained—for example, I was unable to locate any studies that determined whether the effects of maternal depression differed for sons and daughters. Applying a life course perspective to this issue also raises a myriad of questions. Two obvious examples are: To what extent do duration and severity of parental mental illness affect their children's mental health? Once children leave the parental home, do the negative effects of parental mental illness dissipate or is parental mental illness a form of childhood trauma that persists across the children's life course?

Looking to the Future

Several years ago, I wrote my first (and only other) review of what life course perspectives offer the sociological study of mental health and mental illness. At that time, I stated, "Of necessity, discussion will focus more on the *potential* of life course perspectives to inform us about the antecedents and consequences of mental health than about its demonstrated utility" (George, 1999, p. 565). Since then, the volume and quality of life course research on mental health and illness has increased dramatically. Approximately half of the research cited in this review was published in 2000 or later. This research did not exist when I first reviewed this topic and speaks to the increased cross-fertilization of the sociology of mental health and life course perspectives.

Despite the very real gains in applying life course principles to issues concerning mental distress and disorder, many important issues remain unaddressed or underaddressed. I have attempted to identify issues that merit attention in future research throughout this chapter. In this section, I address two issues that I believe are critical to future incorporation of life course principles into social research on mental illness.

Enhancing Data Collection

The ideal research design for life course studies is of course longitudinal data that spans decades. A few studies meet or almost live up to this ideal and others will undoubtedly do so in the future. There are, however, relatively inexpensive ways that studies spanning briefer periods of time could collect data that enhance their appropriateness for life course research.

As described above, techniques that increase our ability to collect reliable and valid retrospective data (e.g., life history calendars) are now available. To the extent possible, the field should incorporate retrospective histories of important domains of life experience. Examples of potentially important personal histories that can be collected include occupational histories, marital histories, military histories, medical histories, and histories of religious and organizational involvement. Mental health researchers have already demonstrated the ability to collect data about early traumas/adversities and major lifetime stresses—and demonstrated

that these temporally-expanded measures of stress contribute to current mental health. Many research topics in the sociology of mental health have the potential to be better understood by combining retrospective and contemporaneous data.

Another method of enhancing the ability to perform fine-grained analyses of temporal issues related to mental health is to ask research participants to date the occurrence of relevant changes in their lives. The typical panel study has intervals ranging from 2–5 years between measurements. Participants' lives can change in numerous ways between measurements – and investigators often desire to examine how those changes affect outcomes of interest. Simply asking participants exactly when these changes occurred opens the door to a set of analysis techniques that permit temporal analyses otherwise not possible.

In short, the field will be advanced if investigators pay more attention to issues of timing and are more attentive to including temporal issues in their research designs.

The Need to Study Both Psychiatric Symptoms and Psychiatric Disorders

Throughout this chapter, I have noted important research topics in the sociology of mental illness that cannot be addressed unless investigators are willing to investigate dichotomous measures of mental illness as well as continuous measures of psychiatric symptoms. In my final comments, I will make a last plea for the study of mental illnesses as defined in psychiatric nomenclature and which can be ascertained using structured interviews.

The sociological study of specific mental illnesses is important for both scientific and policy reasons. Scientifically, failure to study psychiatric disorders results in a poorer sociological understanding of human lives. Research to date suggests that the same social factors that generate milder forms of distress also predict the onset of mental illnesses. Beyond those similarities, however, are a range of social consequences that are unique to mental illness. Although milder forms of distress have negative consequences, the consequences of mental illness can be devastating. Stigma is an issue for people who experience recurrent episodes of mental illness, with symptoms that often preclude self-care, let alone living up to their work and family responsibilities; it is not an issue for psychological distress. A mild, temporary increase in distress is more prevalent among the population than the onset of a psychiatric disorder, but it is the latter that has the potential to truncate educational and occupational achievements, to tear families apart, and to place individuals' children at risk of reproducing the same dysfunctional syndromes. Social rejection, downward social mobility, and family dissolution – these are issues of primary interest to social scientists. These issues are affected by mental illness, not mild levels of distress.

Social scientists also need to understand that policy makers and practitioners are interested in what they can contribute to knowledge about preventing, identifying, and treating mental illnesses. They are not interested in results showing that a social factor increases average scores on a psychiatric symptom scale two-thirds

of a standard deviation. Mental health professionals are interested in what we can contribute to their understanding of individuals suffering large number of symptoms that severely compromise their ability to function. They are interested in the social antecedents and the social consequences of mental illness. And we have much to offer them.

I am not suggesting that social scientists adopt psychiatric nomenclature in a thoughtless way. Nor am I advocating that social scientists throw out continuous measures of psychological distress or symptoms. I am arguing for an eclectic approach in which, depending on the research questions and the intended audience, psychiatric disorder, psychological distress, or both are acceptable tools of the trade.

The cross-fertilization of the sociology of mental illness and life course principles is alive and well, with great opportunities for continuing contributions. If social scientists are willing to study psychiatric disorder, as well as psychological distress, much will be learned about the social antecedents and consequences of mental illness and the profound effects of mental illness, not only in the present, but also in the long term. If social scientists are willing to study long-term patterns of social resources and deficits, much will be learned about their cumulative and dynamic effects. These seem to be tasks worthy of our efforts.

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