Advances in the Conceptualization of the Stress Process

Essays in Honor of Leonard I. Pearlin

William R. Avison
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Preface

In 1981, Leonard Pearlin and his colleagues published an article that would radically shift the sociological study of mental health from an emphasis on psychiatric disorder to a focus on social structure and its consequences for stress and psychological distress. Pearlin et al. (1981) proposed a deceptively simple conceptual model that has now influenced sociological inquiry for almost three decades. With his characteristic penchant for reconsidering and elaborating his own ideas, Pearlin has revisited the stress process model periodically over the years (Pearlin 1989, 1999; Pearlin et al. 2005; Pearlin and Skaff 1996). One of the consequences of this continued theoretical elaboration of the stress process has been the development of a sociological model of stress that embraces the complexity of social life. Another consequence is that the stress process has continued to stimulate a host of empirical investigations in the sociology of mental health. Indeed, it is no exaggeration to suggest that the stress process paradigm has been primarily responsible for the growth and sustenance of sociological research on stress and mental health.

Pearlin et al. (1981) described the core elements of the stress process in a brief paragraph:

> The process of social stress can be seen as combining three major conceptual domains: the sources of stress, the mediators of stress, and the manifestations of stress. Each of these extended domains subsumes a variety of subparts that have been intensively studied in recent years. Thus, in the search for sources of stress, considerable interest has been directed to life events and to chronic life strains, especially the former; in work concerned with conditions capable of mediating the impact of stressful circumstances, coping and social supports have had a rather dramatic rise to prominence; and as for stress and its symptomatic manifestations, the expanding volume of research ranges from the microbiological substrates of stress to its overt emotional and behavioral expressions (p. 337).

With these three sentences, a paradigm was launched – one that has emerged as the dominant perspective in the sociology of stress and mental health.

This initial specification of the stress process is now widely known. Pearlin and his colleagues described how stressful life events and more chronic life strains diminish individuals' self concepts and their sense of mastery. They also argued that two types of psychosocial resources, social support and coping, play important roles in protecting individuals from the consequences of their stressful experiences.

Pearlin et al. (1981) made the important assertion that "there are several junctures at which the mediators can conceivably intervene: prior to an event, between an event and the life strains that it stimulates, between the strain and the diminishment of the self-concept, or prior to the stress outcome" (p. 341). Thus, at this early stage in the development of the stress process paradigm, the complexity of a seemingly simple model was apparent. Although some of the constructs and dynamics of the stress process had been introduced earlier by Pearlin (Pearlin 1980, 1983; Pearlin and Lieberman 1979; Pearlin and Schooler 1978), the synthesis of these ideas into a model and the presentation of an empirical test of that formulation clearly catapulted the paradigm into the forefront of thinking and research in medical sociology and the sociology of mental health.

In a subsequent article, Pearlin (1989) more explicitly discussed the central importance of the social context in which the stress process operates. In so doing, he highlighted the distinctive sociological perspective that the stress process brings to the study of stress and its manifestations. He also elaborated on the interplay among stressful life events and chronic strains and continued to explore the locations in the stress process where mediators could be expected to exert their influence. In this paper, Pearlin clearly establishes the sociological character of the stress process.

Pearlin's (1999) contribution to the *Handbook of the Sociology of Mental Health* (Aneshensel and Phelan 1999) provides a comprehensive reflection on the stress process paradigm approximately two decades after its creation. In this chapter, Pearlin identifies three key assumptions that underlie the model. First, the stress process is dynamic in nature: changes in one set of factors produce changes in others. Second, Pearlin argued persuasively that social stress is by no means unusual or abnormal; indeed, it is typical of ordinary life. Stress arises out of commonly-held social roles of everyday life and in typical social contexts. Third, the origins of stress are in the social world. This directs the sociological study of stress to a greater emphasis on social context than on history or biology.

Pearlin then systematically reviews the major components of the stress process. He reiterates the importance of social and economic statuses as crucial structures that influence human experience. He draws attention to the importance of the neighborhood context as a kind of crucible in which life experiences occur. He further elaborates the domain of stressors by noting that other dimensions of stress require consideration within the paradigm and he articulates the concept of stress proliferation (having earlier provided an empirical demonstration of this process in Pearlin et al. 1997). In this chapter, he also clarifies the conceptual distinction between resources as mediators and resources as moderators of the stress–distress relationship. He concludes with a succinct justification of the advantages of examining psychological distress as the primary outcome in stress process research.

These three major statements in 1981, 1989, and 1999, together with Pearlin's program of empirical research, provided sociologists with a well-articulated model that was soon applied to a variety of issues. His emphasis on the social context in which the stress process unfolds became one of the dominant perspectives for understanding the social patterning of mental health and illness. His careful consideration of the many sources of stressors in people's lives and the variations in the

availability of mediating and moderating resources provided sociologists with a rich source of ideas for empirical investigation. Leonard Pearlin's work has been particularly noteworthy in the ways that it has fostered innovation in the study of social roles, especially those related to the family and work. His ideas have also stimulated studies of the social structural determinants of psychosocial resources such as social support and mastery.

Remarkably, this was only the beginning. In a seminal paper, Pearlin et al. (1997) demonstrated how the stress process could be applied to the study of caregiving. In subsequent studies of people giving care to persons with HIV/AIDS (Pearlin et al. 1997; Turner et al. 1998) and caregivers to persons with Alzheimer's disease or other dementias (Aneshensel et al. 1993, 1995; Pearlin 1992; Skaff and Pearlin 1992; Skaff et al. 1992), the utility of the stress process for understanding the stress of caregiving was documented empirically. This work not only introduced the stress process paradigm to social scientists interested in caregiving and family dynamics, but it also brought the paradigm to the attention of researchers in the health sciences and other disciplines concerned with family-based care. In short order, research based on the stress process paradigm increased exponentially.

The influence of this paradigm spread further as Leonard Pearlin began to explore the ways in which the stress process might be aligned with ideas from the life course perspective. Pearlin and Skaff (1996) suggested a number of ways in which principles central to the life course perspective could be integrated with key elements of the stress process to examine how individuals' exposure to stressors. They suggested that as people move through the life course, individuals' lives are restructured. As their statuses and roles change, so too do the stressors they encounter and the mediating resources to which they have access.

These ideas have been elaborated; Pearlin et al. (2005) specify elements of the stress process that may affect stress and health across the life course. These include the effects of economic strains and discriminatory experiences, stress proliferation, and the intersection of status attainment and stress exposure. This synthesis of the stress process with the life course has been stimulating to research in the sociology of mental health. Most recently, Turner and Schieman (2008) have assembled a wide-ranging set of papers that explore the interface of the stress process with the life course.

It is no exaggeration to assert that this vast body of research on stress and mental health is due in large part to the imagination of Leonard Pearlin. The richness of his theoretical ideas and his apparent comfort with investigating the complexities of social life have called a generation of sociological researchers to action. The work continues and a second generation has emerged to carry on this research. And there is little doubt that the generative nature of Len's responses to the work of others has facilitated the continuing significance of the stress process.

In honor of Leonard Pearlin's significant contributions to sociological theory and research, we invited some of his colleagues, collaborators, students, and friends to contribute essays that attest to Len's influence on their work. We also encouraged these researchers to tell us what their future lines of inquiry might be and how Leonard Pearlin's ideas have shaped these new directions.

Initially, the authors came together in Boston in August 2008, for a day of celebration with Len. The day began with a breakfast hosted by Jean Shin, Director of the American Sociological Association (ASA) Minority Affairs Program. Len Pearlin has been a long-time supporter of the Minority Fellowship Program. The breakfast provided new MFP Fellows with the opportunity to meet a number of sociologists with research interests in stress and health.

Sally Hillsman, Executive Officer of ASA presented Len with a plaque that acknowledged his contributions to the MFP program. She also noted that Len Pearlin has been a member of ASA for 58 years. We then presented our papers, shared memories with Len, and conclude with a celebratory dinner. We have included a picture of the entire group. The essays that appear in this book are all dedicated to Len Pearlin, colleague, mentor and friend.

We wish to acknowledge the American Sociological Association for providing meeting space for the one-day event and Jean Shin for hosting the MFP breakfast. We also wish to thank Teresa Krauss and Katie Chabalko at Springer for their support of this project. Special thanks to Kathleen Lynch for her assistance in the final editing process.

Finally, we wish to acknowledge the efforts of our colleagues in contributing to this book. Their cooperation has been stellar. Over many years, this group of stress researchers has met regularly at the American Sociological Association Annual Meetings where the Section on the Sociology of Mental Health has become a vibrant forum for the exchange of ideas. We will contribute our share of royalties from the sale of this book to the Section in recognition of its continued support of sociological research.

London, ON — William R. Avison
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Second Row (*left to right*): Carol Aneshensel, Peggy Thoits, Leslie Caplan, Elizabeth Menaghan, Jay Turner, Joseph Mullan
Third Row (*left to right*): Elena Fazio, William Avison, Carmi Schooler, K. A. S. Wickrama, Blair Wheaton, Marilyn Skaff

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Chapter 1
Understanding Health Disparities: The Promise of the Stress Process Model

R. Jay Turner

Introduction

Evidence revealing racial and socioeconomic disparities in health has long been available and continues to accumulate. Among those that are now well documented are Black-white inequities in overall health, all-cause mortality and life expectancy, low birth weight, infant mortality, reproductive health, hypertension and heart disease, as well as various psychiatric and substance use problems. Similar disparities are found across socioeconomic status (SES). Although race and SES are associated, prior research has documented substantial health disparities across SES within race and across race within SES (Geronimus et al. 1996; Williams 1999). This paper argues that progress in understanding the origins of such consequential health disparities can be materially enhanced by adopting the theoretical guidance embodied in the work of Leonard I. Pearlin. It is hypothesized that health disparities arise to a substantial degree from differences in lifetime exposure to social stress. For more than a quarter century, Pearlin's stress process model has represented the dominant perspective of researchers attempting to identify potentially modifiable social contingencies in mental health. The high degree of the success of the model in accounting for variations in depressive symptoms and psychological distress suggests its potential power for advancing our understanding of racial and SES health disparities.These disparities have a massive impact in terms of unequal suffering and dramatic social and economic costs. It is thus no surprise that substantial research has accumulated aimed at identifying the origins of such disparities. It is clear that racial and SES differences in the availability, use, and effectiveness of medical care (e.g. Escarce et al. 1993; Ferguson et al. 1997; Fincher et al. 2004; Johnson et al. 1993; Klabunde et al. 1998; Peterson et al. 1997), and in the level of trust in health care institutions and physicians, are implicated (Doescher et al. 2000; Kao et al. 1998a, b; Saha et al. 2003; Thom and Campbell 1997), as are differences in a variety of health

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behaviors (Fraser et al. 1997; Healthy People 1990; McGinnis and Foege 1993). However, it is also clear that adjustments for these collective differences leave the majority of racial and SES health disparities unexplained (e.g. Lynch et al. 1996; Marmot et al. 1997; Lantz et al. 1998; Lantz et al. 2001). Available evidence points to the conclusion that potentially modifiable social factors play a fundamental role in racial and SES health disparities – a role that includes but goes substantially beyond their significance for such well established risk factors as poor nutrition, smoking, sedentary life style, and obesity. However, no consensus has yet emerged about the identity or nature of these social factors or how they might be effectively addressed. It will be argued that this state of affairs arises from several significant deficiencies that have characterized most prior studies, including the failure within studies of physical health and general health outcomes to take advantage of the conceptual insights of Leonard I. Pearlin.

This paper proposes a strategy for more adequately evaluating the social origins of racial and SES health disparities by more fully addressing the stress hypothesis through utilization of an elaborated version of Pearlin's stress process model. Multiple strands of evidence have been accumulating in support of the stress hypothesis (e.g. Adler et al. 1993; Lantz et al. 1998; Wilkinson 1996) and it appears to have emerged as a leading contender for the mechanism by which minority status and low social status are translated into relatively poor health (Dowd and Goldman 2006).

Despite the availability of a substantial array of evidence confirming the health significance of social stress, it is contended that the explanatory significance of stress with respect to health disparities has never been effectively tested for several reasons. This includes, most importantly, the crucial fact that the problem of misclassification in the disordered versus the well distinction has not been effectively addressed, and that differences in exposure to stressors have most often not been adequately estimated (Turner and Avison 2003; Turner et al. 1995). It will be suggested that dealing with these and other impediments to progress in the context of the stress process model has the potential to yield a significant forward leap toward identifying potentially modifiable factors associated with increased or decreased health risk within and also across race and socioeconomic status (SES). The specific model to be proposed, which is an elaboration of Pearlin's model, is presented as Fig. 1.1. It will be argued that this model may substantially overcome the misclassification and stress measurement problems and that there is compelling evidence for most of the linkages shown.

Background

The Problem of Misclassification

As the scientific foundation of public health efforts, the goal of epidemiologic research has been to identify factors implicated in the causation of the particular disorder under investigation. However, both racial and SES health disparities

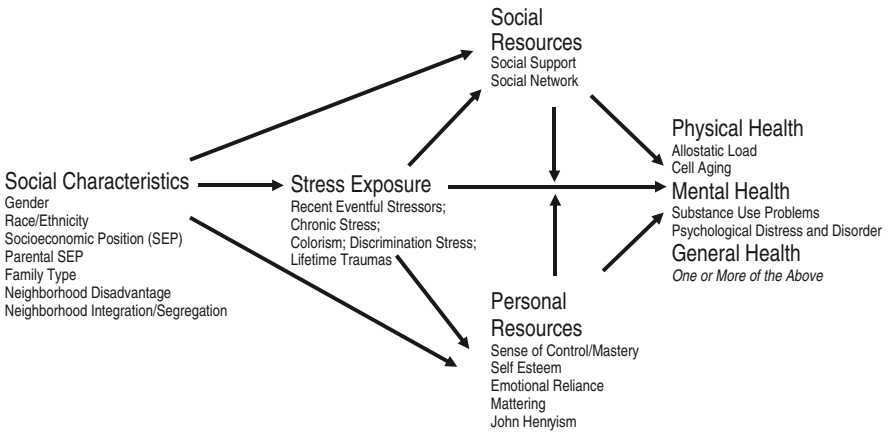

Fig. 1.1 Stress process model

involve a substantial array of often overlapping physical and emotional disorders and problems. An assumption underlying much of what is argued here is that the multiplicity or generality of these disparities suggests that the major contributing factors (both risk and protective) may also be quite general in nature. Based on a review of extant animal and human studies, Cassel argued more than thirty years ago that the social environment acts to raise or lower susceptibility to all forms of distress and disorder in general and that the nature of the particular disorders that occur is determined on other grounds (Cassel 1974, 1976). Evidence accumulated over the intervening years provides strong support for Cassel's claim. Guided by this premise, what is required is that research goes beyond conventional practice. The tremendous public health contributions of investigations based on the standard social etiology model notwithstanding, its utility for identifying fundamental determinants of wide ranging racial and SES health disparities may be limited. This is so because risk and protective factors are typically identified through contrasting the social experiences, socioenvironmental contexts, personal attributes, and to a limited extent, the genetic make up of those with and without the disorder under investigation. Those not qualifying for the clinically defined target disorder, including those for whom the disorder has not quite reached a detectable stage are implicitly, and frequently erroneously, classified as "well." The crucial point is that the most important factors contributing to health disparities may not be linked to a specific disorder, or set of related disorders, to the exclusion of others. Following Aneshensel (Aneshensel 2005; Aneshensel et al. 1991), it is argued that the misclassification of individuals with unmeasured or undetected forms of distress or illness as non-disordered is likely to have obscured or yielded underestimates of the significance of causally relevant social, contextual, and dispositional factors. Research that avoids such misclassification may well provide a significant forward leap in our understanding of the factors, other than inequities in health services and differing health behaviors, that underlie racial and SES health disparities. The strategy proposed

seeks to solve the misclassification problem through combining consideration of certain biomarkers, to estimate current physical health status, with measures of both psychiatric and substance disorders and problems.

Because most disorders that are significantly implicated in health disparities have insidious rather than abrupt onsets, a related problem is one of establishing the time of onset. This is a crucial difficulty because in non-experimental community-based research the pursuit of causal inferences requires the establishment of the temporal antecedence of the risk/protective factors being evaluated (Kenny 1979). What is required, therefore, is a prospective design – one in which analytic outcomes include first onsets of physical, psychiatric, or substance disorders, both individually and collectively considered, and continuous measures that allow reliable assessment of changes in health status over time. As a large body of research utilizing the stress process model has demonstrated, this can be achieved within the mental health and substance abuse domains by assessing the lifetime and recent occurrence of DSM IV psychiatric and substance disorders, employing multidimensional measures of psychological symptomatology, and evaluating quantity/frequency of substance use, along with the counts of problems associated with such use.

With respect to physical health outcomes, establishing temporal order and assessing changes in health status over time have been highly problematic, especially within large-scale community studies and where interest goes beyond one or more particular disorders. Although studies that have focused on self appraisals of health status have yielded interesting findings, they have not been revealing of factors that may account for racial and SES health disparities. It is suggested that it may now be possible to overcome the daunting measurement problem that has long impeded our capacity for causal interpretation with respect to general physical health status. Based on the concept of allostasis (Sterling and Eyer 1988), McEwen and colleagues (McEwen 1998; McEwen and Stellar 1993; McEwen and Seeman 1999; Seeman et al. 1997) formulated the concept of allostatic load, referring to "the cumulative wear and tear on the body's systems owing to repeated adaptation to stressors" (Geronimus et al. 2006). Allostatic load is thus thought to provide a meaningful description of the long-term biological consequences of chronic stress (McEwen and Seeman 1999; Seeman et al. 1997, 2004). The individual's response to stress exposure results in dysregulation that is reflected by a change in the set-point of physiological markers (Dowd and Goldman 2006). When such changes endure over time the consequence is health deterioration. Allostatic load has been shown to be associated with increased mortality (Karlamanga et al. 2006; Seeman et al. 2004), lower SES, and the occurrence of depressive disorder (McEwen 2003). This and other evidence led to the "weathering" hypothesis initially proposed by Geronimus (1992) to account for the observation of earlier health deterioration among African Americans. "The stress inherent in living in a race-conscious society that stigmatizes and disadvantages Blacks may cause disproportionate physiological deterioration, such that a Black individual may show the morbidity and mortality typical of a white individual who is significantly older" (Geronimus et al. 2006, p. 826). Two categories of biomarkers are used to derive estimates of allostatic load – primary mediators involving substances released by the body in response to

stress, including norepinephrine, epinephrine, cortisol, and dehydroepiandrosterone sulfate (DHEA-S) and a secondary set of mediators that are generated from the effects of the primary mediators (e.g. elevated systolic and diastolic blood pressure, cholesterol levels, glycated hemoglobin levels, and waist to hip ratio) (Seeman et al. 1997). These categories of markers are labeled as mediators because they are the paths or physiological mechanisms by which adverse social experiences are translated into risk for mortality and for wide ranging forms of clinically detectable disease. However, because allostatic load may be taken to constitute a useful summary measure of "weathering," it may represent a meaningful physical health outcome measure. Geronimus et al. (2006) have presented a clear rationale for such a perspective. They note, "An allostatic load algorithm is conceptually suited for the study of weathering. Because the stress response disrupts regulation of various systems throughout the body – for example, the cardiovascular, metabolic, and immune systems – the concept of weathering encompasses multiple systems and includes impacts on them that might not yet register clinically. Similarly, allostatic load is measured across physiological systems and includes sub-clinical indicators of the body's response to stress – responses that increase the risk of morbidity" (Geronimus et al. 2006, p. 826).

As "weathering" refers basically to premature aging it may also be captured by measures of cell aging. As Aviv (2006) has noted, mean leukocyte telomere length, an index of cell aging, may be an indicator of biological age. As such it yields information beyond chronological age about risk for developing diseases of aging – diseases that reduce life span such as coronary heart disease, and hypertension (Benetos et al. 2001, 2004; Samani et al. 2001). Stimulated by the demonstrated linkage between chronic stress and poor health, Epel and colleagues (Epel et al. 2004) addressed the question of whether stress accelerates aging at the cellular level. Noting recent research that has pointed to the crucial roles of telomeres (DNA-protein complexes that cap chromosomal ends and that shorten with each replication and with age in all replicating somatic cells that have been examined) (Frenck et al. 1998) and telomerase (a cellular enzyme with direct telomere-protective functions), they tested the hypothesis that stress impacts health by modulating the rate of cellular aging. Assessing cell aging in terms of telomere length and the level of telomerase, Epel et al. (2004, p. 17312) found women with the highest level of perceived stress to have "telomeres shorter on average by the equivalent of at least one decade of additional aging compared to low stress women" (see also Mays et al. 2007; Seeman 2008). In a subsequent study, Epel and colleagues (Epel et al. 2006) found low telomerase activity, occasioned at least in part by chronic stress exposure, to be associated with major risk factors for cardiovascular disease and proposed that low leukocyte telomerase constituted an early marker for CVD risk and perhaps for shortened telomeres. Thus, current physical health status can be estimated by telomere length and the level of leukocyte telomerase as well as by allostatic load. Because these biomarkers can be taken to represent current health status and can be treated as continuous variables, they allow analyses in which the temporal order of variables can be established with confidence and provide means for measuring changes in health status over time. A strategy of considering both

biomarkers would also allow evaluation of the concordance between cell aging and allostatic load and the assessment of their relative predictive efficacy and that of the components that comprise these two approaches for estimating "weathering."

If it is accepted that these measures represent meaningful estimates of current physical health status, two scientifically crucial advances might be achieved – resolution of the misclassification problem and effective evaluation of the utility of the stress process model for advancing understanding of the origins of racial and SES health disparities. Misclassification can be avoided by evaluating the predictors, cross sectionally and over time, of the presence and/or severity of problematic status on one or more of the three health dimensions – physical health, mental health, and substance use disorders and problems. This strategy would yield the unique opportunity to distinguish those who have some form of a significant health problem from those who do not. Such a multidimensional measurement strategy would also allow assessment of the possibility of cultural and sociodemographic variation in the propensity to express the consequences of stress exposure in physical, emotional, or behavioral ways. An ability to test this possibility may advance our understanding of the well established but anomalous finding that, despite strong evidence predicting elevated mental health risk among African Americans, lower rather than higher rates of psychiatric and substance disorders are observed (e.g. Kessler et al. 1994; Turner and Gil 2002).

A multidimensional measurement strategy such as that described would also allow a unique consideration of patterns of comorbidity and concordance across alternative indices of health, and an examination of the risk significance of the prior occurrence of physical, psychiatric, and substance disorders for current general health status. It is argued that this measurement approach is likely to complement traditional disease specific approaches and that it promises an advance in understanding potentially modifiable factors of relevance across a range of health problems that underlie racial and SES health disparities.

Improved Estimation of Stress Exposure

Available evidence leaves little doubt that exposure to social stress increases risk for poor health, regardless of the dimension of health under consideration. However, despite the reliability with which the stress – health linkage has been observed, both available evidence and medical predilection have led to a widespread assumption that the magnitude of the contribution of exposure differences toward explaining observed variations in health risk ranges from trivial to modest (Rabkin and Struening 1976; Turner et al. 1995).

Although measures of recent life events have long been criticized for ignoring other forms of social stress, among other shortcomings (e.g. Raphael et al. 1991; Sandler and Guenther 1985; Moos and Swindle 1990), it is clear that such measures remain dominant today in terms of use, and that most of what is known about the health significance of stress exposure, is based on the checklist measures of recent events

(Turner and Wheaton 1995). However, recent research has clearly demonstrated that checklist scores yield substantially biased estimates of total stress exposure across race/ethnicity, gender, and SES, at least among the young. Specifically, limiting stress measurement to a checklist of recent events has been shown to significantly overestimate total stress exposure among women relative to men, and systematically underestimated such exposure among African Americans relative to whites, and among persons of lower SES relative to their more advantaged counterparts (Turner and Avison 2003). In contrast to recent events, which suggest that women experience significantly higher levels of stress than men, estimated total stress reveals men to have significantly higher exposure. Total stress, assessed in terms of recent events, chronic stressors, discrimination stress, and the lifetime occurrence of major and potentially traumatic events, estimated the elevation in stress exposure among African Americans relative to whites to be 2.6 times greater than that estimated by scores on recent life events alone. Importantly, the substantial contribution of differential stress exposure toward explaining race differences in distress was observed even when discrimination stress was excluded from the analysis (Taylor and Turner 2002). The corresponding comparison of those in the upper and lower SES categories indicated that the total stress score estimated an elevation in exposure in the lower SES category that is three hundred percent higher than estimated on the basis of recent events alone (Turner and Avison 2003).

There seems a good basis for contending that the failure of prior research to take account of a range of social stressors has significantly biased estimates of status differences in exposure and resulted in the systematic underestimation of the contributions of stress exposure to the occurrence of health problems and racial and SES disparities in health. As already noted above, it is contended that the stress hypothesis has never been effectively tested primarily because of the misclassification problem and because of our failure to effectively estimate differences in stress exposure. As has elsewhere been argued, the relative absence of research that has gone beyond recent life events or a known-groups strategy for assessing differences in stress leaves open the question of the relative contributions to health disparities of variation in exposure to stress and differences in vulnerability to stress. This is so because unmeasured differences in stress exposure across race or SES will masquerade within research findings as differences in adaptational ability (Turner et al. 1995). Accordingly, poor measurement of exposure differences tends to lead toward conclusions that locate the source of health disparities largely within the skins of the victims.

In prior work, attempts have been made to improve on this circumstance by going beyond recent events in estimating level of stress exposure (Taylor and Turner 2002; Turner and Avison 2003; Turner and Lloyd 1999; Turner and Wheaton 1995;Turner et al. 1995) by adding measures of chronic stress, of lifetime exposure to major and potentially traumatic events, and of discrimination stress. It is suggested that effective evaluation of the contribution of differences in stress exposure to racial health disparities may also require consideration of additional forms or types of stress exposure such as colorism and hyper vigilance associated with uncertainty about covert discrimination.

The Promise of the Stress Process Model

As noted above, Fig. 1.1 presents an elaboration of the stress process model suggested by Pearlin. It reflects a health outcome measurement strategy which, as argued above, may effectively address the misclassification problem, as well as the multidimensional assessment of stress exposure that may minimize underestimation and biased estimate of stress effects.

Stress Exposure

Hundreds of investigations have reported relationships between exposure to social stress, primarily estimated by checklists of recent life events, and both mental and physical health status (Dohrenwend and Dohrenwend 1974; Jemmott and Locke 1984; Jenkins 1976). With respect to mental health, high levels of stress exposure have consistently been found to predict higher level of psychological distress (Avison et al. 2007; McLean and Link 1994; Thoits 1983; Turner and Wheaton 1995) and to account for a substantial portion of observed variation in psychological distress across SES and race (e.g. Turner and Avison 2003; Turner and Lloyd 1999). Moreover, cumulative adversity assessed by a lifetime of exposure to major and potentially traumatic events has been shown to substantially increase risk for the subsequent onset of psychiatric disorder, drug dependence, and alcohol dependence (Lloyd and Turner 2008; Turner and Lloyd 2003, 2004).

With respect to physical health disparities, evidence supporting the stress hypothesis is also widespread. There is now an extensive body of research, employing both human and non-human animal models, that addresses specific forms of disease or disorder. These studies reveal clear linkages between exposure to social stress and the onset and persistence of numerous chronic health problems including cardiovascular disease (Jenkins 1978; Kaplan et al. 1982; Kaplan et al. 1983; Nerem et al. 1980; Rozanski et al. 1999; Vitaliano et al. 2002), multiple sclerosis (Grant et al. 1989; Stip and Truelle 1994; Warren et al. 1982), diabetes mellitus (Hagglof et al. 1991; Leaverton et al. 1980; Mooy et al. 2000; Thernlund et al. 1995), high blood pressure (Karlsen and Nazroo 2002; Krieger and Sidney 1996), fibromyalgia (Kivimaki et al. 2004), rheumatoid arthritis and osteoarthritis (Rogers et al. 1980; Zautra et al. 1994), Graves' thyroid disease (Harris et al. 1992; Kung 1995; Sonino et al. 1993; Winsa et al. 1991), and respiratory illness (Cohen et al. 1998; Cohen et al. 2002; Karlsen and Nazroo 2002).

Thus, three persistently observed associations converge in support of the plausibility of the stress hypothesis, (1) the clear disparities in health across race and SES; (2) the compelling evidence, partially reviewed above, suggesting a potentially causal linkage between social stress and varying aspects of health, and (3) the strong evidence that exposure to substantially elevated levels of social stress is characteristic among African Americans (Turner and Avison 2003) and persons of

lower socioeconomic position (Kessler and Cleary 1980; Seeman and Crimmins 2001; Turner and Lloyd 1999; Turner et al. 1995). Indeed, as reviewed above, considerable evidence has accumulated over the past two decades indicating that the task of persistently coping with eventful and chronic stressors can profoundly affect one's health (e.g. James 1994; James et al. 1992).

As Pearlin (1989) long ago argued, it is increasingly clear that stress exposure arises out of the context of people's lives and thus that it is differentially distributed across contexts defined by social status, including race and SES (Turner and Avison 2003; Turner et al. 1995). Because stress exposure is generated or conditioned by social factors, the possibility of interventions aimed at reducing such exposure should, in our view, command substantially more attention in research than they have so far received. Supportive of this contention are findings that an important portion of the protective significance of family structure and of cultural factors in relation to depression and substance use problems is explained by the differences in stress exposure (Barrett and Turner 2005, 2006; Turner et al. 2006). Development of effective interventions, however, requires an understanding of the relative significance of different forms and sources of social stress, and for whom various forms are more and less important. A core objective of future research should be to identify the forms or aspects of stress exposure that most contribute to premature aging and thus to racial and SES health disparities. In this regard, it is important to note that resolution of the health outcome misclassification problem and more adequate estimation of the level of stress exposure are of crucial significance for effectively evaluating the significance of social stress for racial and SES health disparities.

Mediating/Moderating Influences

Regardless of whether variations in stress exposure can be fully and reliably measured, both evidence and everyday experience make clear that we would still observe cases where individuals are relatively unaffected in the face of substantial stress exposure and cases of adverse behavioral, emotional, and/or physical health outcomes where the magnitude of exposure appears minimal. Clearly, individuals differ importantly in their experience of, and how effectively they deal with, given environmental occurrences and circumstances. As Pearlin et al. (1981) long ago noted, this fact has pointed toward hypotheses that various factors may moderate or mediate the connection between social stress and health related outcomes

Social Support. A huge literature is now available attesting to the direct and stress moderating significance of social support in relation to physical and mental health (e.g., Cohen and Wills 1985; Kessler et al. 1985; Turner 1983; Turner and Marino 1994; Turner and Turner 1999; Uchino et al. 1996; Vaux 1988; Veiel and Baumann 1992). Indeed, on the basis of a careful review of prospective mortality studies that included consideration of various alternative hypotheses, House et al. (1988, p. 544) have concluded that "social relationships have a predictive, arguably causal, association with health in their own right."

There is also specific and consistent evidence that lack of social support is a risk factor for coronary heart disease (CHD) onset and prognosis (Bunker et al. 2003), and is associated with reduced immunological function (Uchino et al. 1996; Cohen et al. 1997). In addition, findings have been reported suggesting that social support demonstrates a main effect with respect to blood pressure (Strogatz et al. 1997) and also buffers the impact of high stress on systolic blood pressure (Karlin et al. 2003; Berkman et al. 1993). These findings are consistent with the argument of Rowe and Kahn (1987) proffered more than two decades ago that lack of social support may be associated with greater biological aging (or "weathering" in Geronimus' terms), and hence with increased susceptibility to the diseases of aging. Finally, social support, primarily in the form of supportive or positive family relations, has been shown by a number of investigators to be of significance for substance abuse and other problem behaviors (e.g. Jessor et al. 1995; Resnick et al. 1997; Wills et al. 1997).

This mass of evidence documenting the health significance of social support notwithstanding, it is now clear that not all relationships, even those that are very close, are uniformly positive (Rook 2003) and that negative aspects of relationships may be more consequential than positive aspects, at least with respect to mental health outcomes (Finch et al. 1999; Rook 1984; Newsom et al. 2005). Accordingly, researchers should routinely assess both positive and negative aspects of primary relationships.

Self-esteem and Mastery (Personal Control). Primary, among other variables that have shown either direct or moderating/mediating power with respect to mental health and substance use problems in a broad range of populations, are those of mastery (Pearlin and Schooler 1978; Pearlin et al. 1981; Gecas 1989; Turner and Roszell 1994) and self-esteem (Kaplan 1975, 1980; Rosenberg et al. 1989; Turner and Roszell 1994). With respect to physical health, a variety of studies have found mastery to be a strong predictor of general physical health status (Caputo 2003; Forbes 2001; Pudrovska et al. 2005). In addition, a 35-year longitudinal study found mastery to be inversely related to blood pressure and to be a significant predictor of cardiovascular well-being (Russek et al. 1990). There is also research demonstrating a small but consistent relationship between self-esteem and physical health (Antonucci and Jackson 1983; Gidron et al. 2006; Krol et al. 1994).

Additional personal resources/attributes that may directly influence physical and mental health or condition the effects of social stress have received somewhat less attention. These include optimism, mattering, emotional reliance, and "John Henryism."

Optimism. Based on both animal and human research, it has been suggested that optimism is associated with immune function, risk for cancer, and longevity (Seligman 1990). Other research employing largely prospective designs has confirmed a linkage between optimism and both physical and mental health (Scheier and Carver 1992), and evidence for its significance for the course of symptoms and disorder (Fournier et al. 2002; Scheier and Carver 1985; Scheier et al. 1989; Segerstrom 2007). There are grounds for hypothesizing that optimism constitutes an effective moderator of the health impact of adverse experiences and circumstances.

Mattering. Rosenberg and McCullough (1981) conceptualized mattering as a primary motivator of the self-concept rooted in beliefs that (1) others are dependent upon us;

(2) we are the object of others' attention; (3) we are important to others; and (4) that others see our lives as an extension of their own. The perception of mattering, "simply put, is an existential belief in our own relevance to others" (Lewis and Taylor 2009, p. 275). This perception shares conceptual linkages with other aspects of the self such as self-esteem and mastery, which have been studied in far greater detail. Self-esteem and mastery may be viewed as important, if not necessary, requisites for establishing the satisfying and mutually-supportive relationships that foster the perception of mattering. Mattering has been found, however, to be empirically distinct from self-esteem and mastery (Elliott et al. 2004; Marcus 1991; Rosenberg and McCullough 1981; Taylor and Turner 2001), supporting Rosenberg and McCullough's (1981) hypothesis that, "To feel that we matter to others is conceptually distinct from feeling that they think well of us" (p. 168). In addition, the perspective that mattering, like other dimensions of the self, is an important dimension of psychological well-being is supported by research demonstrating that perceptions of mattering are negatively associated with psychological distress or depressive symptoms (Pearlin and LeBlanc 2006; Rosenberg and McCullough 1981; Schieman and Taylor 2001; Taylor and Turner 2001; Turner et al. 2004). There appears to be little or no extant research assessing the significance of mattering for physical health status.

Emotional Reliance. This term represents the principal dimension of Hirschfeld and colleagues' (Hirschfeld et al. 1977) construct of "interpersonal dependency." The central hypothesis associated with the construct is that individuals who rely almost exclusively on the approval and attention of others for their sense of personal worth are more vulnerable. They found such reliance to be predictive of depression. Subsequent research has reported that emotional reliance increases risk for poor health and substance problems as well as depression (Bornstein 1992; Hirschfeld et al. 1983; Turner and Turner 1999). Although little specific evidence is available, it has been argued elsewhere that the effects of social stress may be importantly amplified by the level of emotional reliance (Turner et al. 2004). I am not aware of any studies that have examined race differences in emotional reliance or in the health significance of such reliance. However, some evidence suggests that higher levels of SES are associated with lower levels of emotional reliance. Given the linkage between race and SES, emotional reliance is also likely to be unequally distributed across race, raising a question of whether emotional reliance differentially influences risk for adverse health outcomes.

John Henryism. John Henryism, referring to "a strong behavioral predisposition to cope in an active, effortful manner with the psychosocial stressors of everyday life" (James et al. 1992, p. 59), appears to be implicated in racial differences in blood pressure (James 1994; James et al. 1983; James et al. 1984; James and Thomas 2000). Among African Americans scoring high in John Henryism, lower levels of SES have been found to be associated with increased risk for hypertension. This synergism between SES and this behavioral predisposition suggests that the significance of social stress for health, variously and collectively defined, may be elevated in the presence of high levels of John Henryism. Adoption of the relatively comprehensive assessment of variations in stress exposure specified in the Fig. 1.1 model would allow estimation of the extent to which this personal predisposition

or attribute amplifies the stress-health linkage and an examination of the social, contextual, and familial circumstances under which such amplification is minimized and maximized.

The preceding review of the components of the model specified in Fig. 1.1 represents an elaboration of Pearlin's work in just three respects. First, it extends the explanatory application of the model beyond emotional and behavioral problems, where most work has focused, to include physical health status, thereby allowing at least some progress in resolving the misclassification problem. Second, it expands efforts to more adequately estimate variations in stress exposure. Finally, it expands somewhat on the range of personal resources considered. While these elaborations may well advance our capacity to uncover the origins of racial and SES health disparities, the model and the assumptions that underlie it remain those set forth by Leonard I. Pearlin. Principal among these assumptions, which have informed more than a generation of mental health researchers, are that stress is a process involving substantially more than the number and severity of stressors and that both stress exposure and the model factors hypothesized to mediate or moderate the health consequences of social stress arise out of the conditions of life to which the individual has been and is being exposed. As suggested above, the case that the model presented offers real promise of advances in the service of reducing health disparities owes a great deal indeed to the theoretical and empirical contributions of Leonard Pearlin.

Concluding Comment

It is a significant social advance for the National Institutes of Health to highlight race and SES disparities in health as a problem of monumental significance that both deserves and requires the highest priority among both service providers and health researchers. Quite aside from, and independent of, the goal of honoring the work and achievements of Leonard I. Pearlin, the objective of this paper has been to demonstrate the immense promise of the model he contributed for advancing the contribution of sociology toward understanding the origins of such disparities. As documented above, there are considerable grounds for contending that the principal conceptual path contributed by Pearlin, that has guided the work of many researchers across nearly three decades, promises significant future contributions. There can be no greater legacy than work of enduring utility in the effort to reduce health related misery and its unequal distribution across race/ethnicity and socioeconomic status. Thank you Len.

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Chapter 2
Compensatory Coping with Stressors

Peggy A. Thoits

One of the pleasures of preparing for this volume was the opportunity to re-read Leonard Pearlin's papers, discovering again the depth of his sensitivity to and respect for people who are undergoing hardships and troubles. Pearlin insisted repeatedly in his work that our job is to understand how people cope with ordinary problems in their lives, not rare or extraordinary ones. He kept his eye firmly fixed on the very difficult, sometimes intractable, problems that wear away people's coping resources, despite their best efforts. Pearlin never blamed the victim in his research because he was exquisitely aware that structural and interpersonal constraints can keep people entrapped in roles that are strain-filled and damaging. In that spirit, the focus of this paper will be on people in situations that are persistently or increasingly stressful in the long run.

In one of his many classic papers, Pearlin, along with Carmi Schooler (1978), examined the variety of ways in which individuals cope with persistent problems in their lives. Pearlin and Schooler subdivided a range of coping strategies into three broad types, what could be called problem-focused, emotion-focused, and meaning-focused strategies. In my view, meaning-focused strategies have not gotten the attention that they deserve, despite Pearlin and Schooler's compelling findings some thirty years ago. Meaning-focused coping refers to re-framing the meaning or significance of a stressful situation in an attempt to reduce its emotional impact. When examining how individuals coped with a range of difficulties in marriage, parenting, work, and finances, Pearlin and Schooler found that problem-focused strategies were generally more effective in role domains in which people had greater control (typically marriage and family) while emotion-focused and meaning-focused strategies were more useful in domains where personal control was lower (work, finances). Particularly efficacious, they found, was the meaning-focused strategy of devaluing the importance of work or money for those who were facing chronic difficulties in the occupational and financial domains of life.

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Consistent with Pearlin and Schooler's observations in this classic study, a number of theorists have noted that individuals who are experiencing stress or failure in a specific domain of endeavor can protect themselves by devaluing the importance of the domain and withdrawing from it as much as situational constraints will allow (e.g., Breakwell 1986; Gecas and Seff 1990; Goffman 1963; Kaplan 1996; Rosenberg et al. 1995; Sieber 1974). These theorists also note that individuals can further protect themselves by investing in alternative, more rewarding arenas of activity. This more elaborate response to persistent stressful circumstances combines a meaning-focused strategy with a problem-focused one (devaluation followed by re-investment of the self in other domains), a natural extension of Pearlin and Schooler's delineation of the various ways that individuals can think and act to defend themselves.

I characterize people's re-investment of self in less-troublesome arenas of life as *compensatory coping*. To compensate, according to Webster's dictionary (1966), means "to make up for" or "be a counterbalance to." In effect, the person attempts to minimize the psychic costs of continued troubles in one area of life and to offset those costs with the psychic rewards that can be drawn from another. The person who compensates should exhibit higher self-regard and lower emotional distress than the person who does not.

Although compensatory thoughts and acts are familiar phenomena and are usually thought to have beneficial effects, their psychological consequences have rarely been examined in the stress literature, to my knowledge. Most work on compensatory coping can be found in the disability, aging, and deviance literatures, where the primary focus has been on losses of physical or cognitive abilities and on the ways individuals make up for or circumvent ability deficits (for reviews see Backman and Dixon 1992; Baltes 1997). The mental health consequences of compensatory acts in response to social stressors generally have gone unexplored, with some exceptions (Hughes and Degher 1993; Li 2007; Moos 2007; Shih 2004). So following in Pearlin and Schooler's footsteps, the focus here will be on people's compensatory efforts in response to persistent troubles and failures in three adult role-identity domains – marriage, parenthood, and work. The goal will be to show that altering the meaning of a stressor is effective in bolstering self-esteem and alleviating distress when it is accompanied by increased involvement in alternative rewarding activities. Support for this hypothesis will confirm and further extend Pearlin and Schooler's findings regarding the psychological benefits of meaning-focused coping strategies.

Theoretical Expectations

It is important to consider the conditions under which one might expect to see attempts at compensation. There is some theoretical and empirical disagreement in the literature regarding the probability that a person will withdraw from a domain of activity (cognitively, behaviorally, or both) when facing stress or adversity.

A number of stress theorists who draw from the symbolic interactionist tradition have argued that when individuals encounter difficulties, perform poorly, or lack positive feedback and rewards in a role-identity domain, they are likely to cease viewing that domain as self-defining and to perform it less actively or often (Breakwell 1986; Ebaugh 1988; Kiecolt 1994; McCall and Simmons 1978). This argument is based on the assumption that people define themselves, at least in part, in terms of their social roles and activities (hence the often-used term "role-identity") and that people evaluate themselves as worthy and competent on the basis of their role performances and the validating reactions of their role partners (e.g., Cooley 1902; Mead 1934; McCall and Simmons 1978; Stryker 1980). Because poor performances are greeted with social disapproval which in turn engenders painful self-disapproval, the individual is motivated to withdraw from the role-identity both subjectively and behaviorally. In short, when stress is high and rewards are low in a role-identity domain, the person will be motivated to de-identify with the role and to decrease or cease role enactment, if possible.

On the other hand, a number of psychologists have argued that encountering adversity can strengthen an individual's commitment to a role or activity and thus fuel his/her efforts to perform it competently and often (e.g., Ethier and Deaux 2001; Lydon and Zanna 1990; Wortman and Brehm 1975). Rather than withdrawing defensively, the person responds to challenges or obstacles with heightened commitment and redoubled efforts to overcome them, especially when the domain was very important to the individual in the first place (Ethier and Deaux 2001; Lydon and Zanna 1990). Along similar lines, Burke (1991) has argued that individuals who receive negative feedback about their identity performances will increase attempts to bring their performances back in line with their identity standards. These lines of argument echo Swann's self-verification theory (Swann et al. 1992a, b). Swann has posited and repeatedly shown that inconsistent feedback about an important aspect of the self produces efforts to reaffirm one's self-views; in essence, persons are motivated to maintain consistent self-conceptions (see also Rosenberg 1979). Thus, there are theoretical reasons to expect greater, rather than lesser, subjective and behavioral investment in a threatened activity or role with which an individual is identified.

Although these predictions about responses to stressors or adversity are contradictory, they can be integrated if one takes the timing and the success of individuals' problem-solving efforts into account. Wortman and Brehm (1975) point out that repeated failures to overcome problems in an important arena should eventually cause a person to withdraw his/her commitment and involvement. Initially, most people respond to setbacks or difficulties in an important domain by increasing their cognitive and behavioral investment in it. If their attempts to solve problems are successful, their investment in the arena should remain high. However, if adversity cannot be overcome and continued striving becomes costly or punishing, it seems likely that most people will devalue the importance of the activity and decrease their behavioral enactment, if withdrawal is situationally possible. In short, over time, unsolvable or persistent problems in a role-domain should result in de-identification and nonperformance, when practicable. Because in this paper I examine individuals'

responses to persistent or increasing difficulties over a relatively long time period (two years) in roles that have not been exited, I expect to find lowered rather than heightened role investment.

Although reducing the subjective importance of a role may protect self-esteem and reduce emotional distress, this meaning-focused coping strategy has an undesirable side-effect – it deprives the individual of one of the foundations upon which his or her self-definition and positive self-regard are built (Thoits 2003). Because of this consequence, this coping strategy may not be used by itself. To offset or counterbalance such loss, two solutions seem possible. First, individuals can pour themselves into other roles that they hold that are more satisfying or absorbing. We speak of people burying themselves in their work when things are going wrong at home or investing more deeply in church or volunteer activities to compensate for unrewarding jobs or relationships. Sieber (1974) argued that the ability to redistribute one's commitments is a major advantage of holding multiple roles – the person can "fall back on" other roles when one of them becomes strain-filled or devoid of gratification. Gecas and Seff (1990) provide suggestive indirect evidence that such re-allocations of self-investment do occur when the psychological centrality of a particular role (work or home) is low.

Second, persons can deliberately acquire new roles or activities in which to invest themselves – they might enroll in a class, take up sports or fitness activities, start a love affair, or join a prayer group. Entrance into new roles, especially into voluntary roles, enhances multiple aspects of psychological well-being (Li 2007; Thoits 2003; Thoits and Hewitt 2001). By adding one or more gratifying roles to their lives, individuals can potentially counteract the continuing distress or despair that they experience when another arena of their lives is filled with strain or failure. People are more likely to exercise agency in these compensatory ways when they are structurally or culturally constrained from abandoning a role which has become persistently stressful.

Three things are important to emphasize at this point. First, compensatory coping is by no means inevitable nor is it the only solution to inescapable stress; individuals may simply resign themselves to continuing hardship in one arena of their lives instead. Second, persons with more coping resources and fewer symptoms of distress or disorder will be better equipped to pursue compensatory strategies because these involve the exercise of personal agency (Thoits 2003, 2006). The individual deliberately cultivates alternative sources of personal gratification in order to counterbalance the draining emotional consequences of a stress-filled role. Third, I have argued that people engage in compensatory efforts because they have been unable to reduce or eliminate problems in a previously important role domain. Therefore, those stressors will continue to exert effects on their well-being, and they may be offset by compensatory efforts only in part. In short, persons who engage in compensatory coping should be better off psychologically than individuals who do not attempt these strategies but worse off overall than persons who do not face ongoing hardship in a role domain that is important to them.

In sum, I expect to find that spouses, parents, and employees who are experiencing persistent difficulties in these roles will devalue their importance, as a

self-protective strategy. To the extent that they combine this self-protective strategy with compensatory re-investment in existing roles or in new role acquisition, they should report higher self-regard and lower distress compared to persons who do not engage in such compensatory strategies. However, they should exhibit more self-denigration and greater emotional upset compared to spouses, parents, and employees who have remained relatively free of chronic or increasing strain in these roles.

The Study and Measures

I tested these ideas in a preliminary way by taking advantage of panel data that I collected some twenty years ago in Indianapolis. I used these data despite their age because, unlike most other stress surveys, the structured personal interviews contained information on the importance that respondents attached to a wide range of roles that they held.

Sample. The sample consisted of roughly equal numbers of married and divorced individuals, drawn through random digit dialing and systematic random sampling of courthouse divorce records in Indianapolis in 1988 (Time 1). Respondents who were interviewed at Time 1 were re-interviewed two years later in 1990 ($N = 532$). Their stress experiences, role evaluations, and psychological well-being were assessed at each interview.[1]

I focused on three sets of respondents – 260 individuals who were married at both interviews, 464 individuals who were parents at both interviews, and 424 persons who were employed at both interviews. Studying people who stay in the same role over the two year period allows assessment of changes in their ratings of the role's importance to them.

High Role Strain. I defined people as in strain-filled roles if (1) they indicated that the spouse, parent, or worker role was somewhat to very stressful at both time points or that it had increased to these levels of stress by the second interview; *or* (2) they were somewhat to very dissatisfied with their marriages, their parenting experiences, or their work situations at both interviews, or their initial satisfaction had changed to dissatisfaction by the second interview; *or* (3) they rated their performances as spouses, parents, or employees as inadequate at both time points, or their self-ratings fell into the inadequate range by Time 2 (scores of 4 or lower on seven-point scales anchored at 1 = "extremely poor/unsuccessful" and 7 = "extremely good/successful").[2] Using these criteria, 32% of all married individuals were in strained

[1] Details about the sampling methods and the sample composition can be found in Thoits (1992, 1995).

[2] I use stressfulness, dissatisfaction, and inadequate role performance as alternative indicators of difficulties in a role because they capture different sources of ongoing or escalating strain. It is possible to report low ongoing stress in a role but be highly dissatisfied with the situation or dismayed by the poor quality of one's role performance.

marriages; 29% of all parents were in difficult parenting situations; and 28% of all employed persons were in troubled work situations.

Spouse, Parent, and Worker Importance. At both interviews, respondents were asked, "How important to you is being a husband/wife?" "How important to you is being a father/mother?" "How important to you is being a [carpenter/nurse/salesman]?" Possible responses ranged from "not at all" to "very" important on seven-point scales. The importance of other roles the respondents held were evaluated differently. Respondents rank-ordered these roles by choosing "up to three roles that are most important to you," up to three that are "second most important to you," and up to three that are "third most important to you" (coded 3, 2, and 1), with roles that they held but did not place in these categories coded as least important to them, or 0.

Compensatory Coping. I suggested earlier that there are two ways to compensate for persistent difficulties in a role domain – acquire new roles or invest oneself more deeply in some of the other roles that one already holds.

Role acquisition was measured as the net number of roles the respondent gained between Time 1 and Time 2. Roles held at Time 1 were subtracted from the number of roles held at Time 2. It is important to note that individuals actually had to be actively performing any role that was added or lost. For example, it was not enough for a respondent to report that he/she now belonged to a church or voluntary group at the second interview; the respondent had to be going to church services or group meetings at least on an occasional basis for this new role to count as acquired.

It was more difficult to capture the concept of *investing oneself more deeply in roles that are already in one's repertoire*. Other roles that respondents could possess at both time points included student, caregiver, friend, neighbor, church member, group member, volunteer worker, athlete/team member, hobby group member, son/daughter, son/daughter-in-law, and other relative. Because comparable indicators of time and energy commitment to each of these roles were not available in the data, equivalent measures of increased investment in each role could not be constructed. Instead, I counted the number of roles that respondents shifted upward in importance to them by at least two ranks or more from the first interview to the second, as a crude indicator of re-investment in existing roles.[3]

Self-Esteem and Psychological Distress. I examined two outcomes in the analysis: self-esteem and psychological distress. Self-esteem was measured with Rosenberg's (1979) 10-item global self-esteem scale. Respondents indicated their degree of agreement with statements such as "I take a positive attitude toward myself" and "I feel I have a number of good qualities." Responses were summed so that greater scores indicated higher self-esteem.

Psychological distress was measured with the mean of 23 symptoms from the anxiety, depression, and somatization sub-scales of the Brief Symptom Inventory (Derogatis and Spencer 1982). Respondents indicated how much they were distressed

[3] These roles had to have been held at both time points for upward shifts in importance to count as increased investments.

by each symptom over the past month (e.g., nervousness or shakiness inside, feeling blue, trouble falling asleep), with response categories ranging from "not at all" to "extremely" on four-point scales. I focus in this paper primarily on the self-esteem results of the analyses, for brevity.

Summary of Key Findings

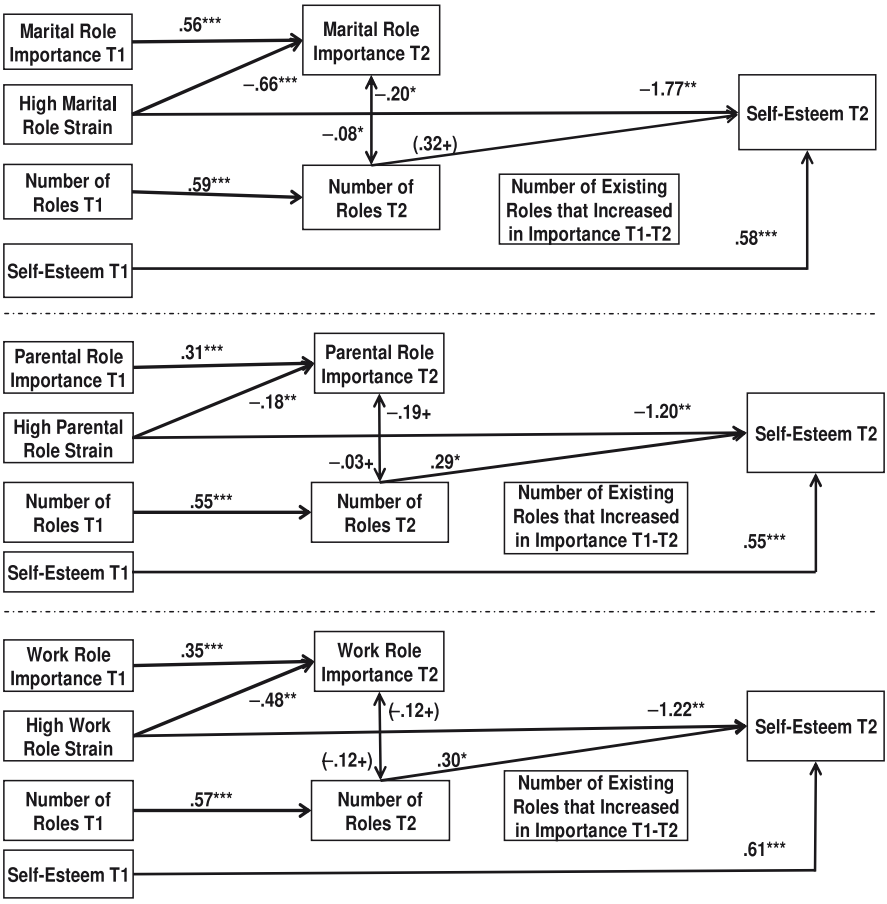
The results of the analyses described in this section are displayed in Fig. 2.1 for spouses, parents, and workers, respectively.

Following from Pearlin and Schooler's (1978) earlier findings, my first expectation was that respondents who were in persistently or increasingly strain-filled role situations would be likely to devalue the importance of those roles for self-conception. To test this hypothesis, I regressed the importance of the marital, parental, or work role to the respondent at Time 2 on its initial importance rating at Time 1 and on the dichotomous indicator of experiencing high strain in the role. Also controlled in all equations were the respondents' sociodemographic characteristics – female (0, 1), age, minority group member (0, 1), education (coded ordinally, by degree), and family income (coded ordinally from 1 = no income to 21 = $76,000 or more). Consistent with Pearlin and Schooler's findings and with symbolic interactionist thought more generally, spouses, parents, and workers who were in highly stressful roles had significantly lessened their ratings of the importance of those roles to them by Time 2.

I then examined whether people experiencing persistent or increasing role strains were more likely to add roles as a compensatory strategy. For spouses, parents, and employees, number of roles held at Time 2 was regressed on the number of roles that were held at Time 1 and on the indicator of high strain in the role. Contrary to my expectations, in all three groups, difficulties in the role did *not* predict the acquisition of new roles.

Next I assessed whether strained-filled roles prompted individuals to invest themselves more deeply in other roles that they already possessed, again as a compensatory strategy. The number of roles held at Time 1 that respondents had shifted upward in importance by Time 2 was regressed on the measure of high strain in the role. Again contrary to expectations, spouses, parents, and employees who were experiencing ongoing difficulties did *not* raise the importance rankings of their other roles; this was true even when the number of roles held at Time 1 was controlled.

I then tested whether each of these coping strategies independently raised individuals' self-esteem, helping to offset the damaging effects of persistent or escalating role strain. I regressed self-esteem at Time 2 on self-esteem at Time 1, the indicator of high role strain, and changes in spouse, parent, or worker role importance from Time 1 to Time 2, changes in the number of roles possessed between the two interviews, and the number of prior roles that respondents ranked higher in importance by Time 2. Initial levels of spouse, parent, or worker role importance and the number of roles held at Time 1 were also controlled in these equations.



Note: Unstandardized coefficients are presented. Among married persons, the coefficient in parenthesis applied only to husbands. Among workers, the coefficients in parentheses applied only to women employees.

+ p < .10, * p < .05, ** p < .01, *** p < .001.

Fig. 2.1 Summary of significant paths for each role domain.

Results showed that ongoing strains in marriage, parenting, and work significantly diminished respondents' self-esteem over time, consistent with stress theory (Pearlin 1999). However, devaluing the importance of the trouble-filled domain did *not* protect self-esteem and raising the importance of other roles did *not* elevate self-esteem, contrary to expectations. Only gaining one or more new roles over time raised individuals' self-esteem significantly for parents and workers, but not

spouses. (Further exploratory analyses revealed that gaining roles over time increased self-esteem significantly for husbands, but not for wives.)

Up to this point, these findings have traced the antecedents and consequences of each coping strategy taken singly. I argued earlier that the *combination* of meaning-focused and compensatory coping strategies should buffer the psychological damage created by persistent or escalating role stress. To test this argument, I added to the previous equations a set of interactions of high role strain with each coping strategy (devaluation, role acquisition, and re-investment).[4] Then interactions of strain with all possible combinations of the three coping tactics were added. As it turned out, all interaction coefficients were non-significant for spouses, parents, and workers.

Disconfirmation of my compensatory coping hypothesis was puzzling and prompted further exploratory analyses. In particular, I looked at the relationships among the three coping strategies for further clues. Correlations showed that investing oneself more deeply in existing roles was not related to the other two coping strategies. However, correlations did suggest a reciprocal relationship between devaluing the problematic role and acquiring new roles for spouses and parents, although not for workers. Two-stage least squares analyses showed that the importance of the spouse, parent, and employee roles and the number of roles held by the respondent were not related simultaneously to one another at Time 2, when I employed the Time 1 values of these variables as their instruments. Consequently, I used ordinary least squares to estimate the effects of changes in these two coping strategies on one another over time. For spouses and parents (but not workers as a group), those who self-defensively decreased the importance of the problematic role for their self-conceptions acquired significantly more new roles over time, and vice versa – those who added new roles tended to devalue the importance of the problematic role domain. (Further exploratory analyses showed that similar relationships occurred for women employees, but not for men.)

Concluding Observations

Taken together, these findings hint that compensatory coping is a more complex process than I had anticipated. A suggestive sequence of events seems to occur (see Fig. 2.2). People who are experiencing persistent or escalating difficulties in an important role domain self-protectively lower the salience of that domain for self-conception. Although this devaluation may help to lessen perceived threat to

[4] The use of each coping strategy was coded (1 = yes, 0 = no). Respondents were coded as self-protectively devaluing the importance of the stress-filled role if their importance ratings of the role declined from Time 1 to Time 2. They were coded as having added new roles if they had a net gain in the number of roles held between the two interviews. And they were coded as having increased their investment in existing roles if their salience rankings of at least one role possessed at Time 1 shifted upward by two ranks or more by Time 2.

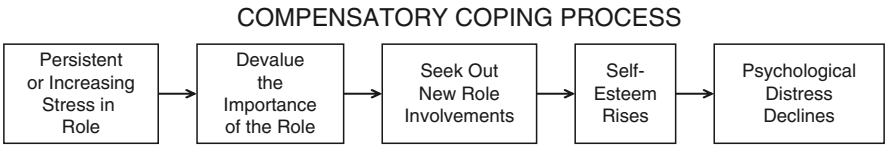


Fig. 2.2 A tentative sequence of steps in the compensatory coping process

the self, it also has the undesirable side effect of depriving the person of a key source of meaning and value in life. To compensate for the diminishment of a previously important aspect of the self, the individual may search for alternative sources of identity or gratification. Acquiring one or more new roles can provide a sense of purpose and satisfaction in life. Successful performance and positive feedback from new role partners raise the individual's self-esteem, which helps to counterbalance, in part, the continuing self-denigration caused by persisting and inescapable problems in the original role domain. Exploratory analyses (not described earlier) additionally suggest that this process can be taken one step further – increases in self-esteem over time significantly reduce individuals' psychological distress and partially mediate the damaging consequences of remaining in a strain-filled role.

As an example of this process, we might expect a woman who finds herself trapped in a low-paying job with high demands, few challenges, and an overly critical boss to experience frustration and an escalating sense of failure over time. Lacking alternative job opportunities, she begins to insist to herself and others that the job does not mean that much to her, although she cannot quit because she needs the pay. Her lessening commitment to the job subtracts meaning and purpose from her life and underscores its lack of gratification. Although some persons might choose to grit their teeth and endure this situation (perhaps becoming seriously depressed in the long run), she does not, deciding on her own initiative (or perhaps prompted by the urging of friends and family) to volunteer in her spare time for a local organization. She finds the volunteer work interesting and intrinsically satisfying and organizational personnel praise her contributions, so that her sense of competence and self-worth rise. Although she continues to suffer frustration and a sense of inadequacy at work, the meaning and rewards derived from volunteering help to counteract these drains on her self-regard, preventing a downward slide toward serious depression. In essence, then, compensatory coping may be an unfolding, somewhat elaborate process rather than a confluence of immediate responses to persistent adversity in an important social domain.

It is important to note that the process that I have outlined was not confirmed but merely suggested by the results of my analyses. My samples of spouses, parents, and workers were small, so statistical power to detect effects was low; reverse causality remained a potential problem at several steps in the model; and the effects that I obtained were not fully consistent across the three roles that I examined. Relationships among variables in the models may have been weakened further because pursuing compensatory activities requires the exercise of personal agency, but many people are constrained in the choices that they can make.

Structural constraints were unobserved in these analyses. Finally, some of the measures of key constructs were crude, particularly my measure of respondents' deeper investment in roles that are already present in their repertoires. Upward shifts in the subjective rankings of these roles are very indirect proxies for respondents' greater investments of time, energy, and self in these alternative role domains. In future work that employs more adequate measures of re-investment, this compensatory coping strategy may turn out to be far more useful as a counterbalance to the effects of stress than the present study suggests.

Despite such limitations, these exploratory results demonstrate that compensatory coping does occur and can have mental health benefits. Most importantly, the findings underscore the theoretical relevance of a category of coping that Pearlin and Schooler (1978) delineated some thirty years ago – meaning-focused coping. Typically, this type of coping is subsumed under the broader construct of emotion-focused coping by researchers following Lazarus and Folkman's lead (1984). Pearlin and Schooler's classic findings indicate that the cognitive strategies people use – strategies that reframe the meaning of stressful circumstances for the self – deserve further close attention as potentially powerful stress-buffers in their own right (see also Park and Folkman 1997). In the spirit of Pearlin's lifetime of work devoted to uncovering the nuances and subtleties of individuals' adaptations to the hardships in their lives, I have attempted to trace out the consequences of one meaning-focused coping strategy that he identified, devaluing the importance of a stress-filled domain. These results here suggest that changing the meaning of a stressor for the self can provoke additional life changes that counteract some of the harmful effects of relentless or intensifying adversity.

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Chapter 3
Neighborhood as a Social Context of the Stress Process

Carol S. Aneshensel

A fundamental objective of the stress process model is to explain the connection between low social status and high levels of psychological distress and disorder (Pearlin 1989, 1999; Pearlin et al. 1981). This goal has been realized, in part, through the elaboration of the connection between exposure to stressors and status locations within various institutions and social arrangements – education, occupation, economy, gender, and race/ethnicity. In addition, the model articulates the role of low social status in limiting access to psychosocial resources that might otherwise ameliorate the adverse mental health impact of exposure to stress.

Applications of the model that emphasize social status generally treat social status as an attribute of the individual, for example, the person's educational attainment. However, Wheaton and Clarke (2003) call attention to the relevance of contextual social inequality to the stress process, conceptualizing inequality as existing across multiple layers of the social hierarchy. In addition, Pearlin's (1999) recent formulations of the stress process model also call attention to the importance of context, accentuating the neighborhood in particular. In this regard, neighborhood socioeconomic disadvantage can be conceptualized as a meso-level indicator of the stratification of neighborhoods that intensifies exposure to stressors and restricts access to social psychological resources, thereby damaging health and emotional well-being.

In this chapter, I review research linking neighborhood to domains of the stress process and then describe an ecological model built around the idea that the mental health impact of the neighborhood may be *conditional* upon the person's social status, exposure to stress, and access to psychosocial resources.

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Neighborhood: The Concept

As a prelude, an overview of the concept of neighborhood is instructive for understanding the several research traditions that link neighborhood to stress and mental health. First, I define neighborhoods as clusters of people living in close proximity to one another within a particular geographical area. Next, three dimensions of neighborhood are distinguished: *spatial*, *structural* and *social* (Aneshensel and Sucoff 2002). Spatial dimensions are the physical boundaries of the neighborhood, its connection to the geographical area. The area within these boundaries is the "container" for social interactions among residents. One approach to operationalizing the spatial dimension relies on official boundaries, most often Census tracts, an expedient approach that facilitates the use of official compilations of information about the neighborhood, for example, linking Census tract information to existing survey data about individuals living in the tract. Another approach also takes into consideration the informal boundaries that residents use to separate one neighborhood from another.

The structural dimension of neighborhood is the composite socioeconomic and demographic characteristics of the individuals who reside within the geographical area in the sense that the whole comprises its components. This neighborhood profile accentuates traits generally shared by residents even though not all residents posses these traits, a point I will return to later. For example, if most residents of a neighborhood are African American, the aggregate neighborhood is one with a high concentration of African Americans, but it also contains residents of other racial/ethnic backgrounds. Most studies focus on socioeconomic disadvantage and to a somewhat lesser extent racial/ethnic segregation as the key structural characteristics of neighborhood; others also address residential stability. Wheaton and Clarke (2003) provide a succinct definition of neighborhood socioeconomic disadvantage, the simultaneous absence of economic, social, and family resources (cf. Ross and Mirowsky 2001). Measures of neighborhood socioeconomic disadvantage typically include indicators such as the percent below the poverty line, receiving public assistance, overcrowded households, female-headed single parent households, and youth idleness (e.g., aged 16–19 not in school, armed forces, or labor force, and not a high school graduate). This chapter focuses on neighborhood socioeconomic disadvantage because it is the most consistently studied structural characteristic.

The social dimension of the neighborhood refers to the nature of the interactions that transpire within its confines, which are influenced by social norms, culture, and the like. One social function, the normative control of behavior, figures prominently in neighborhood approaches that emphasize the role of disordered neighborhoods in generating stress and psychological distress (e.g., Ross and Mirowsky 2001). Also relevant are processes that pertain to social psychological mechanisms in the stress process, specifically the perception of neighborhood social cohesion.

Of these three dimensions of neighborhood, the last two – structural and social – are most relevant to establishing the connections necessary to situate the stress process within a neighborhood context whereas the spatial dimension is used to delineate neighborhood boundaries. If neighborhood structural properties influence mental health outcomes by way of the stress process, then mental health outcomes

necessarily vary with these structural properties. The first body of research reviewed below examines evidence in support of this crucial connection. The dynamics of the stress process occur within the social dimension of neighborhood, specifically the ways in which neighborhood conditions regulate exposure to stress or shape access to social psychological resources that alter the impact of stress exposure on mental health outcomes. Research in this second tradition also is reviewed below.

These reviews are followed by a discussion of how these largely separate lines of research could be better integrated. I then develop an ecological model that extends the integrated model by including *conditional* relationships between domains of the stress process model and structural aspects of the neighborhood context.

Neighborhood Structure and Mental Health

The Structural Model

Structural research is built upon a key aspect of the definition of neighborhood, the *clustering* of people within a geographical area. Although these clusters are comprised of the individuals, the clusters have attributes that are conceptually distinct from those of individuals. In other words, neighborhood characteristics are characteristics of the aggregate neighborhood. For example, the proportion of neighborhood residents who live below the poverty line is a characteristic of the neighborhood; at the individual-level, a person either does or does not live below the poverty line.

Thus, the structural model necessarily is a multilevel statistical model with the individual person (*i*) embedded within a particular neighborhood (*j*), as shown in Fig. 3.1, *i* distinguishes one person from another, and *j* distinguishes one neighborhood

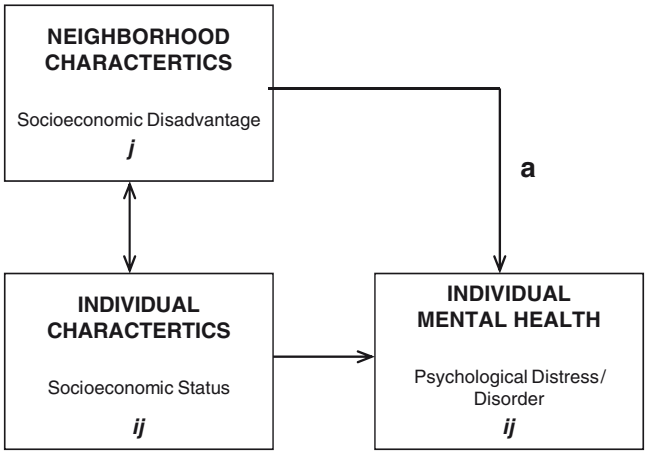

Fig. 3.1 Multi-level structural model of neighborhood effects on mental health

from another. The double subscript *ij* is critical to understanding this model because it refers to the mechanism that connects the two levels, specifically that individual *i* lives in neighborhood *j*. The double subscript indicates that neighborhoods and individuals are conceptually and analytically linked, so that individuals are nested within neighborhoods. The connection between levels also is illustrated by the double-headed arrow that connotes compositional effects as well as selection effects.[1]

In the multilevel model, there are multiple people within each neighborhood and multiple neighborhoods. Consequently, hierarchical linear models are able to differentiate within-neighborhood variation from between-neighborhood variation. Setting aside statistical details, this design means that it is possible to (1) estimate average differences between neighborhoods in the occurrence of mental health outcomes, (2) ascertain whether these differences are due to the characteristics of the individuals who live in that neighborhood (i.e., compositional effects), and (3) determine whether neighborhood characteristics explain mental health outcomes irrespective of the contribution of the individual's own characteristics. The later cross-level effect is labeled **a** in Fig. 3.1.

This pathway is extremely important because it represents meso-level effects that are not merely the summation of parallel effects at the individual level (i.e., compositional effects). For example, disadvantaged neighborhoods may generate emotional distress not simply because poor families live in these neighborhoods and because personal poverty is distressing, but also because disadvantaged neighborhoods are emotionally harmful to non-poor residents as well as poor residents. Neighborhoods characterized by concentrated poverty tend to have a decaying physical environment, a feature associated with public deviance, which leads residents to stay inside their homes, limit social exchanges to only close friends and family, and prompts a breakdown in social connections within the neighborhood (Massey and Denton 1993). This process has potential mental health consequences for *all* residents. This hypothesized cross-level effect is one of the most compelling reasons for testing a multilevel statistical model because its presence attests to the influence of the social system on the individual.

The Structural Model of Neighborhood: Empirical Results

Although the presence of inter-neighborhood differences in average mental health outcomes is a necessary condition for testing for the impact of neighborhood disadvantage as such (Wheaton and Clarke 2003), only a few studies estimate this variation. These studies generally report very small to medium neighborhood variation, connecting neighborhood structure directly to depressive (Aneshensel et al. 2007;

[1] Figure 3.1 is simplified for heuristic purposes. There are numerous other neighborhood and individual characteristics that could and often are included in structural models. Also, structural models have sometimes been elaborated with additional constructs beyond those shown here, such as social capital and collective efficacy (e.g., Stafford et al. 2008; Xue et al., 2005).

Hybels et al. 2006; Stafford et al. 2008; Wheaton and Clarke 2003; Wight et al. 2009), general mental health (Propper et al. 2005), and cognitive outcomes (Wight et al. 2006a). However, some studies report that neighborhood-level variation in mental health outcomes is exceedingly small or not statistically significant (e.g., Wainwright and Surtees 2004). Hence, the evidence is mixed but generally points to sufficient structural variations in mental health to proceed to the question of compositional effects.

Some studies that employ the structural model in Fig. 3.1 – in which individuals are nested within neighborhoods – report that statistically significant between-neighborhood differences in mental health remain after rigorously controlling for individual-level characteristics (e.g., Wight et al. 2006a; Wheaton and Clarke 2003; Kubzansky et al. 2005), meaning that these neighborhood effects are not entirely due to the characteristics of the people who live within the neighborhoods. However, other studies suggest that these effects may indeed be compositional (e.g., Propper et al. 2005; Wainwright and Surtees 2004), at least for some segments of the population, including specifically older persons (e.g., Aneshensel et al. 2007; Hybels et al. 2006; La Gory and Fitzpatrick 1992; Wight et al. 2009). Potential explanations for these divergent findings are discussed below. The most appropriate conclusion to be drawn from these studies is that meaningful between-neighborhood variation in mental health outcomes exist beyond compositional effects for at least some populations, mental health conditions, and geographical regions.

As mentioned above, not many studies apply the structural model illustrated in Fig. 3.1. Instead most studies that examine the relationships between neighborhood-level socioeconomic disadvantage and mental health do not analytically utilize the nesting of individuals within neighborhoods (except when estimating standard errors). In essence, the clustering of individuals within neighborhoods is treated as a statistical artifact rather than a theoretically meaningful structural property. Visualize Fig. 3.1 without subscripts.[2]

Some research in this tradition finds that the association between neighborhood socioeconomic disadvantage and high levels of psychological distress or disorder persist after controlling for individual socioeconomic characteristics. For example, Silver et al. (2002) use data from four sites of the Epidemiologic Catchment Area (ECA) Study to examine neighborhood-level effects on the prevalence of several conditions among adults. This study is noteworthy because appropriate individual-level factors are controlled and because multiple dimensions of the neighborhood are considered, although the reported analysis is at the individual level. They report that

[2]In this type of model, the unit of analysis is the individual and only between-person variation is examined; hence, the design does not permit examination of between-neighborhood variability as such or the factors associated with it (Diez Roux 2003). Although neighborhood data are measured at the neighborhood level, analysis is at the individual level. Thus, this approach is informative about the experiences of people who live in neighborhoods with particular characteristics, but not about whether the structure that generates these characteristics corresponds to between-neighborhood differences in risk of poor mental health outcomes.

net of individual characteristics, neighborhood disadvantage is positively associated with the prevalence of major depression and substance abuse.

One recent longitudinal study is particularly noteworthy because it examines incident major depression in contrast to most other studies that examine prevalence in a cross-sectional design (Galea et al. 2007). These researchers report a two-fold difference in the incidence of major depression in adults living in low socioeconomic status (SES) compared to high-SES urban neighborhoods (New York City), net of individual-level sociodemographic characteristics, and known risk factors for depression (e.g., stressors, social support). Because their analysis controls for factors that may be conceptualized as mediators rather than cofounders, their analysis over-controls for individual-level factors, meaning that the incidence difference may be even greater than estimated (cf. Sampson et al. 2002; Wheaton and Clarke 2003). The researchers conclude that additional work is needed to characterize the pathways that may explain the observed association between living in low-SES neighborhoods and elevated risk for depression, a topic taken up in the next section.

In strong contrast, some other studies find that initially strong associations between neighborhood socioeconomic disadvantage and mental health outcomes are *not* sustained when individual social and demographic characteristics are taken into consideration. For example, Henderson and colleagues (Henderson et al. 2005) analyzed data on young adults (ages 28–40) from the Coronary Artery Risk Development in Young Adults Study (CARDIA) and found that neighborhood socioeconomic disadvantage is not consistently related to depressive symptoms across race and gender subgroups once individual socioeconomic characteristics are taken into account.

In sum, some studies find neighborhood socioeconomic disadvantage affects mental health outcomes beyond rigorous controls for individual characteristics, but other studies find only compositional effects. How can these discrepant findings be reconciled? It is almost certain that some of the discrepancies are methodological artifacts. Studies differ widely in samples, methods, measures, and statistical methods. The most challenging methodological issue is whether there are sufficient individual-level controls to test adequately for compositional effects, although Wheaton and Clarke (2003) and Sampson et al. (2002) argue that some studies may be over-controlled. Also, there is debate about the appropriateness of controls at the individual level referred to as the "partialling fallacy." For example, the influence of personal income is itself mediated by the environment and made possible by that environment (Macintyre and Ellaway 2003). In addition, it may well matter what type of mental health outcome is being examined (Aneshensel and Sucoff 1996). For example, socioeconomic disadvantage may be more consequential for depressive outcomes, whereas other neighborhood characteristics may be more relevant to substance abuse/dependence. My best conjecture is that these discrepant findings may reflect the conditional nature of neighborhood effects, that is, that neighborhood socioeconomic disadvantage may be emotionally distressing, but only for some segments of society (see below). For example, neighborhood socioeconomic disadvantage may be most distressing for persons who are themselves impoverished, so that neighborhood effects will be detected in samples of impoverished populations that may not be detected in more heterogeneous samples because the overall effect is averaged out

across the sample that also includes affluent persons. Given that several studies with rigorous individual-level controls continue to report associations between mental health outcomes and neighborhood disadvantage, it is reasonable to consider the pathways that link disadvantage factors to these outcomes.

The Stress Process Model of Neighborhood and Mental Health

The Social Model Interpreted as the Stress Process Model

The quintessential feature of the application of the stress process model to neighborhood effects on mental health is an emphasis on articulating the social *pathways* that connect structural neighborhood disadvantage to mental health outcomes (Aneshensel and Sucoff 1996). Research in this tradition tends to focus on perceived neighborhood disorder as a core mediator of this association, as illustrated in Fig. 3.2. Neighborhood disorder such as the presence of crime, vandalism, unsupervised youth, abandoned buildings, loitering and so forth, refers to physical and social signs that social control is lacking, resulting in a neighborhood that is experienced as threatening and noxious and that arouses fear (Ross and Mirowsky 2001).

From the stress process perspective, perceived neighborhood disorder can be viewed as a secondary stressor that arises from the objective primary stressor of

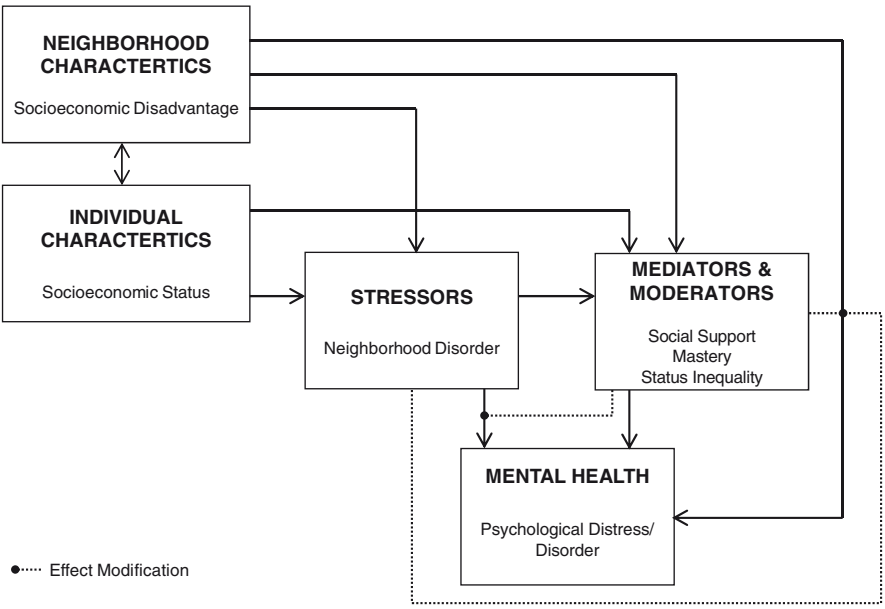

Fig. 3.2 Stress process model of neighborhood effects on mental health

neighborhood disadvantage via the process of stress proliferation (Pearlin 1999). As a secondary stressor, neighborhood disorder *mediates* the impact of neighborhood disadvantage. For this to occur, the two stressors need to be associated with one another.

Ross and Mirowsky (2001) summarize theoretical reasons why this should be the case. Specifically, they posit that neighborhood disadvantage leads to neighborhood disorder in part because (1) limited opportunities lead youth to leave school and engage in illegitimate activities, (2) normative climates are conductive to disorderly behavior, (3) informal social ties that help maintain social order are lacking, and (4) there are few institutional resources that bind neighbors together and help maintain social order (cf. Wilson 1987). In contrast, they describe advantaged neighborhoods as having the assets, capabilities, and self-interests that are conducive to safety.

In this regard, Massey and Denton (1993) describe a mutually reinforcing relationship between social decay and social withdrawal. When residents experience neighborhood disorder, they tend to retreat socially and psychologically from their communities; they stay away from certain sites, avoid strangers, remain indoors, and generally keep to themselves. According to Massey and Denton (1993), the withdrawal of residents from active community life loosens surveillance and control over behavior, permitting a growth in increasingly serious social problems and criminal acts. This intensification then leads to greater social withdrawal, a further loosening of social controls, and an accelerating spiral of community instability and decline. Faris and Dunham (1939) originally linked such neighborhood deterioration to rates of schizophrenia and substance abuse (but not affective disorders), positing a linkage through social isolation. From the perspective of the stress process, then, we can anticipate that the mental health impact of neighborhood disadvantage will be mediated by increases in the secondary stressor of neighborhood disorder and by decreases in the resources for social support (Aneshensel and Sucoff 1996).

The Stress Process Model of Neighborhood: Empirical Results

Schieman and Pearlin (2006) provide evidence for this crucial link by demonstrating that neighborhood disadvantage is positively associated with perceived neighborhood disorder. However, they find that this association is conditional upon financial social comparisons to neighbors. Specifically, the association between objective and subjective aspects of neighborhoods is weakest for persons who feel relatively similar to their neighbors and is strongest for those who feel relatively advantaged and those who do not know their financial standing. This research indicates that neighborhood disadvantage does not uniformly inform residents' assessment of their neighborhood, but that this connection is conditional upon psychosocial factors.

Ross (2000) demonstrates the mediating role of perceived neighborhood disorder by showing that all of the association between neighborhood disadvantage and adult depressive symptoms is accounted for by these perceptions. In addition, Ross et al. (2000) report a more complex mediating role for perceived neighborhood

disorder in that it accounts for the conditional relationships between neighborhood disadvantage and residential stability with regard to psychological distress.

However, this association may not be uniform for all segments of the population. For example, Schieman and Meersman (2004) examine whether the effect of perceived neighborhood disorder on mental health is uniform or varies by key moderators in the stress process model, namely social support and mastery (see Fig. 3.2). Their results are complex because they examine multiple moderators (received support, donated support, and mastery) for multiple outcomes (anger, anxiety, and depression) separately for men and women. Although they report some protective effects for received support and mastery and aggravating effects for donated support, their overall conclusion is that the moderating effects of these psychosocial resources are not as consistent as the stress process model posits. The key point, however, is that under some circumstances, for some subgroups, and for some outcomes, the impact of neighborhood disadvantage on mental health via the intervening variable of neighborhood disorder is conditional upon the person's psychosocial resources and liabilities.

Evidence concerning another key connection in the stress process model of neighborhood is provided by Schieman (2005) who examines the connection between neighborhood disadvantage and social support, contrasting the social disorganization perspective, which predicts declining support with increasing disadvantage, with the social mobilization perspective that predicts the opposite (cf. Wheaton 1985). A key aspect of this study is the interaction reported between two neighborhood characteristics, disadvantage and residential stability with regard to effects on received and donated support. Effects vary by race and gender as well. In other words, contextual effects on social support are conditional upon other contextual factors *and* personal characteristics.

An Ecological Model of the Stress Process

The Structural and Stress Process Model Integrated: The Ecological Model

Thus far, we have seen that some, albeit not all, multilevel research using the structural model of Fig. 3.1 demonstrates between-neighborhood variation in mental health outcomes that is not merely compositional. We also have seen that research using the stress process model of Fig. 3.2 links neighborhood disadvantage to mental health via the pathway of perceived neighborhood disorder, a connection that may be conditional upon two key moderating variables in the stress process model, social support, and mastery.

Research that integrates these two lines of research, however, is rare (see Wheaton and Clarke (2003) for an exception). This scarcity largely results from methodological considerations, specifically that the multilevel structural model

necessitates multiple observations per neighborhood, a condition not met by many of the existing survey data sets that are used in neighborhood research (e.g., Project on Human Development in Chicago Neighborhoods [PHDCN], Earls et al. 1997; Los Angeles Family and Neighborhood Survey [LAFANS], Sastry et al. 2006, for exceptions of studies specifically designed for multilevel analysis). Nevertheless, these two lines of research collectively point to new directions in situating the stress process within the neighborhood context.

Combining these two models produces an integrated model in which inter-neighborhood variation in mental health is influenced on the one hand by the structural properties of neighborhoods and on the other by exposure to stress and access to psychosocial resources (and other individual-level characteristics). This integrated model is, in its simplest form, an additive model. The impact of neighborhood socio-economic disadvantage and the domains of the stress process are the sum total of each stream of influence. As such, the model contains the hidden assumption that the mental health effects of neighborhood disadvantage are the same across diverse personal characteristics and stress-related circumstances. For instance, neighborhood disadvantage is equally distressing to a socially isolated person as it is to someone who is at the center of a network of family, friends, and acquaintances. I refer to this model as a "person in environment" model because it places the person within an environment, but does not examine how the person stands in relation to that environment. The conceptual limits of this model are self-evident and need not be belabored.

The ecological model of the stress process that I propose takes this synthesis a step forward by positing a "person environment fit" approach in which the impact of the environment varies from person to person as a function of personal attributes and situations, in this instance personal disadvantage, exposure to stress, and access to psychosocial resources. My use of this term echoes Lawton (1982) who uses the term to hypothesize that optimal outcomes occur when the "press" of the neighborhood environment corresponds to the "competencies" of the individual. This ecological model, developed from the work of Bronfenbrenner (1979), is similar to the structural model in that the individual is seen as being embedded in and affected by multiple social contexts. Whereas the structural model emphasizes differences between neighborhoods and homogeneity within neighborhoods, the ecological model calls attention to heterogeneity within neighborhoods. For example, although neighborhoods are differentiated from one another by the level of neighborhood disadvantage, and the persons living within a disadvantaged neighborhood are on average disadvantaged, some residents are worse off than average whereas others fare better than average. This heterogeneity means that the same neighborhood may have different mental health effects among persons with dissimilar characteristics and personal situations.

This heterogeneity is thought to modulate the extent to which neighborhood disadvantage injures mental and emotional well-being. In statistical terms, this contingency implies a cross-level interaction, a term that captures conditional relationships between neighborhood and individual attributes, exposure to stress, and access to psychosocial resources. In its most basic form, the ecological model addresses the critical question of why some people in adverse social contexts are harmed whereas others attain more successful mental health outcomes (cf. Jessor 1993).

From the perspective of the stress process, several possibilities immediately present themselves. The most obvious is the possibility that the mental health impact of neighborhood disadvantage and personal disadvantage interact. In this regard, Wheaton and Clarke (2003, see below) contrast two possible cross-level contingencies, the *compound advantage* model, which predicts that the greatest mental health advantage occurs for those who are personally advantaged and who live with similarly advantaged neighbors, and the *compound disadvantage* model, which predicts the greatest mental health disadvantage for those who are personally disadvantaged and live with similarly disadvantaged neighbors. The compound advantage model is consistent with the relative deprivation model (Jencks and Mayer 1990) but in mirror image; the greatest disadvantage is expected for the disadvantaged who live with advantaged neighbors.

An additional possibility concerns the joint mental health impact of neighborhood disadvantage and the domains of the stress process. For example, neighborhood disadvantage may be most emotionally distressing to persons who have recently encountered an acute life event stressor, to persons whose lives are beset by chronic strains at work, or to those lacking meaningful ties to other people. As we shall see, there is some empirical evidence in support of this ecological model of the stress process.

Ecological Model: Empirical Results

Wheaton and Clarke (2003) provide an exemplar of the ecological approach that elaborates the stress process within a structural model of a neighborhood and also examines contingencies across levels.[3] Of particular note, they theorize a series of secondary stressors that arise from the primary stressor of neighborhood disorder via the process of stress proliferation (Pearlin 1989). For early adult mental health, they posit that the crucial effects of neighborhood disadvantage are indirect, operating through at least three pathways, as illustrated in Fig. 3.3.[4]

One pathway concerns the adverse impact of neighborhood disadvantage on parental mental health, which in turn promotes parenting behavior that is inimical to child/adolescent mental health and subsequently contributes to mental health problems in early adulthood (the lower panel in Fig. 3.3). In support of this connection, they cite research demonstrating that high-threat and resource-poor neighborhoods breed consistently unsupportive and harsh parenting, distraction, and withdrawal of affection. They also suggest that compromised parenting may indirectly affect early

[3] This article emphasizes the intersection of context and time, examining the temporal impact of neighborhood within a life course framework from childhood to early adulthood. However, to emphasize its similarity to the ecological model, I set these life course considerations to the side.

[4] This graphical representation over-simplifies Wheaton and Clarke's (2003) theory and analysis in the interest of clarity. In particular, the influences of individual and family characteristics, essential controls for this multilevel model, are not shown, nor are some potential relationships among the mediating variables.

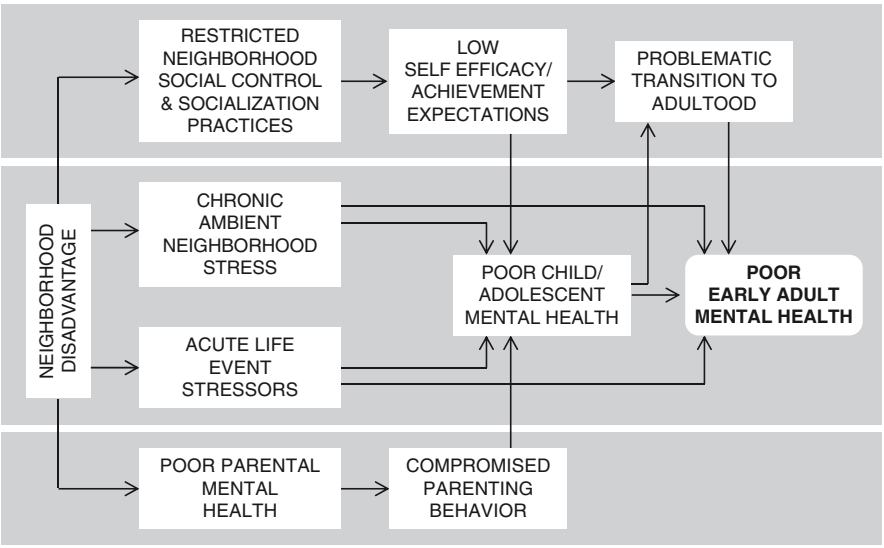

Fig. 3.3 Stress proliferation model of mediated neighborhood effects on mental health. Adapted from Wheaton and Clarke (2003).

adult mental health through its impact on the transitions to adulthood, specifically, disrupted and off-time life course transitions during adolescence such as early termination of education, parenting, and entry into the labor force (cf. Wickrama et al. 2003).

Wheaton and Clarke (2003) also integrate neighborhood research from the crime and delinquency literature (upper panel of Fig. 3.3). Specifically, they call attention to research on collective socialization at the community-level and its influence on children's developing belief system, involving lower expectations and self-efficacy, reduced goals and planning, and awareness of fewer resources and opportunities (cf. Wilson 1987). Low self-efficacy and few achievement expectations are thought to indirectly affect mental health in early adulthood by two pathways, one compromising child/adolescent mental health and the other disrupting the transition to adulthood.

Their model also considers stress proliferation involving two types of stressors (middle panel of Fig. 3.3) – the occurrence of life event stressors at multiple points in the early life course and the persistence of ambient neighborhood stress throughout this time. The association between neighborhood disadvantage and ambient neighborhood stress, similar to neighborhood disorder, figures prominently in research on neighborhood and mental health. However, the addition of eventful life change is novel because these events are not inherent aspects of living in a disadvantaged neighborhood, but may result from it – stressors like parental divorce, deaths, unemployment, abuse, or school problems.

They test a reduced form of their theory using longitudinal data from the National Survey of Children. Their analytic model contains measures of only some

of these pathways presented in Fig. 3.3, but clearly demonstrates mediation indicative of stress proliferation. Specifically they find that the impacts of neighborhood socioeconomic disadvantage on symptoms of externalizing and internalizing disorder are largely mediated by the cumulative effects of both life course eventful stress and chronic ambient neighborhood stress.

In addition to elaborating neighborhood-related components of the stress proliferation process, they address the joint effects of neighborhood disadvantage and individual-level social class, contending that these effects are intertwined rather than independent. In other words, they theorize that neighborhood disadvantage does not apply equally to everyone living within a neighborhood but may reflect processes of compound advantage or compound disadvantage (see above). Their results support the "compound disadvantage" model – the effect of neighborhood disadvantage is worst for children of parents with low educational attainment. Thus, there is a specific disadvantage to personal disadvantage in the presence of disadvantaged neighbors. In addition, having college-educated parents completely negates the mental health effect of neighborhood disadvantage; in other words, for these children's mental health, context does *not* matter.

Wheaton and Clarke (2003) interpret this important finding as meaning that well established individual-level effects, such as that between low SES and poor mental health, may vary across social contexts, be produced by social context, or be spurious. In other words, the proper specification of individual-level social class effects on mental health requires the consideration of the *interdependence* between individual and contextual components of social class.[5]

A second example of the type of ecological model I am advocating can be found in work by our research group using data from the National Longitudinal Study of Adolescent Health – Add Health (Wight et al. 2006b). For this study, we linked Census data to high schools yielding contextual characteristics that are attributes of the larger communities surrounding high schools. Outcomes were depressive symptoms, minor delinquency, and violent behavior. Our findings support the ecological model in that social support was more consequential in advantaged areas than disadvantaged areas, where social support had little mental health impact. In other words, social support is limited in its ability to offset the negative mental health impact of living in a socioeconomically disadvantaged community. This type of study validates, in my opinion, the promise of the integration of structural and stress process models. This integration has yet to be realized fully, but is emergent in the field.

Studies in the stress process tradition also support the idea that the mental health impact of the neighborhood may differ across individual-level characteristics.

[5] In addition, there are indications that the connection between neighborhood disadvantage and mental health may be conditional upon other characteristics of the neighborhood. For example, Ross et al. (2000) report that the mental health impact of neighborhood disadvantage is conditional upon the residential stability of the neighborhood. This contingency is explained by perceived neighborhood disorder, which in turn is explained in part by powerless, fear, and their interaction. They conclude that residential stability in a disadvantaged neighborhood can produce a distressing sense of powerlessness when it means being trapped in these circumstances.

For example, Schieman et al. (2006) report cross-level interactions that are consistent with the ecological approach.[6] Like Wheaton and Clarke (2003), they examine the important question of whether the effects of neighborhood disadvantage are conditional, looking at the outcome of anger among older persons (aged 65 and older). Using a combination of the stress process model and social comparison theory, they find that subjective financial comparisons with neighbors modify the association between disadvantage and anger for elders at different levels of income. In essence, social comparison and income act as effect modifiers so that people who experience similar levels of neighborhood disadvantage are not similarly affected by these conditions.

These studies attest to the value of the ecological approach to the stress process, but it must also be noted that some studies report an absence of cross-level interactions (e.g., Henderson et al. 2005; Silver et al. 2002). However, some studies have limited statistical power for detecting such effects in multilevel models, whereas other studies do not use multilevel statistical models for estimating cross-level effects. Conclusions supporting the empirical validity of the ecological model, therefore, are tentative.

Implications for the Future of Neighborhood and the Stress Process

The structural and stress process research summarized above lends credence to the existence of meaningful connections between neighborhood and mental health that are mediated by domains of the stress process, but future research needs to establish these links more directly through the use of multilevel statistical models. A fundamental tenet of the stress process model is that differences in mental health among social groups can be explained in terms of differences among groups in exposure to stress and access to resources (Pearlin 1989, 1999). A common analytic strategy is mediational – the magnitude of between-neighborhood differences is tracked as stressors and resources are added to the model.

With few exceptions, this strategy has not yet been fully implemented in neighborhood research. Instead, between-neighborhood differences are estimated in structural models without subsequent mediational analysis, and stress process models usually do not estimate inter-neighborhood differences or explain it. This yields a large substantive and empirical gap in research on neighborhood and the stress process. This gap is problematic because research in the structural tradition typically reveals only modest mental health differences across neighborhoods, leaving precious little between-neighborhood variation to be explained by the stress process model.

This dilemma can be resolved through research explicitly designed to assess the extent to which neighborhood differences in mental health can be attributed to

[6] However, cross-level interactions between individual and contextual characteristics require multilevel statistical models to be robustly specified and estimated (Subramanian et al. 2003) so these findings should be cautiously interpreted.

domains of the stress process. Thus far, most research on this topic has taken advantage of existing data sets that are not ideally suited to the task at hand. The results of this work, summarized here, are promising but limited by these makeshift designs.

The most serious limitation concerns the definition of neighborhood, specifically the reliance on official boundaries such as Census tracts, which do not correspond to neighborhoods as socially constructed by residents. This slippage introduces considerable noise into the estimation of between-neighborhood differences and may account for the generally small effect size observed in structural research. This slippage is compounded by data sparseness issues, specifically the presence of large numbers of neighborhoods represented by few, often one, persons in a given study. In this situation, the meaning of-between and within-neighborhood variation is compromised and effects are estimated by "borrowing" information from larger neighborhoods. The future of work in this area depends upon the implementation of studies specifically designed to examine how socially defined neighborhoods influence mental health via exposure to stress and access to resources.

A key aspect of the stress process model is the notion of stress proliferation, a process that merits development in future research concerning neighborhood. Thus far, research has focused on neighborhood disorder as the key mediator of the mental health effects of neighborhood disadvantage on mental health. This tendency is an unnecessarily restrictive approach and tends towards the obvious. The investigation of neighborhood linkages to mental health should not be restricted to domains that are virtually one and the same with neighborhood, but should extend into diverse areas of life that are shaped by the neighborhood context. Work in this area could benefit, for example, by Wheaton's (1994) conceptualization of the universe of social stress and its empirical application by Turner et al. (1995). The articulation of the many ways in which neighborhood intersects with the many areas of social life – marriage, children, work, friendships and so forth – would lead to a more textured and nuanced integration of the stress process within neighborhood research. This expansion of the current focus would enable research to draw more fully on the conceptual complexity of the stress process model as has been articulated by Pearlin (1999).

The work described in this chapter would be conceptually barren without the contributions that Len Pearlin (1989, 1999) has made to setting forth an agenda for the sociological study of social stress and mental health. Of particular relevance is his insistence on explaining the connections between structured social life and the inner emotional lives of people. Neighborhood research follows in this tradition when it examines the ways in which social status at multiple levels of the social hierarchy influences lives in ways that regularly expose people to stress and limit their access to salutary resources. In addition, a key feature of the stress process model is the emphasis on conditional relationships, for example, that people exposed to the same stressor vary in their mental health responses. This theme is echoed in the ecological model of the stress process that posits that the impact of neighborhood disadvantage is conditional upon the characteristics that differentiate substrata of the population, such as SES, and social group variation in exposure to stress and access to resources. Work of this type would fulfill the promise of contextualizing the Pearlin stress process model.

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Chapter 4
Suppression Effects in Social Stress Research and Their Implications for the Stress Process Model

Scott Schieman

Leonard Pearlin's "The Sociological Study of Stress", a classic piece, published in the 1989 issue of the *Journal of Health and Social Behavior*, has inspired two decades of research. One of the central messages in that paper is that the *sociological* study of stress aims to document patterns between social status or dimensions of stratification and indicators of physical or mental health (Pearlin 1989, 1999). Other scholars have pursued this line of inquiry by documenting a social distribution or epidemiology of stress exposure and their subsequent links to health outcomes in large community-based or nationally representative surveys (e.g., Mirowsky and Ross 2003a, b; Turner et al. 1995). So, for example, women tend to report higher levels of depression; age is inversely associated with levels of anger; the well-educated tend to report fewer physical symptoms and so on. In addition, researchers have then sought to *explain* the reasons for variations in health outcomes across social status or dimensions of stratification (Mirowsky 1999). These explanations are often linked to the unequal distribution of exposure to various forms of adversities (among other things) (Aneshensel 1992; McLeod and Nonnemaker 1999; Wheaton 1999).

This basic orienting framework of the stress process model has guided my own research over the past decade. As Pearlin (1983) has observed, some of the most common chronic stressors occur in the main social roles of daily life – especially work and family (or their intersection). The broad scope and utility of the stress process framework is especially notable here. For example, scholars in the sociology of religion have sought to apply its concepts and predictions to describe the religion–mental health association (Ellison 1994). Thus, in addition to work and family contexts, there has been recent interest in linking the activities and beliefs embedded in the *religious role* with stress and mental health processes.

With respect to work-related processes and their implications for work—family conflict and health outcomes, I have observed that several conditions that are typically associated with a more advantaged status – such as schedule control, job authority, and creative work – sometimes have associations that are inconsistent

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with core predictions of the stress process model (Pearlin 1999). This central theme guides my main argument here – status positions often convey disadvantages as well as advantages. Generally speaking, these patterns belong to a class of associations that can be described as *suppression effects*. This chapter describes some of the ways that these statistical patterns can help to challenge and refine theoretical views about status inequality and stress processes; I will outline examples from my own and others' research that exemplify these patterns. Although my interest lies in the theoretical implications of suppression effects, rather than the statistical details and nuances, I will provide a brief definition.

Suppression Effects in Social Stress Research

In a paper titled "The Logical Status of Suppressor Variables" in the *Public Opinion Quarterly*, Morris Rosenberg (1973) described the importance of suppression effects in survey research. He observed: "Despite the fact that X is not statistically associated with Y at the zero-order level, it may still be responsible for Y. The reason offered is that some test factor, called a suppressor variable, is concealing the true relationship between the independent and dependent variables" (p. 360). One of Rosenberg's main points was that a conclusion about an initial *null* association may be misleading – and that social scientists should pay careful attention to these "zero correlations." Similarly, Conger (1974) contends that a "suppressor variable is defined to be a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation. This variable is a suppressor only for those variables whose regression weights are increased" (pp. 36–37).

A common suppression scenario occurs when an independent variable is associated positively with another independent variable *and* associated negatively with a dependent variable (Masseen and Bakker 2001). Although sociologists are typically cognizant of spurious associations – that is, an association that is attributable to an extraneous or antecedent variable – Rosenberg emphasized the need for more attention to the "apparent absence of an effect of an independent variable on a dependent variable." The main message that can be fruitfully applied to the study of stress processes is the following: If a null correlation is observed between a particular status or condition and either a stressor or health outcome, we should not rush to the conclusion that X is *not responsible* for Y (or reject a "true hypothesis"). It is possible that the association is concealed or masked by the presence of a suppressor variable. As McFatter (1979) urges, however, "the interpretation of any obtained 'suppressor' effects (and, in fact, any regression equation) depends critically upon the causal structural model that is at least implicitly assumed to underlie the data" (p. 123). Although this is an essential point that deserves consideration, space limitations restrict my attention to the conceptual and theoretical nuances and methodological approaches to dealing with causal ordering issues in this chapter. Instead, I present several examples that demonstrate suppression effects and explore

their implications for the conceptual and theoretical ideas of the stress process model. It is worth noting that my first example is a much more "classic" case of suppression. By contrast, the other examples that I describe could be viewed as elaborations of indirect causal effects.

Example 1: Religion and Two Personal Resources: Mastery and Self-Esteem

Mastery. An example that illustrates one of the most common suppression scenarios involves religion and the sense of personal mastery. The conceptual and empirical relevance of mastery as a personal resource in the stress process model is well-established (Aneshensel 1992; Turner and Roszell 1994). In fact, Pearlin's conceptual and empirical innovations in this area has helped make the sense of mastery one of the most prominent (and commonly-investigated) features of the stress process model. The sense of mastery, which shares conceptual ground with other constructs including the sense of personal control, self-efficacy, internal locus of control, and instrumentalism, is a learned, generalized expectancy that is largely shaped by social conditions (Mirowsky and Ross 2003a; Pearlin 1999; Wheaton 1985). Individuals who possess a high sense of mastery claim that, in general, they determine the positive and negative events and outcomes in their lives (Pearlin and Schooler 1978). By contrast, individuals with low mastery cluster at the other end of the continuum, experiencing powerlessness, and the sense that chance, luck, fate, powerful others the direction of their lives (Ross and Sastry 1999).

Researchers in the sociology of religion have increasingly become interested in the links between religion and different components of the stress process model (Ellison et al. 2001; Schieman 2008; Schieman et al. 2005; Schieman et al., 2006a, b). A central issue involves the link between religious involvement and personal resources (Krause 2005; Schieman et al. 2003). For my purposes here, I ask the following question: Is private religious devotion, as indexed by the frequency of praying, associated with the sense of mastery? In a 2005 survey of 1,800 American adults, I initially observed a *null association* between the frequency of praying and the sense of control. This initial model included a wide range of controls for sociodemographic characteristics, religious affiliation, and a variety of other conditions. However, it did *not* include an index that assesses individuals' beliefs about God's causal relevance in everyday life – what my colleagues and I have referred to as "the sense of divine control" (Schieman and Bierman 2007; Schieman et al. 2005, 2006a, b). The sense of divine control involves the extent to which an individual believes that God exercises a commanding authority over the course and direction of his or her own life. Individuals who sustain a belief in divine control perceive that God controls the good and bad outcomes in their lives, that God has decided what their life shall be, and that their fate evolves according to God's plan. They tend to rely heavily on God in their decision-making and more fervently seek His

guidance for solutions to problems. When I subsequently adjusted for the sense of divine control in a second model, the effect of praying on mastery becomes *positive* and statistically significant at the 0.001 level. (An interaction between praying and divine control is also plausible, although that is beyond the scope of my conceptual and empirical arguments here.)

Setting aside the obvious concerns about causal ordering in these cross-sectional analyses, there are potentially important conceptual and theoretical implications of this simple pattern portrayed in Fig. 4.1. First, on the basis of this evidence, it would be erroneous to conclude that a core activity in the religious role – *praying* – is unrelated to one of the key concepts in the stress process model: *mastery*. Second, there is a burgeoning literature that seeks to document the mental health implications of religion (e.g., Ellison 1994; Ellison et al. 2001; Flannelly et al. 2006; Pargament 1997). Analyses of the ways that elements of the religious role influence key components of the stress process model, especially personal resources, directly inform those efforts. Third, this simple pattern prompts additional questions that can further enhance our understanding of the nature of key concepts in the stress process framework. Moreover, it illustrates the ways that stress research is informed by and can stimulate conceptual and theoretical innovations in other areas such as the sociology of religion and social psychology. For example, do individuals who believe that God represents a highly determinative force in everyday life actually have a lower *generalized* sense of personal mastery? Or, is it possible that divine control beliefs are conceptually and practically different than a low sense of personal mastery? These distinctions can help clarify the nuances among different sources of external control.

Jackson and Coursey (1988, p. 399) have argued that "a common secular perspective on religion assumes that believing God is an active agent in one's life

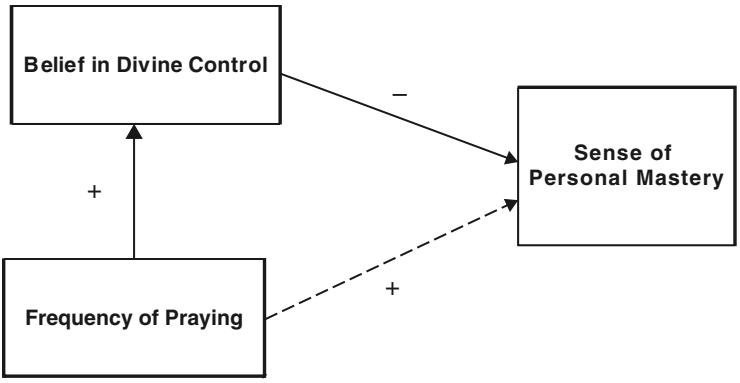

Fig. 4.1 The association between belief in divine control, praying, and sense of personal mastery. Note: *Dashed line* represent suppression effect. Results based on 2005 Work, Stress and Health survey of 1,800 American adults

requires relinquishing a sense of personal or internal control." Moreover, conceptual specifications of the *external* pole of Rotter's (1966) I-E scale differentiate the "chance" and "powerful other" dimensions from the "God control" dimension (Jackson and Coursey 1988; Levenson 1974; Kopplin 1976). Although some researchers have delineated between the "powerful other" and "God" dimensions of external control, Mirowsky and Ross (2003a) contend that the external attribution of control to God acts "as a logical opposite of internal control: either I control my life or control rests elsewhere" (p. 201). The process of surrendering control to a powerful other challenges a key conceptual tenet of personal control theory: The individual – *not a powerful other* – determines the events and outcomes in their own lives. If we can presuppose that the causal attribution to God represents processes similar to attributions to other external forces such as fate, change, luck, or powerful others, then individuals who profess a sense of divine control should tend to report lower levels of personal mastery or control.

Although these issues cannot be resolved here, they do underscore at least three things: (1) the importance of religion's complicated influence in stress and health processes; (2) the more specific ways that social conditions may influence important personal resources in the stress process model; and (3) the ways that discoveries in research on the stress process can stimulate new questions and insights that go beyond the bounds of stress-specific research. Advances along these lines, for example, can contribute to social scientific inquiry about the nature of religious beliefs and their connections to social and cultural life. In sum, given the clear positive association between being highly devoted and committed to the religious role and the profession of belief in God as a causal agent, I argue that any analyses of the interrelationships among religious involvement, stressors, personal resources, and mental health should attempt to carefully take these religious beliefs into account. Their potential influence will likely be discovered at multiple points in the stress process.

Self-esteem. Like mastery, self-esteem is another central self-concept that is highly relevant in the stress process model (Pearlin 1999). Moreover, it has garnered attention in some of the recent work on the links between religious involvement and mental health (Ellison et al. 2001; Schieman 2008). In contrast to mastery, self-esteem is "the evaluation which the individual makes and customarily maintains with regard to himself or herself: it expresses an attitude of approval or disapproval toward oneself" (Rosenberg 1965, p. 5). Stress researchers have observed that self-esteem is a key personal resource in the stress process model because of its potential to help people avoid or manage stressors (Turner and Roszell 1994). As Rosenberg (1982) has argued, the self – as a social product – develops through interactions with agents of socialization. Religious institutions, with their associated teachings, symbols, and rituals, have provided a core source of socialization across cultures and societies (Sharot 2001). By extension, it seems reasonable to suspect that participation in religious activities and institutions may be influential.

Ellison's (1993) research provides an excellent example of the ways that religiosity is influential for explaining gender differences in self-esteem – drawing particular attention to the relevance of *religious participation*. Specifically, he analyzed data

from the National Survey of Black Americans (NSBA), a household probability sample conducted by the Survey Research Center at the University of Michigan during 1979–1980. A core part of his analyses uncovers an important suppression effect in the associations among gender, religious involvement, and self-esteem. In the first model, Ellison reports results from an OLS regression of self-esteem (the dependent variable) on gender, age, urban residence, education, income, employment status, and several other measures of physical attractiveness and skin color. In this initial model, the unstandardized coefficient for gender (with women coded "1") is −0.005 and is not statistically significant. However, in the second model, the statistical adjustments for public and private dimensions of religiosity increases the size of the negative unstandardized coefficient to −0.045, and the coefficient becomes statistically significant ($p < 0.05$). Public religious participation is indexed as the frequency of attendance at religious services and frequency of participation in other church-related activities; private devotional activity is assessed as the frequency of reading religious books or other religious materials, the frequency of religious television or radio consumption, and the frequency of personal prayer.

If Ellison (1993) had *only* examined model 1, then he would have reported that black women and men report *similar* levels of self-esteem – an inaccurate conclusion. After the inclusion of religious participation in the model, however, the focal association between gender and self-esteem changes dramatically: Black women report a significantly lower level of self-esteem than black men *net of public and private forms of religious participation*. Figure 4.2 illustrates these suppression influences of public and private religious participation. Why did the coefficients

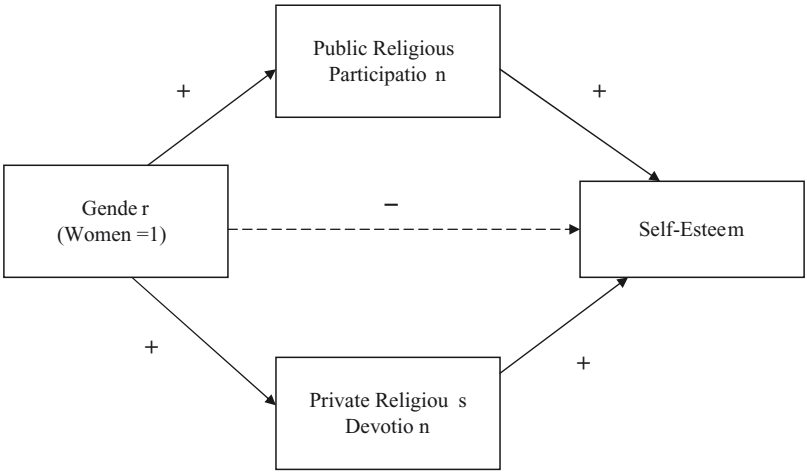

Fig. 4.2 The association between gender, religious participation, and self-esteem (adapted from Ellison 1993) Note: Results based on the 1979–1980 National Survey of Black Americans (NSBA). The *dashed line* represents the suppression effect of gender's negative association with self-esteem

change so dramatically across these two regression models? There are several pieces of the puzzle to consider. First, black women tend to report significantly *higher* levels of public religious participation and private religious devotion compared to black men. Second, public religious participation and private religious devotion are both associated *positively* with self-esteem. Putting these pieces together produces the suppression effect. Ellison interprets these patterns as follows: "Once variations in these aspects of religiosity are held constant, black females report significantly lower levels of global self-worth than black males" (Ellison 1993, p. 1037).

In a third model, Ellison's (1993) analyses proceed to explain away this net gender gap in self-esteem. After adjustment for chronic illnesses and negative life events, the gender difference decreases to statistical nonsignificance. These explanatory effects are due to the fact that women report more chronic illnesses and negative life events which, in turn, are associated negatively with self-esteem. Taken together, these observations nicely exemplify competing effects – were it not for their greater public religious participation and private religious devotion, black women would report lower self-esteem than black men. Moreover, black women's greater likelihood of experiencing chronic illness and negative life events explains why they report lower self-esteem than men (*net of religious participation*). Ellison concludes by asserting that "the apparent female deficit in self-esteem…reflects primarily the fact that, on average, females experience a greater number of stressful life events than males with comparable background characteristics" (p. 1037). This point is especially salient – without public religious participation and private religious devotion in the model, there would have been no focal association to explain away; that is, there would not have been an observed gender difference in self-esteem. Collectively, these findings underscore one of Pearlin's (1999, p. 398) essential concerns: "the statuses of people are potentially connected to virtually every component of the stress process". Here, the ways that gender links to a core personal resource – self-esteem – is influenced by components of the religious role *and* common stressful experiences.

Example 2: Job Authority and Health

Shifting gear away from religion and the stress process, the next two examples involve the influence of conditions in the work role. As Pearlin (1989, 1999) and other social stress researchers have long touted, disparities in physical and mental health are often linked to social stratification and inequality in the population (McLeod and Nonnemaker 1999; Mirowsky and Ross 2003a, b). Many scholars have established the special relevance of work conditions in these patterns (Fenwick and Tausig 2007; Tausig 1999). In particular, higher-status conditions (e.g., well-paying jobs with non-routine and autonomous work) are generally associated with more favorable levels of health and well-being (Mirowsky and Ross 2007). Yet, one particular higher status condition in the workplace – *job authority* – presents an unresolved paradox.

In their description of its health consequences, Mirowsky and Ross (2003a) contend that the positive and negative elements of job authority cancel each other out; this results in a *null association* between authority and health. Based on that evidence, should we simply conclude that job authority is one of those status advantages that, for some reason, do not translate into more favorable health? If so, then perhaps we should consider modifications to some of the underlying predictions about status advantages in the stress process model. According to Pearlin (1999), "people's standing in the stratified orders of social and economic class, gender, race, and ethnicity have the potential to pervade the structure of their daily existence and the experiences that flow from it" (p. 398). The general proposition is that advantages with respect to power, privilege, and prestige yield favorable outcomes in the stress process framework (i.e., more personal resources, fewer exposures to stress, and better mental health). In this section, I argue that a deeper investigation of the cross-cutting mechanisms that produce the null association between job authority and health can contribute to and enhance conceptual and theoretical dimensions of the stress process framework, especially in the ways that we tend to view social inequality and status advantages. That is, some social-structural conditions in the workplace that are typically viewed as favorable, advantageous, and desirable may have not-so-hidden downsides.

Job authority is an especially good candidate for a favorable condition that might also generate chronic stress. For example, Mirowsky and Ross (2003a) identify interpersonal conflict as the core negative aspect of job authority. Similarly, researchers have also documented elevated levels of another stressor – interference between work and nonwork domains – among workers with more job authority (Schieman et al. 2006a, b). In contrast to these negative elements, however, there are many benefits or resources associated with job authority, such as higher earnings, job autonomy, schedule control, and nonroutine work that should improve health (Mirowsky and Ross 2003a). These hypothesized competing suppression and explanatory influences are illustrated and labeled as the *stress of higher status* versus the *resources of higher status* hypotheses in Fig. 4.3.

Collectively, the ideas embedded in this conceptual framework can help to illuminate the paradox of the overall null association between job authority and health. Moreover, they also elaborate on and refine the "stress of higher status" theoretical perspective. The careful attention to suppression effects like those predicted here can broaden our conceptual, theoretical, and empirical understanding of workplace inequality, stress processes, and health. Specifically, the stress of higher status hypothesis proposes that higher levels of interpersonal conflict and work-to-home interference among those with more job authority should suppress the negative association between authority and different health outcomes. Job authority delineates the parameters of power and status because it affords sanctioning, supervising, and decision-making control over others. The power to distribute rewards and punishments, and dictate the work of others, will likely incite some degree of interpersonal discord. Similarly, the stress of higher status thesis also maintains that positions of responsibility and importance at work may increase blurring of borders between work and nonwork life. By extension, this border blurring has been shown

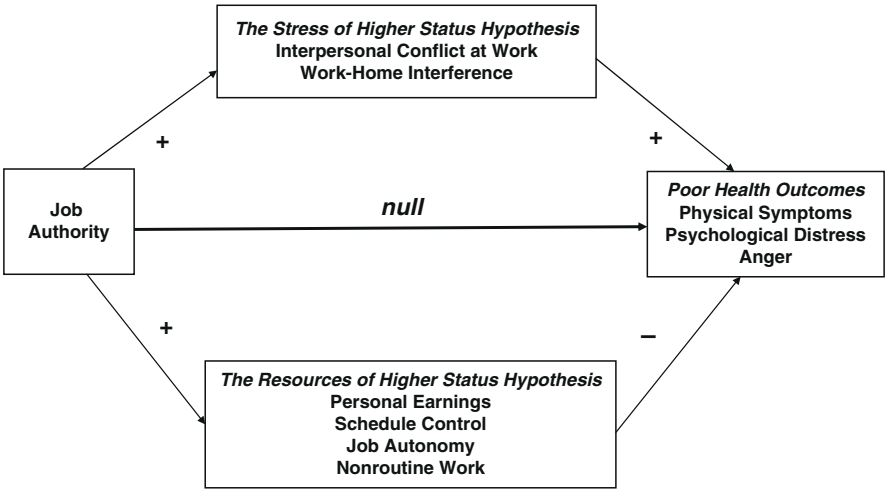

Fig. 4.3 Conceptual framework for the association between job authority and poor health outcomes. Note: Results based on 2005 Work, Stress and Health survey of 1,800 American adults

to increase the risk of tension and conflict between the roles of family and work (Voydanoff 2007). In contrast to the predictions of the stress of higher status hypothesis, the "resources of higher status" hypothesis is based on the claim that people with more job authority tend to enjoy greater earnings, autonomy, nonroutine work, and schedule control. These conditions, in turn, should *contribute to* fewer health problems among those with more authority.

By seeking more dynamic conceptual and data analyses strategies that attend to potential suppression effects, it is possible to bring greater attention to intervening mechanisms that might have not otherwise been sought. This orientation can also help to elaborate on and refine the stress of higher status theoretical perspective and illuminate the paradox of the null association between job authority and health. Moreover, it provides a conceptual template for documenting suppression effects in a manner that might broaden our understanding and interpretation of status inequality and its link to stress processes. Why does job authority *not* improve health? It may be that the costs of workplace authority offset the benefits. Does this mean that job authority is an unfavorable or deleterious condition that people should avoid? Certainly not, but it does underscore the importance of the potential downsides to higher status (i.e., stressors) and the ways that these downsides might inform broader stratification-based health disparities in the population. Indeed, we might assert that health disparities between those with power or prestige and those without would be even greater were it not for the stressors associated with the expectations and responsibilities of higher status positions, especially in the work role. Collectively, these ideas broaden the perspective of status-related stressors in the

stress process model in ways that expand our analysis of the full gradient of advantage and disadvantage. The third and final example illuminates this argument further.

Example 3: Creative Work and the Work–Family Interface

One of the main assumptions of the stress process model is that "social stress is not about unusual people doing unusual things and having unusual experiences" (Pearlin 1999, p. 396). Stressors occur in the normative arrangements and conditions of everyday life (Aneshensel 1992; Pearlin 1989). Most people spend the bulk of their daily lives engaged in activities linked to the work and family domains (Bianchi et al. 2006). Thus, it is not surprising that the conditions in these roles provide many opportunities for exposure to stressors that, in turn, can undermine well-being (Pearlin 1983; Pearlin and Johnson 1977). Moreover, conflict between these roles represents one of the most salient stressors in the stress process model (Pearlin 1999; Wheaton 1999). The National Institute for Occupational Safety and Health has identified work–home interference or conflict as one of the most pervasive and problematic workplace stressors (Kelloway et al. 1999), underscoring its deleterious effects on health outcomes and family-related processes (Bellavia and Frone 2005). Work-to-family conflict involves the extent to which individuals perceive that work interferes with the responsibilities and expectations of family, competing for the individual's finite amounts of time and energy (Greenhaus and Parasuraman 1987; Kopelman et al. 1983).

How do conditions in the workplace influence exposure to work-to-family conflict? Although I have underscored the potential stressors embedded in the work role, there is little doubt that the workplace often allows for skill- and self-enhancing activities. For example, creative work activities provide individuals with opportunities to learn new things, solve problems, and develop skills (Mirowsky and Ross 2007). According to Voydanoff (2007), work activities that cultivate *creativity* represent "within-domain resources" that presumably help individuals avoid or minimize conflicts between work and nonwork life. Here, I seek to elaborate on and challenge that proposition by describing a more complex set of processes that may link creative work to stress exposure in the work–family interface. Specifically, in contrast to the resource view, it is possible that creative work is associated with higher levels of two forms of *demands* – within-domain and boundary-spanning demands. "Boundary-spanning demands" involve the frequency of receiving work-related communications outside of normal work hours from an array of sources, including coworkers, supervisors, managers, customers, or clients (Voydanoff 2007).

Unlike within-domain demands, which typically involve the sense of being overwhelmed by an excessive workload, boundary-spanning demands represent a new form of role blurring in which the temporal and physical boundaries separating work and nonwork roles become less defined. In turn, it is reasonable to suspect

that within-domain and boundary-spanning demands increase the frequency of multitasking, which involves how frequently individuals take on work- and family-related activities simultaneously when they are at home (Voydanoff 2007). A work–home configuration that encourages multitasking exemplifies the concept of role blurring because it is difficult to demarcate where one role ends and the other role begins. Taken together, demands and multitasking are likely to be associated with higher levels of work-to-family conflict. These patterns yield the prediction that the demands of creative work and their links to multitasking should *suppress* the resource benefits of creative work for the work–family interface. These propositions are outlined in Fig. 4.4 to provide a framework for thinking about conceptual innovations and their interrelationships in the stress process model.

Despite the fact that the publication of Pearlin and colleagues' stress process model (Pearlin et al. 1981) is now approaching its 30th anniversary, it remains flexible and adaptable to accommodate dramatic changes in the nature of core, institutionalized social roles and novel consequences in which those roles may intersect. Structural, cultural, and technological forces have substantially altered the ways that workers traverse work and family borders (Jacobs and Gerson 2004; Valcour and Hunter 2005), which, in turn, generates the need for conceptual refinements of a broader array of work–family interface processes such as role blurring (Clark 2000). Given the salience of role-related stressors in the stress process model, I believe it is critical to consider innovations in ways that these broader social changes trickle down to influence meso- and micro-level processes and experiences in the stress process. For example, new forms of communication technologies are fostering the ever-increasing span of workplace demands and the ways organizations call upon

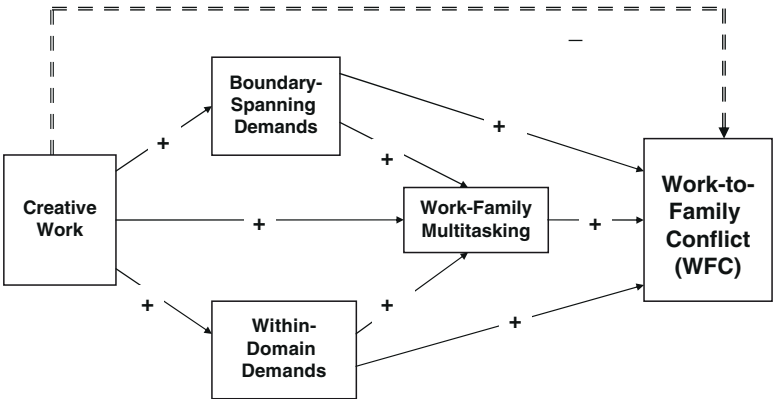

Fig. 4.4 Conceptual framework of creative work and the work-family interface. Note: The *dashed line* represents the hypothesized suppression effect of creative work's negative association with work to family conflict

workers to satisfy responsibilities. In this respect, the frequency of boundary-spanning demands may represent new ways that work intrudes into the family domain, but they can also help workers manage and navigate pressures on the job; these processes underscore the potentially stressful versus resourceful nature of demands. These changes require social scientists to consider the ways that conditions that may conventionally be considered *resources* – like access to and utilization of sophisticated communication technologies (i.e., "Blackberry") – often simultaneously generate new pressures and demands regarding time, attention, and work–family boundary management.

Structural arrangements can also influence psychological processes in the work–nonwork interface. For example, the simple act of *thinking* about work outside of normal work hours may represent boundary-spanning thoughts that are undesired and stressful. Intrusive thoughts about work represent another way that work creeps into nonwork life. These processes, however, require careful attention to the possibility that some work-related resources (i.e., creative work) will actually increase the frequency of boundary-spanning thoughts. These patterns further accentuate the ways that "central participants" in the workplace, often higher status workers themselves, experience a more permeable work–family border (see Blair-Loy 2003; Clark 2000). When one frequently thinks about work issues outside of the workplace, the interference may have negative consequences.

On the other hand, as the stress process model suggests, creative work may also function as a resource in the following way: Individuals with creative work may be less likely to appraise these thoughts as stressful. Creative work may foster productive processes that include a sense of being able to effectively manage work-related tasks. Creative work is often enjoyable and engaging, so individuals may desire to think about work outside of the usual spatial and temporal parameters of the workplace. These nuanced meanings of potential stressors and their implications underscore the need for caution in the way scholars think about processes at the work-family border. The stress process model can help us elaborate on, for example, the influence of resources in the workplace and whether "thinking about work outside of normal work hours" is uniformly stressful for workers.

To conclude, as the stress process model predicts, when work interferes with family life the effects are likely to be detrimental for health and well-being (Kinnunen and Mauno 2008). Although that fact is well-established (Bellavia and Frone 2005), less is known about the relevance of work activities for the work–family interface. I have proposed the possibility of important suppression effects that would demonstrate the ways that creative work can be a resource *and* a source of demands that shape work–family role blurring and levels of inter-role conflict. By seeking to explicate in greater detail the consequences of creative work for demands and multitasking, these ideas can contribute to the ways that we view status advantages and inequality as core components of the stress process model. Moreover, they may help us better understand the changing nature of stressors that are associated with the "greedy institution" of work (Coser 1974).

A Final Word

In writing this chapter, one of the things that I have realized is another unique contribution of Leonard Pearlin's conceptual, theoretical, and empirical work – they provide a seemingly bottomless well of ideas. With the examples presented above, I recognize that contribution and the ways they have inspired numerous and diverse research directions. In particular, my focus suggests a call for greater recognition of a broad class of "suppression" patterns in the relationships among social status, role conditions, stressors, and health. With respect to the workplace conditions and the "stress of higher status" view, two points are critical to underscore here. First, the stress of higher status thesis is not suggesting that those with more power at work, or control over the timing and pace of their work, or those with more economic resources are somehow worse off than those not in possession of such resources. This view is not proposing that "those poor *advantaged* people have it so tough!" Rather, it simply encourages a more dynamic analysis that reflects the realities of everyday life: That status advantages are often associated with excessive pressures and demands – conditions that can tax the adaptive capacities of individuals in ways that go against the grain of the "status advantage" view of stress and health disparities in the stress process model.

The second critical point is that the stress of higher status hypothesis can help expand the way we think about status inequalities and their effects on social disparities in health. For example, the well-educated would report *even lower levels* of anger were it not for their significantly higher levels of work–nonwork interference. Compared to lower status peers, professionals would report even lower levels of anxiety were it not for their greater likelihood of feeling rushed for time in everyday life. Individuals with more control over the timing of their work would report more satisfaction with work–life balance – were it not for the fact that they tend to engage in more work-nonwork role blurring. And so on…In each case, we can observe an analytic orientation that is different from the typical "What explains X's association with Y?"

Collectively, the types of focal associations and suppression patterns illustrated here are salient reminders of the sociological value of stress research. As Pearlin observed in his highly cited and influential "The Sociological Study of Stress" in the 1989 volume of the *Journal of Health and Social Behavior*, this type of research "presents an excellent opportunity to observe how deeply well-being is affected by the structured arrangements of people's lives and by the repeated experiences that stem from these arrangements…Many stressful experiences don't spring out of a vacuum but typically can be traced back to surrounding social structures and people's locations within them. The most encompassing of these structures are the various systems of stratification that cut across societies, such as those based on social and economic class, race and ethnicity, gender, and age" (p. 241). These systems embody the unequal distribution of resources and opportunities, but this unequal distribution is in both directions. It is here that a closer, more careful consideration of the different forms and implications of suppression effects in social stress research may contribute to the sociological study of stress.

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Chapter 5
Family Structure and Women's Lives: A Life Course Perspective

William R. Avison

A principal feature of the stress process paradigm is its distinctly sociological emphasis on understanding how social structure has a pervasive influence on individuals' exposure to stressors and their responses to these experiences. In his definitive paper on the sociological study of stress, Leonard Pearlin (1989) describes how individuals' locations in the social structure of society have consequences for their psychological well-being. His consideration of the social contexts in which stressful experiences occur, the resources with which they respond to stressors, and the manifestations of stress has provided sociologists with an agenda for research that has stimulated sociological inquiry for more than two decades. Pearlin's explication of the stress process paradigm was soon followed by an outpouring of research papers that sought to explore the impact of various statuses and roles on stress and its manifestations. This work continues today at an ever-accelerating rate of scholarly production.

One of the themes that has emerged from research on the stress process has been a consideration of the ways in which family structure creates a social context for stressors and their outcomes. Of course, the study of families has been an important feature of sociological research (Stryker 2007) and it seems clear that family structure has always been viewed as one of the essential structural properties of the stress process paradigm. Indeed, some of the earliest work within this paradigm was Leonard Pearlin's examination of the effects of marital dissolution on individuals' mental health (Pearlin and Johnson 1977). Life within a family requires that individuals assume an array of role responsibilities, navigate through the rewards and challenges of intimate relationships, and respond to the often conflicting demands of other statuses and roles. The dynamics of family life contribute to individuals' exposure to stressors and access to resources; thus, the experience of various health outcomes and these dynamics are greatly influenced by family structure.

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For the past several years, I have collaborated with an interdisciplinary team of researchers to examine a variety of issues concerning family structure and women's mental health. Much of this program of research has been driven conceptually by Len Pearlin's ideas about social structure, stress, and its consequences. His influence is obvious in the articles and chapters that we have published on this topic (Ali and Avison 1997; Avison 1995; Avison et al. 2007; Avison et al. 2008; Davies et al. 1997). Most importantly, as we delve deeper into the lives of single and married mothers, Len's ideas have been enormously valuable in assisting us to formulate new research questions and extend the parameters of our research.

In this chapter, I review some of the major lessons that we have learned in our studies of family structure, stress, and mental health. I then describe briefly how social change in the structure of families in North America has created a number of opportunities for extending our program of research in ways that have been clearly influenced by taking a life course perspective on the stress process, ideas that have been the hallmark contributions of Leonard Pearlin to integrating the stress process model with the life course paradigm (Pearlin 1983, 1989, 1999; Pearlin et al. 2005; Pearlin and Skaff 1996).

Family Structure, Stress, and Mental Health

For decades, when sociologists used the term family structure, they typically referred to the intersection of marital status and parenthood. In its simplest terms, the cross-classification of these two social statuses describes four distinct family structures: a) married couples with children; b) childless couples; c) single parents with children; and d) single persons. Of course, this four-fold classification does not adequately describe the heterogeneity of family structures. For example, among couples with children, we could distinguish between those where the parents are married and those where the parents are cohabiting in a common law arrangement. We might also contrast nuclear families with extended families. It may also be of interest to identify blended families that have emerged through remarriage. Among single-parent families, we might want to distinguish between female-headed and male-headed families because the circumstances of single-parent mothers are often much different from those of single-parent fathers. We could also distinguish between single parents who separated or divorced, those who were never married, and those who were widowed. There might also be situations where researchers wish to distinguish between couples who are childless by choice and those who are involuntarily childless. For some research questions, contrasting the experiences of same – sex and male–female couples may be of interest.

Despite widespread recognition among sociologists that there is substantial diversity in family life in North American society, studies of the effects of family structure on mental health have focused predominantly on the contrasting experiences of single and married (or cohabiting) mothers. There are several reasons for this selective focus. First, until relatively recently, the vast majority of children in

North American were born into two-parent families. Since the 1960s, however, the number of single-parent families grew substantially as a result of increasing rates of separation and divorce among couples with children. By the late 1980s, Bumpass and Sweet (1989) estimated that 44 % of all children in the U.S. would live in a single-parent family before age 16. Moreover, the vast majority of single-parent families have been headed by women. Thus, it is not surprising that most research on family structure has examined the differences between the experiences of single and married mothers.

Second, the significant increase in the proportion of families headed by single mothers emerged as a social issue that has been hotly debated over the past three decades. Although much of this debate has taken on a distinctive ideological flavor, there nevertheless has emerged a substantial body of scientific research on single parenthood that has relevance for social and health policy.

What is the evidence concerning the link between family structure and its consequences for mothers' mental health? The literature on this issue is unequivocal. Studies consistently find single mothers to have high levels of psychological distress (Avison et al. 2007; Brown and Moran 1997; Cotten 1999; Demo and Acock 1996; Kandel et al. 1985; McLanahan 1985). Earlier studies that focused more on the effects of separation and divorce than on family structure *per se* also conclude that the dissolution of a marriage is associated with elevated levels of psychological distress (Guidubaldi et al. 1986; Kitson 1992; Wallerstein and Blakeslee 1989; Weiss 1975).

When the focus is on diagnosable disorders, similar conclusions have been reached. Several studies consistently find that single mothers have significantly higher rates of major depression than married mothers (Cairney et al. 1999; Davies et al. 1997; Lipman et al. 2001; Wang 2004). Afifi et al. (2006) have presented one of the most comprehensive examinations of differences in psychiatric morbidity by family structure. They find that separated or divorced mothers have higher rates of depression, dysthymia, generalized anxiety disorder, and PTSD than do married mothers. They find no differences in terms of fear disorders except for agoraphobia. They note, however, that rates of disorder do not differ between married and never-married mothers.

Other investigations have documented the challenges encountered by single mothers by examining the enduring circumstances that characterize this family structure. These include economic hardship and poverty, caregiving stress, and lack of social support (e.g. Benzeval 1998; Brown and Moran 1997; Demo and Acock 1996; Edin and Lein 1997; Kitson 1992; Simons et al. 1996). These studies remind us that the structure of families shapes the lives of single mothers in ways that are consistent with the major principles of the stress process model.

The Single-Parent Family Study

Our own investigation of single motherhood and its consequences for women's mental health, *The Single-Parent Family Study* (Avison 2002), has attempted to extend this line of inquiry. When we began our study of family structure and mental

health, much of the research in this area had not been based on population-based samples of single-parent families and there was a striking absence of any comparison samples of two-parent families. We were also aware that few if any studies had employed a comprehensive inventory of stressful experiences to determine whether single and married mothers differed significantly in their levels of exposure to stress or had measured an array of psychosocial resources that might mediate or moderate the stress-distress relationship.

These considerations led us to initiate a longitudinal, case-comparison study of single-parent and two-parent families living in London, Canada. In this study, single mothers were defined as separated, divorced, widowed, or never married women living with at least one child under age 17. This sample includes mothers who may have been legally married but were separated and not cohabiting as well as those living in extended families (usually with their own parents or adult siblings). Married mothers included women who lived with their husband or cohabiting partner and at least one child under age 17.[1]

We completed initial interviews with a sample of 518 single mothers and 502 married/cohabiting mothers. Eighteen months later, respondents were relocated and re-interviewed. We successfully reinterviewed 472 of the original 518 single mothers and 476 of the 502 married mothers, a retention rate of 91.1% and 94.8% respectively. Attrition analyses of Time 1 data revealed no substantial differences between respondents interviewed at Time 2 and those who were lost to follow-up.

For both the initial and follow-up interviews, we collected extensive information on these mothers' socio-demographic and socio-economic circumstances. We also documented their exposure to an array of stressors including life events, chronic role strains, adversities and potential traumatic experiences in childhood and adolescence. In terms of manifestations of stress, we measured their psychological distress, their experience of major depression and dysthymia, and assessed their physical health.

This study has generated four broad conclusions about the effects of family structure on mothers' mental health:

[1]At the time at which data for this study were collected, just over 5% of couples in Ontario were cohabiting and we estimated that less than 7% of families with children were cohabiting (Le Bourdais et al. 2004). Given that our sampling target was 500 two-parent families, the expected number of two-parent families with cohabiting couples (less than 65) was deemed too small for analytic purposes. Moreover, family law in Canada confirms the right of cohabitors to equality of treatment in terms of health and social benefits. In Canada, cohabitors who have lived together for a sustained period (usually 1 to 3 years) can typically access spousal health, dental, and social benefits. Moreover, given universal health care insurance in Canada, cohabitors are not disadvantaged a priori in accessing basic health care in Canada. In terms of health outcomes, Wu et al. (2003) find no differences in diagnosable depression or in symptoms of depression between cohabitors and the currently married in a large national survey of Canadians. Thus, for methodological and substantive reasons, we treated cohabiting and married couples identically.

1. the effects of transitions into and out of employment on mothers psychological well-being are conditioned by family structure;
2. higher levels of psychological distress among single compared to married mothers are essentially a function of differential exposure to stressors;
3. the buffering effects of psychosocial resources on stressors are virtually identical for single and married mothers; and
4. experiences of adversities and potentially traumatic events in childhood and adolescence create pathways to depression in adulthood that are different for single and married mothers.

As we shall see, these conclusions have stimulated a series of new research questions that we believe can further extend our knowledge of the stress process. Many of these questions have been influenced by Leonard Pearlin's continuing contributions to the sociology of stress.

Family Structure, Transitions in Employment, and Psychological Distress

There is a substantial body of research in the sociology of mental health which demonstrates that the effect of employment on mental health is dependent upon contextual factors of both work and home environments (Lennon 1994; Moen 1989; Pugliesi 1995). This view underscores the importance of considering multiple roles for understanding the effect of paid work on individuals' mental health. Pearlin (1983, p. 5) has argued that

> ...to the extent that as sociologists we are interested in ordinary people representative of major population groups rather than exotic and extraordinary individuals, and to the extent that we are concerned with repeated and patterned behavior and experience rather than ephemeral, once-in-a-lifetime episodes, attention to social roles and the strains experienced within them serves us well. Clearly, it is around daily and enduring roles such as breadwinning and work or marriage and parenthood that much of our lives are structured through time.

In our program of research on single mothers, one of our first investigations considered the intersection of family structure and employment on women's psychological well being (Ali and Avison 1997). We were particularly interested in the paths through which family structure may be consequential for the effect of paid work on well-being. Our approach was to compare single and married mothers' experiences of moving into or out of the labor force over an 18-month period.

Our results reveal that the consequences of employment transitions differ substantially between single and married mothers. Among women who left their jobs during the course of the study, we find that labor force transitions are associated with a substantial increase in distress among single mothers but no change in distress levels among married mothers. When we examine the effects of transitions into paid work, there are surprisingly few effects on mothers' levels of distress. For single mothers, taking a job for pay offers no significant reduction in their feeling

of distress. Married mothers who enter paid work have significantly lower distress scores but only after controlling accompanying increases in caregiving strain.

We were interested in finding that the jobs of both single and married mothers who make employment transitions are lower paying, lower status, and average fewer hours per week than the jobs of stably employed mothers. This suggests that women who move in or out of paid work occupy more marginal jobs that are unlikely to yield the same economic or psychosocial rewards as the jobs of stably employed women. Furthermore, employment transitions result in only small changes in household income for both single and married mothers. Thus, transitions into and out of marginal jobs have only modest effects on psychological well-being for many mothers.

In these marginal jobs, the difficulties of trying to arrange care for a sick child or to make new child-care provisions are far less likely to be accommodated by employers. Also,, in contrast to stable, full-time jobs, the work schedules of marginal jobs are highly variable and subject to change. It seems clear that such disruptive work shifts are made more difficult if flexible childcare arrangements cannot be arranged. Thus, for women in these marginal jobs, their levels of caregiving strain increase substantially.

We also observed that single mothers' situations are more precarious than married mothers' because of their much smaller household incomes. Single mothers encounter major financial difficulties with the loss of even a marginal job. Furthermore, the jobs that they obtain upon re-entering the labor force do not substantially increase their household income above the levels of government assistance. Moreover, obtaining a job increases their expenses for childcare and transportation. Indeed, there may be some single mothers for whom the decision to leave marginal jobs is economically rational (Avison 1995; Ross et al. 1990). Whether they work for pay or not, many single mothers find themselves trapped in poverty and exposed to elevated levels of stress and strain.

It is important to note that these results are entirely consistent with the central propositions of the stress process formulation. The intersection of family structure and work clearly has substantial influences on the role-related strains to which mothers in our study were exposed. As Len Pearlin has argued so convincingly, statuses and roles are prominent features of social life that can be expected to have consequences for individuals' experiences of stress and strain and their subsequent psychological well-being.

Family Structure, Differential Exposure to Stressors, and Mothers' Psychological Distress

For many years, a central debate among stress researchers from various disciplines concerned the extent to which social group differences could be accounted for by concomitant differences in exposure to stress or to differential vulnerability or responsiveness to stress. (for reviews, cf. Aneshensel 1992; Aneshensel et al. 1991;

Kessler et al. 1985). In our view, this issue is of crucial importance in understanding differences in psychological distress between single and married mothers. Sociological research has typically reported that elevated levels of distress among single mothers compared to mothers with partners are due largely to their differential exposure to various stressful experiences including economic hardships, caregiving strains, and work–home role conflicts (Brown and Moran 1997; Simon 1998). Research in psychiatry and psychology appears to have concluded that these differences in mental health are related to single mothers' lack of resilience to adversity or to coping abilities or sense of coherence (cf. Hetherington 1999; McCubbin and Thompson 1998, for examples). Their focus has been on responsiveness to stressors and an emphasis on differential vulnerability to stressors.

Sociologists have argued that the weight of empirical evidence casts doubt on the existence of any pervasive group differences in vulnerability. They contend that examples that appear to be differential vulnerability are a function of limitations in research designs in terms of the measures of stressors, the outcomes examined, and the interplay among acute stressors and chronic strains (Aneshensel 1992; Pearlin 1989; Turner and Avison 2003; Turner et al. 1995).

The Single-Parent Study provided an excellent opportunity to test these competing hypotheses. Unlike previous studies of family structure, we were able to assess the same domains of stressors to estimate the effects of both stress exposure and vulnerability for single mothers compared to married mothers (a contrast group that is similar in status in terms of both gender and parent). This allowed us to test for the relative importance of differential exposure and vulnerability to stress without attributing unmeasured differences in stress exposure to differences in vulnerability. Our longitudinal design also enabled us to estimate the association between changes in stress and changes in distress among groups of mothers whose family structure has remained the same. In this way, we could make a more precise estimate of vulnerability to status-specific stressors because selection factors are controlled.

Our results demonstrated that single mothers' higher levels of psychological distress were more strongly related to their greater exposure to stress and strain than to any group differences in vulnerability (Avison et al. 2007). Moreover, the consistency of these findings across various dimensions of social stressors was remarkable. Finally, we were able to demonstrate that the effects of differential exposure persist over time.

These findings suggest that the consequences of single parenthood for stress exposure are not transitory, but rather, are rooted in the social structure in which these women are found. For example, it appears that a significant source of stress experienced by single mothers emerges directly from the structure of single-parent families. The high levels of financial strain reported by single mothers compared to married mothers is a direct consequence of living in a family structure where there is only one income earner. We also find that single mothers experience more work strain and caregiving strain than do mothers in two-parent families. This is an example of the ways in which the structure of families and the broader social structure of society interact to create stress for single mothers. Many single mothers

must balance work and family responsibilities within a family structure where they are both the primary caregiver and primary wage-earner. Elevated exposure to these types of strains is an example of how the structures of family and work are particularly onerous for single mothers.

The Effects of Psychosocial Resources Among Single and Married Mothers

Another related question that we have addressed in our study of family structure and mothers' mental health concerns the role of psychosocial resources. Of course, a central tenet of the stress process model is that psychosocial resources such as mastery and self-esteem may mediate or moderate the stress–distress relationship and that these resources are differentially distributed in the social structure.

Our analyses clearly revealed that women's locations in the structure of society are associated with their levels of psychosocial resources. Specifically, the elevated levels of distress reported by single-parent mothers are largely a function of their elevated exposure to strains and to their lower levels of psychosocial resources (Avison 1995).

Although there is strong evidence that mastery and self-esteem buffer the effects of chronic strains on psychological distress, these moderating influences do not appear to be conditioned by either household structure or employment status, or any combinations of these structural variables. Thus, there is no indication that mastery or self-esteem is less protective for single mothers than for married mothers. Indeed, it seems that the moderating functions of mastery and self-esteem operate in similar ways for single and married mothers alike. What distinguishes single from married mothers is their levels of these psychosocial resources rather than their moderating capacity.

Once again, these analyses provide strong evidence in support of Pearlin's (1989) assertion that the structure of social life as reflected in statuses and social roles has important implications for the kinds of stressors experienced by people, the kinds of psychosocial resources that are available to them, and the ways in which stressors manifest themselves. Indeed, these findings suggest that household structure and employment status have pervasive influences on the lives of individuals.

It is important to emphasize that household structure and employment status are significant determinants not only of stressful experience but also of individuals' psychosocial experiences. This finding suggests the need for further investigations of the ways in which individuals' positions in the social structure affect their sense of self. Although the sociology of mental health has tended to focus on symptoms of distress or mental illness, a better understanding of the factors that threaten self-esteem or self-efficacy may provide substantial insights into the psychosocial processes by which stressful experiences manifest themselves in mental health problems.

Not only do differences in social position expose individuals to greater or lesser numbers of stressful experiences; these differences may also condition the development of psychosocial resources that enable individuals to cope with such stressors. This is a distinctive contribution of the sociology of stress (Pearlin 1989). To ignore the ways in which social status influences the experience of stressors and their mediation is to assume that human experience is considerably more homogeneous than may be the case.

Early Life Experiences and Depression Among Single Mothers

One of the first lines of inquiry that we pursued in the *Single-Parent Family Study* was to investigate the significance of adversities and traumatic events in childhood and adolescence and how these experiences might account for differences between single and married mothers' histories of depressive disorder (Davies et al. 1997). At the time, we were influenced by an emerging body of stress research that had drawn attention to the importance of these major stressors and their consequences for mental health (Kessler and Magee 1993, 1994a, b; Turner and Lloyd 1995).

Our analyses revealed that single mothers report significantly more adversities in childhood and adolescence than do married mothers. This differential exposure is associated with an elevated risk of early onset of depressive disorder (defined as first episode prior to age 21). In turn, this contributes to higher probabilities of current depression. Women whose childhoods were relatively free of adversity are much more likely to report no episodes of depression or to have had a later onset of the disorder. This trajectory is significantly more prevalent among married mothers than among single mothers.

When we wrote this article, we interpreted these results in terms of chains of adversities and trajectories of depression. We now understand that this work is entirely consistent with a life course perspective on stress and mental health. Several sociologists' ideas have been important in shaping our ideas about mental health and the life course (George 2007; Gore et al. 2007; Wickrama et al. 2005). Len Pearlin's (Pearlin et al. 2005; Pearlin and Skaff 1996) specification of a life course perspective on the stress process has been particularly formative for the way in which we examine the lives of single and married mothers and their experiences of stress and its consequence for their mental health.

Family Structure and Mental Health Across the Life Course

In considering family structure and mental health using a life course lens, we began to think about two processes of change that were likely to be important. First, it is apparent that the family structures in which individuals reside may change over the life course. Although many individuals find themselves in family structures that are relatively

stable for substantial portions of their lives, certain expectable changes occur over the life course. Single persons marry or cohabit; some have children; children grow up and leave home; in later life, spouses have to enter institutional care or they pass away. Some individuals experience other, less expectable changes, in their family structure. Couples separate or divorce; some individuals enter second or subsequent marriages or cohabiting relationships. For some people, the relatively stable family structures in which they live constitute an enduring source of both stressful experiences and psychosocial rewards. For others, change over the life course in family structure may also expose these individuals to stress and strain. Binstock and Thornton (2003) have provided a very comprehensive account of the dynamic nature of marital and cohabiting unions and transitions. Thus, one of the challenges to the sociology of stress is to understand how patterns of stability and change in family structure over the life course have consequences for individuals' psychological health.

Second, there has been significant social or demographic change in family structure over the past several decades. As new types of family structures emerge in our society and become more prevalent, new research questions arise for those researchers who are interested in family life and the stress process.

Many demographers (Lesthaeghe 1995; van de Kaa 1987) have argued that since the 1960s, there has emerged a second demographic transition that is characterized by significant postponement of both marriage and parenthood, the proliferation of new living arrangements, increases in premarital and postmarital cohabitation, and an increasing proportion of births to unmarried persons. Although studies of this phenomenon initially focused on population trends in Western Europe, recent analyses of demographics also confirm the emergence of this second demographic transition in Canada (Beaujot 2000; Beaujot and Ravenara 2008; Le Bourdais et al. 2004) and in the United States (Lesthaege and Neidert 2006). In both societies, changing patterns of marriage, cohabitation, and single parenthood have dramatically altered the structure of families. Over the past 25 years, the family has become much more diverse.

In Canada in 1981, 83% of families were headed by married couples, 11% by single parents, and 6% by cohabiting couples. By 2001, 70% of families were headed by married couples, 16% by single parents, and 14% by cohabiting couples (Statistics Canada 2001). Patterns of fertility suggest that these trends will continue (Statistics Canada 2004). Non-marital fertility as a proportion of all births has continued to grow. In 1981, births to unmarried women in Canada accounted for 14% of the total, but grew to 40% by 2001. Beaujot and Ravenara (2008) conclude that these processes all contribute to the increasing fragility of marriage and other unions and give rise to a wider range of family structures than ever before.

In the United States, one in every three births in the United States in 1999 was to an unmarried mother with substantial variation across ethnic/racial categories. In 1998, birth rates per 1,000 unmarried women of age 20–24 were 46.0 among non-Hispanic whites, 135.0 for Hispanics and 131.0 among African-Americans (Ventura and Bachrach 2000).

McLanahan (2004) has argued that two divergent trends in American society have created substantial disparities among families. For some families, delays in

childbearing and increases in maternal employment have produced substantial economic gains. For others, increasing frequencies of divorce and nonmarital childbearing have contributed to declining economic well-being among these families. A critical observation is that these trajectories are patterned by education and race/ethnicity (Ellwood and Jencks 2004; Upchurch et al. 2002) so that increases in single-parent families have been more pronounced among the more socially disadvantaged.

The impact of the second demographic transition in Canada and the United States has been a steady increase in births outside of marriage. The consequences of this for family structure are somewhat complicated. First, as a number of authors have noted (Musick 2007; Wu et al. 2001), nonmarital childbearing is not synonymous with single parenthood. Indeed, it is increasingly clear that significant numbers of nonmarital births (as many as 50%) are to cohabiting couples (Bumpass and Lu 2000; Raley 2001). Second, although cohabiting families with children are largely similar to married families, recent research suggests that cohabiting couples are more likely than married couples to dissolve their relationship. Thus, it can be argued that the second demographic transition has resulted in substantially more variation in family structure than has been the case historically.

Other concurrent demographic changes in both countries have contributed to substantial diversity in family structure. Bianchi and Casper (2000) have documented how the effects of increased rates of divorce that peaked in the U.S. in 1980 and then leveled off and delayed marriage, contributed to a substantial decline in the proportion of two-parent families with children. Wu and Schimmele (2005) point out that less than half of Canadians who divorce form another union within five years and, if they do, that union is more frequently a cohabiting relationship. The result is that family structure has become more diversified than ever before (Dupre and Meadows 2007; Halpern-Meekin and Tach 2008; Meadows et al. 2008).

These considerations about changes in family structure across the life course and more macrolevel social changes in family structure have led us in two complementary directions, both of which are informed by many of Len Pearlin's ideas concerning stress process and life course. The first project is a follow-up survey of the women who participated in the *Single-Parent Family Study* in order to study single and married mothers across their life course. The second project is a study of new mothers who are married, cohabiting, or single at the time of their child's birth.

Family Structure and Mothers' Mental Health Over Their Life Course

When we consider the experiences of single and married mothers over their life course as opposed to a relatively short-time sample, it is unclear whether their mental health will improve, remain relatively stable, or decline. One argument is that long-term exposure to financial strain, caregiving strain, and role overload should produce continuing high levels of psychological distress and diagnosable

disorders among single mothers. Certainly, our initial two-wave study reveals that single mothers' elevated exposure to stressors persists over the short-term (Avison et al. 2007). In addition, Turner and his colleagues (Turner and Avison 2003; Turner and Lloyd 1995, 1999; Turner et al. 1995) have argued that individuals experience "cumulative adversity" in the sense that prolonged exposure to stressors builds up over time. The alternative argument is that certain factors contribute to declining levels of distress or prevalence of disorder among single mothers over time. First, levels of distress and disorder are lower in middle age than in early adulthood (Mirowsky and Ross 1992; Schieman et al. 2001; Wade and Cairney 1997) and this pattern holds for single and married parents alike (Avison and Davies 2005). Second, as the children in single-parent households make the transition to adulthood and leave home, the economic burden on single mothers is likely to decline. Third, as role occupancy extends over time, single mothers may re-establish networks of social support that can protect them from disorder (Turner et al. 2000).

A related question pertains to those mothers whose marital or parental statuses change over their life course. What are the consequences of repartnering/remarriage among single mothers and separation/divorce among originally married mothers? Relatively few studies have examined this issue (for examples, cf. Barrett 2000; Demo and Acock 1996). The same can be said for studying separation or divorce in mid-life. Although some studies report that individuals who divorce have higher levels of distress that decline a few years afterward, there is virtually no information available on the impact of separation and divorce on women in middle age (Hughes and Waite 2002).

A consideration of these life course changes becomes even more complex when we factor in changes in parental status. Over the course of our study, we can expect to find many mothers whose children have left home as part of the normative process of growing up and becoming independent. Thus, family structure, not just marital status, is likely to change over the life course.

As we see it, then, our major task is to capture variations and stabilities in women's family structure over the life course and link these to trajectories of their mental health over the same period of time. Once this has been accomplished we then want to explore how exposure to various stressors at different points in the life course mediates this link between family structure and mental health. Elsewhere (Avison et al. 2008), we have described the array of adversities and stressors that we believe to be important to consider: onset of depression in childhood or adolescence; adversities or potentially traumatic experiences in childhood and adolescence; precocious role transitions; and the operant burden of stress. Our goal, then, is consistent with some of the tenets of a life course perspective on the stress process that Pearlin has set forth. These include the idea that levels of exposure to stressful life events may decline in mid-life and the notion that the timing and clarity of events may be influenced by social and economic characteristics. In addition, the possibility that the availability of resources such as social support and mastery may change over the life course is especially interesting to us. So too is Pearlin's consideration of the timing and sequencing of life course transitions.

In 2005, we undertook a 13-year follow-up survey of the women who initially participated in the Single-Parent Family Study. We have successfully re-interviewed

349 (67.4%) of the original sample of single mothers; 16 respondents (3.1%) have died or are too ill to participate; 35 (6.8%) refused to participate; and we were unable to locate 118 single mothers from the original sample (22.8%). Attrition analyses suggest that the respondents who thus far have been lost to follow-up are somewhat younger and less well-educated than those mothers whom we successfully interviewed at time 3; however, there appear to be no other significant biases due to attrition.

We have completed time 3 interviews with 430 of the original sample of married mothers (an 85.7% success rate). We encountered only 25 (5.0%) who refused to participate and 10 respondents had died since time 2 (2.0%). We were unable to relocate 37 mothers from the original sample (7.4%). No attrition biases are evident for the sample of married mothers.

In addition to conducting structured interviews to collect data on a wide range of constructs central to the stress process model, we asked respondents to complete a life history calendar that documented a variety of experiences between time 2 and time 3. The life history calendars collected data on the timing and sequencing of events related to changes in marital status, household composition, childbearing, employment history, residential moves, and sources of income between time 2 and time 3. Time was measured in months. The design was based on the calendar described in Freedman et al. (1988) as well as work by Sorenson and her colleagues who later adapted the calendar for a longitudinal study of teenage mothers (Turner et al. 2000).

At this point, we have been able to use an array of variables that describes the family structures of the women in our study across the 14 years of this project. We have used latent class cluster modelling to place these women in one of four clusters of family structure that characterizes their family life over the course of this study:

1. long-term partnered women with children at home ($N=185$): these women have been married or partnered for virtually the entire duration of our study and their children still live at home with them.
2. long-term-partnered women without children at home ($N=184$): these women also have been partnered or married for the duration of the study but, on average, they have been "empty nesters" for over six years.
3. long-term single mothers ($N=154$): the vast majority have been single for the enture study and a substantial number have been "empty nesters" for five to six years; and
4. mothers in sequential family structures ($N=224$): most of these women were single mothers who have repartnered over the course of the study; a smaller number are married mothers who separated or divorced and have since repartnered.

Thus far, we have been able to map lifetime exposure to stressors to these clusters of family structure. Table 5.1 presents our preliminary attempt to determine whether patterns of family structure over the life course are associated with differential exposure to stressors. As we might expect, there are no substantial differences between long-term partnered mothers with or without children at home in exposure to stressors at any point in the life course. The only exceptions are at Time 3 when partnered mothers with children report more life events and more chronic strain.

Table 5.1 Variations by family structure in exposure to stressors across the life course

	Clusters of family structures			
Dimension of stress	Long-term partnered with children	Long-term partnered no children	Long-term single	Sequential family structures
IN CHILDHOOD:				
Childhood adversities	1.1	1.1	1.8	1.8
Lifetime traumas	1.5	1.4	2.6	2.7
TIME 1 INTERVIEWS:				
Life events	3.5	3.3	5.0	5.1
Financial stress	19.3	18.2	23.8	27.5
Caregiving stress	14.9	13.8	16.3	16.0
TIME 3 INTERVIEWS:				
Recent life events	2.4	1.8	2.6	3.2
Chronic strain	8.2	5.0	6.6	6.8
Abuse by partner (%)	25.0	22.0	61.0	68.0
Cluster size (N)	185	184	154	224

Both of these differences are attributable to stressors associated with parenting. Similarly, there appear to be no noteworthy differences between long-term single mothers and mothers in sequential family structures. What is striking, however, are the elevated levels of exposure of these two groups of women to stressors across the life course when we compared them to women who have been stably partnered throughout the study. This is especially the case for lifetime traumatic experiences, all dimensions of stress at Time 1, and lifetime reports of psychological or physical abuse by a partner. Compared to long-term partnered women who are "empty nesters." these women also report greater exposure to life events and chronic strain at Time 3. Thus, our preliminary findings seem to be consistent with Pearlin's contention that social structure conditions individuals' exposure to stress over the life course.

At present, we are exploring the utility of various quantitative methods that may enable us to test the links between clusters of family structures across the life course and trajectories of depression or psychological distress and then to test the mediating influences of stressors from various points in the life course. In this way, we believe that we can incorporate some of the most salient dimensions of a life course perspective on the stress process into our program of research.

Future Research on Family Structure and Mental Health

As I indicated earlier, North American society appears to be undergoing a second demographic transition in terms of the proliferation of a variety of family structures. Although this has resulted in the emergence of many different family structures, it is

clear that the vast majority of families with children are headed by single mothers, married couples, or cohabiting couples. It seems timely to extend our program of research to include cohabiting mothers.

Surprisingly few studies have examined differences between married and cohabiting mothers. Ross (1995) reports no differences in psychological distress between married and cohabiting respondents in a national sample of Americans, but others find that cohabiting individuals in the U.S. have levels of distress that fall somewhere between those for married and single persons (Horwitz and White 1998; Kurdek 1991); still other researchers find levels of distress and alcohol consumption among cohabiting individuals to exceed those among the married (Brown 2000; Marcussen 2005). Unfortunately, these studies seldom elaborate their findings by gender or parental status and it is thus difficult to draw any conclusions about the impact of cohabitation on mothers' mental health. Furthermore, these studies have not been designed to focus on younger cohabiting individuals – cohorts that have demonstrably higher risks for mental health problems. A national study in the U.S. that has been designed specifically to study unmarried couples, the Fragile Families and Child Wellbeing study (Carlson et al. 2004; Harknett et al. 2001; McLanahan et al. 2001) provides information about social capital, patterns of cohabitation, labor markets, welfare benefits, and child support, but it does not have a strong focus on mental health or substance use.

Moreover, results from U.S. studies on this topic may not generalize to other societies (Hansen et al. 2007; Mastekaasa 2006). Rates of cohabitation are higher in many European countries and in Canada than in the U.S. Furthermore, the probability that a child is born to an unmarried mother (either cohabiting or single) is strongly associated with race/ethnicity in the U.S. (Ventura and Bachrach 2000); this may confound the effects of family structure with the effects of racial discrimination and poverty. In addition, in Canada and many European societies, cohabitors' access to health insurance through their partner is not as limited as is typically the case in the U.S.

We are aware of only two studies that have contrasted married mothers' mental health outcomes with single mothers' and cohabiting mothers' health. Results from the British Millennium Cohort Study indicate that cohabiting mothers are significantly more likely than married mothers to have experienced depression and that single mothers report even higher rates of depression (Kiernan and Pickett 2006). A Canadian study of a large sample of pregnant women interviewed between 10 and 22 weeks' gestation, Sontrop et al. (2008) reports that both cohabiting women and single women have significantly higher psychological distress than married mothers.

This gap in our knowledge about family structure and maternal mental health is even more apparent when one considers these issues from a life course perspective on family structure and health. Indeed, one of the major limitations of research has been the absence of longitudinal studies of the association between family structure and health. Although studies of the impact of separation, divorce, and remarriage indirectly provide some evidence on this issue (Amato 2000; Booth and Amato 1991; Johnson and Wu 2002; Wade and Pevalin 2004), very few studies document

concomitant changes over time in family structure and health. Recently, Meadows et al. (2008) have contrasted the health trajectories of mothers whose family structures have been relatively stable over time with those who have experienced transitions into and out of marriage and cohabitation. They report that multiple transitions in family structure are associated with poorer health among mothers.

We have embarked on a new study to examine the impact of family structure on maternal and child health. Our approach will be to interview approximately 2,100 mothers within three months of the birth of their child. This sample of mothers will be composed of equal numbers of married, cohabiting, and single mothers. We expect this baseline survey to be the first of a series of interviews over the next 20 years that will enable us to examine family structure and mothers' mental health over the life course.

In addition to examining differences by family structure in the mental health of new mothers, we will also collect extensive information on their exposure to a wide array of stressors. These measures include recent life stress (as a joint function of life events and role-related stressors, lifetime exposure to major traumas and adversities, a history of intimate partner violence, and measures of ambient stressors that reflect neighborhood environments).

Early adversities and traumas and precocious role transitions are likely to be associated with early onset of disorder and higher levels of symptoms as well as more frequent recurrences of disorder over the life course. They should also be associated with higher probabilities of cohabitation or single parenthood and, among married women, less marital stability over the life course. Thus, these early experiences may be critical turning points in the lives of women because they influence two trajectories simultaneously. This is consistent with Elder's (1994) idea that trajectories may become intertwined over time. We expect that these childhood and adolescent transitions may contribute to the interconnectivity among trajectories.

Recent research has also drawn attention to intimate partner violence (IPV): physical, sexual and/or emotional violence by an intimate partner in the context of coercive control (Tjaden and Thoennes 2001). Some studies report that single mothers are much more likely to experience IPV than married mothers (Davies et al. 2001).

As might be expected, we also plan to examine the roles that psychosocial resources such as perceived social support, mastery, and mattering play in mediating or moderating the impact of these various dimensions of stress on mothers' mental health. Social support, in particular, has been the focus of a number of previous studies of pregnancy and motherhood (Dunst et al. 1986; McKenry et al. 1990; Thompson and Peebles-Wilkins 1992; Turner et al. 2000). Although this research has demonstrated that social support is important in predicting maternal mental health and children's birth complications, most of this work has focused on single, adolescent mothers. We need to understand whether social support is as powerful among older mothers in other family structures.

Finally, we plan to study the stress process among single, married, and cohabiting mothers while attending to three contextual dimensions: the meaning and experience

of pregnancy; the context of paid work; and life course experiences. A number of factors may influence the meaning of a recent pregnancy/birth. These include reproductive history (number of past pregnancies, abortions, and births) and whether the current pregnancy was planned and/or wanted. These contextual factors may not only affect outcomes directly, but may importantly moderate the impact of stress on disorder and substance use. It seems plausible, for example, that an unwanted pregnancy/birth constitutes an additional relevant source of stress. These attitudinal contexts may be linked to identities and are likely to influence how mothers interpret the experience of motherhood outside of marriage.

Studies of the impact of work on single and married mothers' distress suggest that these relationships are complex (Ali and Avison 1997). For some women, the strain of paid work in "McJobs" offsets any economic advantage. Edin and Lein's (1997) analyses of these circumstances suggests the need to investigate further the intersection of paid work, family structure, and mental health. The kinds of work that new mothers may return to after the birth of their child may have important implications for their psychological well-being. Moreover, the decision to return to work may be conditioned importantly by whether they are married, cohabiting, or single.

Over time, we expect to be able to observe different trajectories of family life among these women. Some who were married at the time of their child's birth will separate or divorce. Some cohabiting mothers will marry their partner; others will terminate the relationship. Some single mothers will later cohabit while others will marry. Still others may remain single. With a long-term, prospective design, we hope to be able to study family structure, stress, and mothers' mental health in a life course perspective.

Thus, our goal is to take the central tenets of the stress process model and elaborate them by considering variations in the contexts of family life. By taking these contextual possibilities into account, we have the opportunity to explore the complexity of social life, especially as it relates to family structure. In this way, we hope to generate a better understanding of the continuities and contingencies that link family structure, stress, and mental health.

The Pearlin Effect

The stress process paradigm has had enormous influence on the study of social structure and its consequences for everyday life. The initial publication of "The stress process" in the *Journal of Health and Social Behavior* in 1981 stimulated a cohort of sociological researchers to investigate issues ranging from the measurement and impact of stress to studies of social support and coping. This in itself would have been a substantial legacy of the stress process paradigm; however, Leonard Pearlin's ongoing reappraisal of the stress process and his abiding interest in elaborating and extending the model has continued to motivate researchers to extend their own programs of research. I like to call this the "Pearlin Effect."

The Pearlin Effect has resulted in the extension of the study of social structure, stress, and mental health to consider ongoing, role-related stressors in addition to discrete life events. It has encouraged researchers to consider a more dynamic model that encompasses considerations of the life course. The Pearlin Effect has stimulated researchers from diverse disciplines to think differently about caregiving and about issues such as stress proliferation.

The Pearlin Effect has shifted my interest in family structure and mental health from a focus on social problems or public health to one rooted in a sociological investigation of social structure and its many consequences. For me, and I suspect for others as well, the Pearlin Effect has been to make us better sociologists.

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Chapter 6
The Stress Process Model: Some Family-Level Considerations

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Consider an urban neighborhood, where houses and apartment buildings dot the landscape in a bustling community. In one home, we find a wife who has recently taken on additional paid work due to her husband's layoff. Across the street, family members feel continual strain from the "second shift" of caring for two young children in combination with two demanding full-time professional jobs. They are considering what to do, because in the words of the father, "It's not working for us." A third home contains what others regard as a "shattered" family, suffering from the tragedy of a teenager killed in a drunk-driving accident two years back. The next block down, family members decide that in order to keep a youngster from potential trouble with his peers, he will be sent to live with an aunt in the summer, where he will take a job and contribute income to the family. Peering into another home, we find a single woman living alone, tending to her aging mother across town, negotiating a network of care comprised of siblings and the mother's friends. She considers the costs, financial and emotional, of persuading her mother to leave her lifelong residence in order to receive more extended care than the daughter's network can provide. The people in this neighborhood exhibit varying degrees of distress, but to understand how they are negotiating their difficulties, appreciating individuals as variably enmeshed in family systems can extend our understanding of the stress process.

Complex threads weave family members together to their fates, good and bad, and tie together their abilities to marshal resources to abate stressors. Although families are made up of individuals who are growing and changing in their roles, relationships, and personal development at various rates, irreplaceable, often very long-term bonds with family members bind each to the well-being of the whole unit (Menaghan 1997; Pearlin and Turner 1987). Moreover, the family unit may take on unique significance in societies in which families are ideologically revered yet provided with few governmental supports. Indeed, most people consider the family

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to be the center of their lives, physically, and/or emotionally "coming home" to the same exact people each day for long periods of time (Turner 1970).

In this paper, I discuss the importance of extending Pearlin and colleagues' stress process model (Pearlin 1999; Pearlin et al. 1981) to the family level, incorporating knowledge from family stress theories within sociology and other disciplines. Using the key components of the stress process model as an organizational frame, I first address: What are family-level stressors? How can certain "objective" events or conditions be family-level stressors for some and individual stressors for others? Second, I consider coping, social support, and even mastery at the family level. I then describe some potential ways to understand outcomes when examining family-level stress processes, and address the fundamental importance of social and economic statuses for considering family stress processes. Although stress processes occurring at the individual level and at the family level may be productively viewed as existing in layers (Wheaton 1999) or along a continuum, I generally discuss these two levels as conceptually distinct. Conger and Elder's (1994) note regarding how stress initiates change in the "chemistry and matrix of family-based interdependent lives" underscores the complexities of assessing these levels of analysis in the stress process.

I will argue that stressors operating at the family level may affect individuals over and above what they experience directly, because the fates of individuals are intimately tied with that of the unit that organizes their lives, and vice versa. Moreover, moderators at the family level may provide resources to individuals net of their own personal resources. Next, I show how the stress process model can enrich studies of family stress by focusing on the implications of family members' sharing of some statuses (usually economic and ethnic) and diverging on others (gender and age). Finally, I argue that the stress process can contribute to other family stress research traditions by highlighting social statuses and neighborhoods.[1]

The Meaning of Family for Stress Researchers

It behooves researchers to consider varying definitions of "family" for the purpose of understanding family stress processes. One way is to assert that whomever an individual deems or understands as "family," including fictive kin, is indeed the group that should be assessed to ascertain how the family-level links to the stress process (e.g., Mitrani et al. 2006). A second, common way to assess family-level processes is amongst members who all live in the same household.

[1] This chapter differs from Pearlin and Turner's insightful (1987) work "The Family as a Context of the Stress Process," because, as they point out, individuals within families are discussed, not families as units (p. 145). Similar to Pearlin and Turner (1987), although I provide some ideas about measures, the goal is not to systematically discuss methodological issues linked to assessing the stress process at the family level.

Finally, researchers can define a group based on their research interests, such as adult siblings and their parents, and assess individuals in that grouping. The distinctions in meanings have ramifications for conducting research on the stress process; for example, as will be described below, certain social ecological problems are most easily understood to affect family groupings that exist within the same household or neighborhood.

Family-Level Stressors

Pearlin and colleagues' (Pearlin 1999; Pearlin et al. 1981) stress process model typically measures "family" strains as felt by individuals in marital, parental, or caregiving roles. Marital strains might be measured by asking individuals how critical their spouse is, whether he or she gives into demands (Pearlin and Turner 1987), and so on. For parenting strains, researchers often ask about parents' perceived difficulties in arranging child care, in disciplining children, or whether children treat them respectfully (Bird 1997; Milkie et al. 2008; Pearlin and Turner 1987). Caregivers are asked, for example, whether they feel trapped or overwhelmed in taking care of an ill family member (Pearlin et al. 1997). In this section, I will describe two types of family-level stressors (1) social ecological stressors and (2) stress transfers that are perhaps not captured fully through assessment of individuals' strains in these specific family roles. The social ecological stressor can be thought of as something external to the family unit but which occurs to the family rather than to a particular individual (Wheaton 1999). Stress transfers occur to one person, but through various means, invade others within the family unit (Westman and Vinokur 1998). Following the discussion of these two types of stressors, not necessarily captured through a focus on role strains, I discuss a critical factor for understanding the family stress process: negotiating the definition of the situation and the division of stressors among family members.

One clear type of family-level stressor is a social-ecological stressor (Wheaton 1999), which occurs as an event, threat of events, chronic problems, or ambient strains that influences the entire family unit. Natural disasters, crimes, terrorism, car accidents, as well as economic downturns, discrimination, and neighborhood transience that occur to the whole group may be especially pernicious blows that affect families and individuals within those units greatly. This occurs not only through the potential displacement of others to whom one is bound, so they are not available as emotional or instrumental support, but to the upheaval or wearing down of the unit itself, adversely affecting those who are bound together with oneself (Walsh 1996). A violent crime committed against an individual is a very difficult stressor, but a robbery occurring to several family members home during a break-in can shake the foundation of the family itself.

Already a part of the revised stress process model (Pearlin 1999), social ecological stressors may occur in the form of neighborhood strains such as crime, disorder, and poverty. These expose the whole family unit to problems of living in a geographic

space; and in turn, having a family that is "trapped" in a problem neighborhood presents greater difficulties and different yearnings to an individual than if it were he or she alone who was stuck. Moreover, trying to relocate several members to a safer place is a far more complex problem for a family member to solve than if nobody else's fate was also tied to his place of residence. Thus, measures of negative life events occurring to individuals might include more systematic inquiry into whether events or strains occur to an individual only, or also to one's family members.

A second kind of family-level stressor, a stress transfer from one individual to the family unit is not typically examined within the stress process model. However, it does lie within the "linked lives" tradition in life course research (Milkie et al. 2008) and is discussed in sociological and other literatures as "crossover" or contagion of stressors from one individual's roles - often economic roles-, to other people in the family (e.g., Bolger et al. 1989; Conger and Elder 1994; Elder et al. 1995; Wethington 2000). Family network events and strains can reach into the unit in three key ways: by changing the roles or situations of others in the unit directly; by altering the quality of the relationships themselves, or through making other family members feel the pain or grieve the problems of the others (Westman and Vinokur 1998).

Research on the first type of "transfer" from one individual to the roles or situations of other family members stretches far back in the "linked lives" paradigmatic theme of life course scholarship. Here, an event or strain affects one member of the unit, which in turn, affects the roles and living conditions of others in the unit, for example, when unemployment of one family member affected the health of others during the Great Depression (Elder 1974). Elder (1974) demonstrated that when fathers were unemployed during the Great Depression, mothers and children took on new roles in the family and community, thereby altering their sense of self and well-being. Another example is when one member's physical or mental health becomes so poor that he or she requires caregiving from other members. Here, the seriously ill individual's difficulties intimately invade an entire unit of people living in a household together (Avison 1999). The difficulties may transfer from the "problem" individual to one person in the household more so than other people in that household.However all members are living in a "caregiving" household in which a person has or develops extraordinary needs, affecting the everyday interactions in the household and shifting the balance of roles, labor, and resources within that unit from what it would have been otherwise. It may be useful to assess how much subjective burden members of caregiving families feel personally, and how much burden they perceive the whole unit to be experiencing.

Another transfer or spillover of stressors occurs more directly in the form of affecting the quality of the relationships themselves. This kind of family stress transfer is evident in work on parental employment, marital discord, poverty, or mental illness on children's mental health (see Avison 1999). For example, mothers' occupational conditions (Menaghan 1997) and experiences of living in poverty (McLeod and Shanahan 1996) affect how warmly they interact with children and the children's subsequent mental health outcomes. From parent to child, the unequal power relations make the crossover of one's stressors to the other's mental health quite certain – young children cannot easily control their living conditions,

the parent's interactions with them, and so on. Among adults, sometimes crossover from one person's stressors to another becomes manifest in difficulties within relationships; these are sometimes captured in measures of marital/partner or parenting strains in studies using the stress process model (Pearlin and Turner 1987), but sometimes they are not, because there are many mediating factors in addition to role strains within relationships (Avison 1999). Another interesting possibility here relates to examining sequences of stress: as the stress process model (Pearlin 1999) indicates, flowing from one individual's primary stressors (say unemployment) are secondary stressors (trouble with the wife). Examining a family unit allows us to understand the sequencing that occurs across different members; what is secondary for one member (e.g., marital strains) may become the "primary" way that another living in the household experiences the stressor.

Still a third type of stress transfer is when one person in the family network experiences problems and others are distraught by the very fact of that problem hurting a loved one (Bierman and Milkie 2008). In these cases, family members experiencing the stressors need not live in the same household in order to impact others. This is known as the "cost of caring" for others, and may be especially common among women whose very role definition as nurturant encompasses the costs of feeling more network events and being more responsive to them (Kessler and McLeod 1984; Turner and Avison 1989). Recent research has shown that negative events like trouble with work, the law, or spouses that occur to adult children create emotional difficulties in older parents' lives (Greenfield and Marks 2006; Milkie et al. 2008; Pillemer and Suitor 1991). These network events in the lives of adult children do not necessarily create a strain in the relationship itself, but rather, the event "hurts" the parent as if she were experiencing it herself – it is a transfer of the "pain" of one to the other, likely because of the "prized and cherished" attachments between family members (Pearlin and Turner 1987). Even years after problems occur, parents' feelings that they have failed in their role obligations to help children flourish may haunt them. For example, elderly parents who report having once had a teenager with difficulties with drugs, school, or disobedience are worse off emotionally than other elderly parents (Milkie et al. 2009). As Pearlin and Turner (1987, p. 143) note, "Relationships that begin with life itself and are terminated only by death foster powerful emotional stakes." These family "network" events and conditions are only sometimes explicitly measured as part of the stress process model (e.g., Turner and Avison 2003; Turner et al. 1995); including these and examining their meaning more explicitly may enhance our understanding of individual family members' mental health.

The Negotiation of Claims About a Stressor: Whose Problem Is It?

A fundamental question to consider at this point is inspired from the literatures on the intersection of gender, work, and family. When are problems shared equally across families versus "dumped" onto one person? Specifically, under what conditions does a new problem become an individual versus a family stressor?

What are the consequences of the equal sharing of a calamity versus the claiming of it by a specific member, for the unit and for the individuals in it? Here we can see that problems are "messy" in that they may be not "purely" an individual problem or a family problem, but somewhere in between, and the "familiness" of the problem, then, can vary across members (Walker 1985) with women perhaps more linked into a "family stress process" than men. This is in part due to women's lesser power and in part to strong cultural expectations about their roles within families (Bianchi et al. 2006).

The family processes linked to the division of stressors may be most easily assessed by examining "new" problems occurring to the family unit. Take for example a somewhat minor but common social ecological stressor for families where it is discovered that the head of an elementary school-aged child is covered with lice. Action must be taken quickly, or the vermin will spread to other family members, if it has not already. Products must be purchased, the child must be treated, and the household turned upside down to vacuum, wash, and ensure that the creatures will not continue to maintain their presence. Friends and schools need to be notified, and so on. The child and indeed all family members must be methodically checked for lice daily for a period of weeks, a process that can take hours. In Family A, a mother takes on (through her own claim or through a power situation where she has little choice) the problem as her own. She does all the labor, potentially cutting into her work, leisure, or sleep and creating overload. She solves the problem eventually, but not before lice are transferred to two other siblings who have to miss some school due to the institution's regulations about infestation. In Family B, not only do both parents consider the lice to be "their" problem, but the children are enlisted to be partners, and the grandparents come in to help too. In this case, the stressor can be assessed as a unit problem in which all members learn about and attend to the problem; perhaps it is solved earlier, with less contagion of stressors, and with no resentment among family members.

Although some problems may proliferate from one family member to others through transfer processes that may not be easily negotiated, other problems have the potential to be contested and claimed. Among these, considering the family dynamics of dividing problems will reveal diversity. In some families, the labor is divided equally, and in some it is not. Some families decide and discuss how workloads (including handling new problems) will be shared across family members, and others allow workloads to be dumped upon a single member. Why? Indeed the "definition of the situation" created by family members may feed directly into whether or not specific individuals will experience strain. Particularly in ambiguous situations, sociologists can address divergences and similarities in families; for example, how groups of siblings define problems surrounding an elderly parent: What is her condition? Does she need help? Who is to provide it? (Klein 1983). Some groups of adult children will discuss these issues as "our (family) problem" and divide up the labor and costs of care. Others will "allow" one sibling to take on the problem as her own.

Future research can examine the mental health consequences arising from different divisions of stressors. First, even among family members who define ongoing and

new stressors as "our" problem, it is not clear whether this divides the burden into a manageable (smaller) amount across each member, or whether it acts more as stress proliferation in which shared stressors means everyone feels strain, and the sum total of stress across members is a heavier overall burden than had one member "kept" it to himself/ herself. Second, it is worthwhile to assess the tremendous variation in the potential ways in which the workload is divided to attack the stressor that is shaking up family life. Some families may decide to share each new problem equally by each participating in the same instrumental tasks needed to improve or alleviate the problem; others may assign equitable but different tasks to various members (one sister helps an ailing mother sell and move out of her house, another researches and finds assisted living centers that will be appropriate for the mother) and still other families may decide to sequence problems; since the father took on the care of a child's problem teeth (making and taking him to numerous dental appointments, finding an appropriate dentist for the ensuing years of braces, and filing insurance claims), the mother will be expected to handle the next health or academic "crisis" occurring among the children. How these varying ways of carving up perhaps unexpected but fairly regular family problems matter for understanding consequences for individual mental health are appealing empirical questions.

Moderators: Taking Them to a Family Level

A central focus of the stress process model is how resources moderate and mediate stressors for individuals. Coping, social support, and mastery are important resources and may buffer stressors for individuals, even those occurring at the family level. However, it is also important to think about these three moderators in a somewhat different light when considering the family stress process. In a review of stress and coping, Thoits (1995) calls on us to pursue the understanding of properties of groups that might provide a sense of support, arguing that these supra-individual associations are "in keeping with a distinctively sociological approach" (p. 67). There is a large literature on the importance of family cohesion, solidarity, coherence and the like (Antonovsky and Sourani 1988; Lavee et al. 1987); moreover the shared realities that families create as meaning makers is an important consideration here (Broderick 1993). Here I discuss resources fundamental to Pearlin's (1999) stress process model and how they might be extended to the family level.

Coping

According to Pearlin (1999), coping "refers to the behaviors that individuals employ in their own behalf in their efforts to prevent or avoid stress and its consequences" (p. 406). First, as hinted at in the above example of a wife taking on more paid work when her husband is laid off to prevent the proliferation of financial

strain within the family unit, families can cooperate by coping for others (Menaghan 1983). Family members often recognize that problems affect everyone, and sacrifice is necessary for the good of the whole family unit's health. In this case, a wife "copes for" her husband and although she has not directly fixed his problem of unemployment, she prevents him and others in the family from experiencing stress proliferation (Pearlin 1999) – in this case, financial strain, and perhaps displacement from their neighborhood.

Families will vary in the degree to which they recognize problems, and cope together and for each other (McCubbin and Patterson 1983; Plunkett et al. 1999).[2] For example, imagine two families that have problems with overload brought on by a second child added to a family that already has a preschooler and two full-time jobs. In Family A, each member might experience a great deal of strain under conditions that continue on, worsen, and "pile up", as not only are there objective difficulties meeting the everyday demands required across roles, but each member's negative mental health impacts the others; resentments brew, and the daily pressure makes for an unpleasant existence for all. In Family B, the family recognizes that they have a problem, and that things are not "working" for the unit. They agree that having a baby, a preschooler, and their demanding professional jobs is not viable, so they agree the family unit must somehow reorganize in order to reduce tensions for everyone. They consider three options: (1) making a geographic move to another part of the state or country where they can afford to live on one income (Becker and Moen 1999); (2) having one partner, probably the mother, reduce to part-time hours (Becker and Moen 1999); or (3) hiring significant amounts of additional help, for example workers to tend to the yard, clean, deliver groceries, and the like, freeing up some hours for family time. Each parent knows they are balancing their own interests with that of the whole unit; they may sometimes sacrifice by scaling back their own career for benefits that accrue immediately to the group and perhaps in exchange, they will benefit career-wise down the road when other members make sacrifices (Becker and Moen 1999). Family B eventually chooses option two, and subsequently, all members of the family experience less distress and things return to a "normal" equilibrium. In families where these options might not be economically or otherwise feasible, one parent may change to work a different shift, enabling the children to be with parents more often, potentially reducing distress within the family (Glass 1998); or the family may enlist a parent to temporarily move in the household to help out.

Family members may even proactively notice and "solve" (potential) problems of an individual and the greater family unit. Thoits (1999) argues that we need to look at how people with high mastery prevent stressors from occurring in the first place; here too we must understand how family members prevent problems from occurring (and being observed by researchers) at the individual and family level. An interesting

[2] Family-level coping likely varies in socially patterned ways, perhaps most notably based on their social class, the resources of which (or lack thereof – see Stack 1970) may be especially important in being able to cope for others. Additionally families that are newly formed or reformed, such as step-families are likely to cope together in different ways compared to more traditional families (Barrett and Turner 2005).

case occurs when one family member sees potential stressors for others and intervenes, sometimes even without the target individual realizing or fully appreciating it. The example cited at the outset, of sending a child away from a problematic peer or neighborhood environment, may prevent the onset of new problems for that child, socially and academically, and in turn prevent the family as a whole from feeling the problems of an errant teen. The young person "sent away" to others in the family may not even be aware that this is a protection from stressors and may not appreciate it, but still reaps the benefits of the invisible hand of the family in his life. Compare this to a family that is unwilling or unable (perhaps not even being able to afford the cost of transporting a child to another state) to act as a buffer through the temporarily removal of a child from a noxious environment; the youngster's subsequent troubles with crime may reverberate through the family in ensuing years. Coping might mean reorganizing the family for example with geographic moves. It might also mean changes in labor force participation that families can sometimes negotiate to confront and alleviate overload occurring due to relocation of a member to military service or having young children along with demanding jobs, for example.

The complexity of assessing family-level moderators is evident here in the intermingling of the concepts of "coping for others" and "donated instrumental social support" within families. As Pearlin (1999, p. 407) notes, "What is strikingly absent" from research on social support is information about the donors of support. The idea of "invisible support" is especially apt (Bolger et al. 2000). Bolger and colleagues (2000) examined couples in which one partner was preparing to take the Bar exam. They found that the most effective influence on the test-taker's mental health was when his spouse said she provided support, but he did not report receiving it. Within families, the subtleties and richness of "invisibly" supporting and coping for others is perhaps missed when individuals are the unit of analysis. To underscore the important point here: whatever terms researchers use to describe the interwoven relationships of family members, problems, and coping solutions, these interconnections deserve more careful attention when our object of interest includes individuals living in family units.

Social Support

Support comes from family members as well as from outside the unit. A question to consider for extending the stress process model to the family level is how enmeshed families are in larger networks that may enhance individual resources – residing within a family that attends religious services together may provide superior comforts and supports for one compared to being part of a family whose members are not part of a tight network of supports (Thoits 1995). For individuals, perceived support from the special, culturally-revered aggregate of "family" may be valuable, especially if the whole family unit is tied to other, larger community supports. An individual within a family unit tightly woven into networks of support is stronger and better able to buffer effects on the unit than a person whose family is unevenly woven through or is not part of the fabric of the community.

Family Mastery and Resilience

Finally, the concept of family mastery is important here. Different families and family members vary in the belief that *together*, *we* can do anything; the belief that members can work together to solve the problems of the unit.[3] Family mastery may moderate family-level problems. For individuals, family mastery may be a powerful, additional buffer that assures individuals that together with family members, the unit will do anything to mobilize the instrumental and/ or emotional help needed. An example may be instructive. Fivush and colleagues (forthcoming) showed why family narratives are so important through an analysis of conversations among members about positive and negative family events. What distinguished better off adolescents from others were those embedded in families that discussed past family problems and their resolution coherently, collaboratively, and with great elaboration of events and emotions. In these families, interactions built a positive sense of self and reduced behavior problems among adolescents, suggesting that being part of a capable family may have a psychological value-added effect. Families build narratives together which help members make sense of a challenge and how the family and its individual members should respond to it (Walsh 1996).

Though in the face of calamities and their aftermath, families are often referred to as shattered or dysfunctional, they are less often viewed as resilient (Walsh 1996), which at the family level may mean both connectedness among members and a shared sense of family mastery (Moen and Erickson 1995). The idea of family resilience is a promising addition to literatures on individual resilience that reflect the cultural bias of the rugged individual, standing alone in his strengths (Walsh 1996). Often, families report "pulling together" during crises and integrate experiences into a positive family identity (Walsh 1996), perhaps one where knowledge that "we can do it together" is especially salient.

Outcomes

How shall we measure outcomes in assessing family-level stress processes? One way is to simply examine individual well-being, but with careful attention to how family-level stressors and moderators are additional factors that impinge on and may be protective for individuals, much as the neighborhood literature does (e.g., Aneshensel and Sucoff 1996). Second, researchers could assess the aggregate of

[3] As Antonovsky and Sourani (1988) posit for family sense of coherence, perhaps family mastery as a group construct can be considered most strong when all members agree that "we" can solve our problems.

well-being across different family members in an attempt to ascertain the overall health of families. Third, one could consider the connectedness of family members as an outcome, such that families under great duress may split apart and no longer be tied as family members in the same way or be tied together at all (i.e., the original unit disintegrates; perhaps some members stay together and reform new bonds with others) (Waller 2008). This could occur through divorce, but might also be through the fracturing of adult siblings and parents who no longer consider themselves as part of a unit. With the use of longitudinal data, researchers can carefully examine how and when units fracture based on the level of individual and family-level stressors and resources, following the complex links among membership and stressors occurring to the unit and individuals within it. Moreover, examining the special case of the loss of central or "family defining" members such as a child through death, incarceration, or relocation may be especially instructive. Finally, how new family groupings, such as that which occurs when a step-father joins a household, make meaning surrounding the new unit and its newfound challenges, is also relevant to the family-level stress process.

Social and Economic Statuses

The stress process model highlights at least four key social statuses, including socio-economic statuses (SES), race/ethnicity, gender, and age (Pearlin 1999). In assessing family-level processes, the first two statuses (SES and race) cohere in that family members are likely to be similarly stamped; the latter two categories differentiate family members from one another and may be linked to the power to define stressors as belonging to certain family members and not others, as well as to how easily stressors cross over among network members.

Social Class and Race

The stress process model offers to family stress researchers a powerful sociological approach to make sense of family processes and to take careful and systematic account of them: examine the social, economic, neighborhood, and racial/ethnic statuses of family members. Indeed it is likely that the most critical aspects of how family members are able to marshal resources of the unit are based on its socioeconomic standing. Systematic assessment of families' economic conditions in family systems research is critical to understand stressors, resources, and outcomes (Avison 1999; Barnett 2008). Race and ethnic groups also vary in their assessment of problems and family processes (Parke et al. 2004) and push us to consider variations in families' level of the stress of racial discrimination (Murry et al. 2001). These two statuses typically unite family members within social locations, and when they do not, it may be an interesting way to assess power within family stress processes.

Gender and Age

Gender and age statuses mark differential expectations, as well as power relations in families, and since they will differ across members, they are important to understanding family distributions of stressors and how people engage in instrumental or emotional labor (care work) for other members' problems. For example, Bolger et al. (1989) found that when husbands had overload at work, wives had greater subsequent home involvement; however when wives had overload at work, husband's home load did not increase appreciably. Although gender is at the center of stress research which attempts to assess how men and women are differentially vulnerable to stressors or respond to them (e.g., Turner and Avison 2003), when considering families, gender becomes fundamental. Here, considering the cultural meanings people attach to family roles such as mother versus father, the division of unpaid and paid labor, as well as other components of gender processes in families are crucial to assessing how problems become distributed, how people support one another within families, and so on.

Age is also an important status differentiating family members, with young children and perhaps the elderly in positions of lesser power and responsibility within the family stress process. Although children have sometimes been at the center of research using the stress process model (e.g., McLeod and Shanahan 1996), youth is undertheorized within the model. Indeed, Miech and Shanahan (2000) call out the static and adult centric approach of the stress literature, claiming it "rests on an implicit conception of an 'ageless adult' who experiences the same stressors and reacts to them in the same way from age 18 to the end of life" (p. 162). When considering the family stress process, children of all ages should be considered as key members in the same ways as adults are, with special attention to their lesser powers and responsibilities within families. And among youth, the specific age of the child may be quite relevant to his/her position within the matrix of family problems and distress; for example, children during the Great Depression had quite different experiences and felt consequences of the family strains of unemployment and income loss depending on their specific birth cohort (Elder 1974).

The Stress Process Model and Family Stress Research

There is a huge volume of research from different disciplines such as sociology, psychology, and family studies that already carefully attend to family-level stressors, moderators, and/or outcomes (Malia 2007; Patterson 2002). Theories such as Bowen theory (see Klever 2005 for an overview), the ABCX model of family stress (e.g., McCubbin and Patterson 1983; McCubbin et al. 1980), family systems theory (e.g., Broderick 1993), the family stress approaches developed by Walker (1985) and by Conger and Elder (1994) and others link closely with some of the positions presented here. There are two points to underscore. First, Pearlin and colleagues'

(1981, 1999) stress process model within sociology has been prominent and has generated a prolific amount of research highly productive of knowledge about individuals' stress. The ideas described here push researchers using the model to ask questions about when and how individuals exist within family units and whether examining stressors and moderators at the family as well as individual levels will enhance the understanding of the research problems they assess (Menaghan 1983). Second, the stress process model has important sociological components that can become especially useful for those in other disciplines: the systematic assessment of social statuses, particularly social class and race as clearly differentiating families in their experiences of stressors, moderating resources, and outcomes. Moreover, explicitly attending to gender and age as linked to power differences within, and cultural ideologies about family can be particularly useful to scholars. The dialogue between Pearlin's (1999) stress process model and family researchers in sociology, psychology, family studies, and other disciplines will allow for a fuller understanding of the family stress process.

Conclusion

Leonard Pearlin's (1999) stress process model has been highly influential in the study of individuals' mental health and the proliferation of knowledge about distress and its social distributions. Given that the vast majority of individuals live with family members, are deeply connected with them, or both, it not a trivial issue to extend the model in the direction of some family-level considerations. Presumably, researchers using the fruitful stress process model can adapt it to examine family-level processes such as stressors, moderators, or outcomes without necessarily utilizing this level for all aspects of inquiry. The model, at any level, helps researchers to conceptualize the stress process in extremely productive ways and will continue to do so in the future.

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Chapter 7
Linking Early Family Adversity to Young Adult Mental Disorders

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Depression is one of the most common psychiatric disorders among youth and adults. It is considered to be a serious mental health problem due to its chronicity, severity, and social and health consequences (Cicchetti and Toth 1998; Kessler et al. 2005). Previous research on youth has shown that early stressful experiences contribute to the early onset of depressive disorder, with a trend toward an increasingly younger age of onset (Kessler et al. 2001; Kessler and Magee 1993; Wickrama et al. 2005). Research has also shown that depressive disorder tends to: (1) recur over time (homotypic continuity), (2) be co-morbid concurrently with other psychiatric disorders, and (3) influence the onset of other psychiatric disorders (heterotypic continuity) (Costello et al. 2003; Kessler et al. 2005). An increasing volume of research reveals that there are a number of socioeconomic consequences of adolescent depression, with particular implications for the successful transition to young adulthood (Stoep et al. 2002; Wickrama et al. 2008).

Earlier research on diagnosed depressive disorder, however, offers a very conservative evaluation of mental health problems. Although the diagnostic algorithms for most disorders are based on the intensity and duration of symptom experiences, symptom measures by themselves may provide additional dimensional information about mental health problems. Thus, information about depressive disorder should be supplemented with dimensional information on symptom severity (Gotlib et al. 1995; Kessler 2002).

Although researchers have a good understanding of the continuity of psychiatric disorders and psychiatric symptom trajectories, potential mutual influences between these two facets of a mental health problem are less known, especially over the early life course. Even less is known about (1) how the inter-play between symptoms and disorders progress as youth move from early adolescence to young adulthood and (2) how this process is initiated and shaped by childhood and early adolescent stressful experiences. The linking of early stressful family experiences,

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stress-response trajectories over adolescence and emerging adulthood, social failures/attainment and young adult psychiatric disorder in young adulthood is consistent with what Pearlin et al. (2005) have called the stress process over the life course. This theoretical advancement, an alliance of stress process perspective (Pearlin 1989) with life course perspective (Elder et al. 1996), provides the theoretical guidance to understand dynamic temporal associations between stressful family experiences, youth stress-response trajectories and subsequent young adult socioeconomic and mental health outcomes. Such a comprehensive investigation requires researchers to follow the same youth over a long period of time because they alone are the best source of information about this process (Costello et al. 2003).

Using prospective data from 485 adolescents over a 16-year period, the goal of the present investigation was to test a comprehensive model that addressed the above research questions. In a previous study using the same sample, we had investigated a family for origin antecedents and young adult social consequences of depressive symptom trajectories (Wickrama et al. 2008). The present study extends the previous work by examining reciprocity between symptom trajectories and disorders (based on DSM-IV criteria) during adolescence and during the transition to adulthood. These symptom trajectories and disorders are then used as predictors of success or difficulties in the transition to adulthood and mental health outcomes in the early adult years.

The Theoretical Model

The theoretical model in Fig. 7.1 proposes specific hypotheses in relation to these issues. The first hypothesis is that early family of origin (FOO) stressful experiences will initiate and shape depressive symptom trajectories during adolescence and transition to adulthood. The second proposes that depressive symptom trajectories

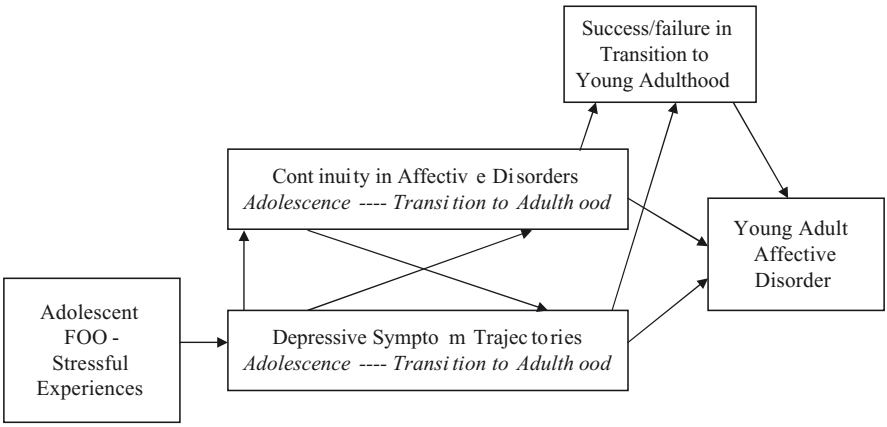

Fig. 7.1 The theoretical model

will contribute to the onset and/or recurrence of adolescent affective disorder. The third hypothesis proposes that depressive symptom trajectories and psychiatric disorders will influence each other during adolescence and during the transition to adulthood. In turn, adolescents' depressive symptom trajectories and affective disorders will independently influence their success or failures in making the transition to adulthood. Finally, transition failures, depressive symptom trajectories, and earlier mood disorders are expected to contribute independently to the onset or recurrence of psychological disorders among young adults. The following discussion provides details regarding each path in the model and the specific hypotheses to be evaluated.

Depressive Symptom Trajectories

Developmental research has documented that, during adolescence, youth experience an increase in life stress and also changes in peer expectations and roles within the family and other contexts. Over time they are expected to take increasing responsibility for their personal support and well-being. Adolescents also experience biological changes such as sexual maturation, with most of these transformations being unpredictable and outside one's personal control (Larson et al. 2002). Research documents that the demands and circumstances associated with these transitions result in heightened levels of stress and increases in negative emotions, including depressive symptoms, during early- and mid-adolescence (Ge et al. 1994; Larson et al. 2002).

Although negative emotions generally increase during adolescence, this increase levels out and may even begin to decline by the end of adolescence, with this decreasing trend continuing into the young adult years (see Ge et al. 1994; Larson et al. 2002). Some research suggests that the decline in negative emotions during late adolescence may be owing to increasing capacity for, and greater priority given to, emotional regulation (Carstensen et al. 1999; Larson et al. 2002). Thus, we expect to observe these same developmental processes in this study and predict an average increase in depressive symptoms during adolescence followed by an average decrease during the transition to adulthood. To capture this expected trend, we propose to model change in depressive symptoms with two separate slope segments of a growth curve, one characterizing adolescence and the second characterizing the transition to adulthood (Wickrama et al. 2008). We are particularly interested in inter-individual variations in these growth parameters and their antecedents and sequels.

The Influence of Family Adversity on Adolescent Depressive Symptom Trajectories

Consistent with the notion of the structural origins of mental health problems (Aneshensel et al. 1991), previous research has shown that trajectories of depressive symptoms (the initial levels and subsequent changes) tend to vary systematically with early risk factors including family socioeconomic adversity (Wickrama et al. 2008).

Thus, we posit that the influence of family socioeconomic adversity on adolescent depressive symptoms operates primarily through early stressful experiences as reflected by family stressful events, parental depression, and parenting problems. Our theoretical framework (Fig. 7.1) is consistent with social stress theory in general (Pearlin et al. 1981) and more specifically with the *family stress model* (Conger and Donnellan 2007; see also Conger et al. 1994) which proposes that stressful family events, parental distress, and parenting problems in the family of origin (FOO) influence adolescent mental health trajectories. High overall levels of family stress (e.g., having to move to a different home in order to live within the confines of a low family income) are expected to increase adaptive challenges for an adolescent already dealing with the rapid biological, cognitive, and social changes that occur during this period of life. These stressful experiences may directly contribute to diminished psychological resources, an increased sense of continuing entrapment, feelings of anger, hopelessness, frustration, and other negative emotions among youth (Ge et al. 1994). Moreover, previous studies have shown that the influence of family socioeconomic adversities are associated with depression in youth, independent of parents' psychopathology (Johnson et al. 1999).

In addition, previous research has documented that the offspring of depressed parents are at a high risk for early onset of depression (Weissman et al. 1997; Hammen and Brennan 2003). This association likely results both from genetic factors associated with psychiatric disorders (Wender et al. 1986) and from ineffective parental practices influenced by parents' psychopathology (Conger et al. 1994). Family research has shown that distressed parents demonstrate more negative affect toward their children by being more irritable, authoritarian, rejecting, and hostile toward them (Conger et al. 1994).

We expect that the depressogenic effect of negative parental affect is stronger than that of parental management practices (Wickrama et al. 2008). In particular, we propose that parental negative affect or rejection operates as a chronic stressor and as a source of "identity disruption" (Thoits 1995) for adolescents. The rejected child is especially likely to feel worthless, divorced from family ties, unhappy, and pessimistic about the future; feelings consistent with symptoms of a depressed mood. Thus, we expect parental rejection to exacerbate a high initial level of adolescent depressive symptoms. We also propose that family negative life events, parents' psychopathology, and parental rejection operate as proximal mechanisms of family adversity influencing adolescent depressive symptom trajectories. In addition, we expect family hardship, parental psychopathology, and parental practices to be associated each other.

Early Level of Depressive Symptoms and the Onset of Mood Disorders

Next we propose that a high initial level of depressive symptoms will contribute to the early onset of an affective disorder (Kessler et al. 2001; Kessler and Magee 1993; Wickrama et al. 2005). Approximately 50% of the first onsets of depressive

disorder occur during adolescence and 75% of them occur before the transition to adulthood (around 24–25 years of age; Kessler et al. 2005). According to our theoretical model, then, we hypothesize that early family adversities will increase risk for a high initial level of depressive symptoms. This process will lead to an increased probability of developing an affective disorder. We also expect that a dynamic interplay will develop between symptoms and disorders which will have long term consequences for early adult development.

Reciprocity Between Depressive Symptom Trajectories and Depressive Disorders

Psychiatric research has shown that the development of full-blown mental disorders not only corresponds to the symptom level (severe end of a continuum of symptoms) but also to what is refereed to as "the course of prodromal build-up" (growth) of symptoms (Rueter et al. 1999; Wickrama et al. 2002). That is, to understand and investigate the full course of development of a mental disorder over time, these different facets of change have to be taken into account (Eaton et al. 1995). For example, the developmental course of an already depressed individual who has experienced a sharp increase in symptom levels from 'moderate' to 'very high' is qualitatively different from the developmental course of a mentally healthy individual who has experienced the same amount of increase from 'zero' to a 'moderate' level of symptoms over the same period of time. Thus, we expect that both the initial level and growth in symptoms will independently and interactively predict the risk of developing full-blown mental disorders (Rueter et al. 1999; Wickrama et al. 2002). Similarly, both the level and decline in trajectories of symptoms should predict recovery from a mental disorder.

Previous research also documents that the recurrence of a depressive episode is very common with more than 80% of individuals with a history of depressive disorder with recurrent episodes (Pine et al. 1998; Kessler 2002). That is, early experiences with disorder contribute to later growth of symptoms that, in turn, may precipitate the recurrence of the same disorder or a related disorder. Thus, we expect cross-lagged or reciprocal influences between disorders and symptom trajectories – depressive symptom growth parameters influence the onset of an affective disorder whereas experiences with early depressive disorder contribute to later growth in depressive symptoms.

The Influence of Mental Health Problems on Young Adult Social Status Attainment

We expect that by the end of their "emerging adulthood" years (around 25 years of age; Arnett 2004) most young people will have completed or will be well along in their educational pursuits; many will be well-entrenched in a particular line of

work, and will be married or involved in a steady romantic relationship although they may take different sequences. However, studies have shown that the majority of adolescents who have experienced psychiatric disorders or have high levels of symptoms end up with below average social status (Stoep et al. 2002; Miech et al. 1999; Wickrama et al. 2008). This long-term influence may operate through lack of (1) knowledge or information or psychological and cognitive capabilities and skills necessary to attain necessary levels of educational, occupational, and relationship competence, (2) social support (Miech et al. 1999), and (3) social, occupational, and relationship expectations. Thus, as shown in Fig. 7.1, we expect both the symptom trajectories (the absolute level at a point in time, i.e., the intercept, and growth or decline over time, i.e., the slope), and disorder experiences to independently influence young adult social status attainment.

Young Adult Affective Disorders

Affective disorders during adolescence confer strong risk for recurrent affective disorders during young adulthood (Pine et al. 1998). In addition, previous studies have reported that the prevalence rate for affective disorders increases as individuals exit adolescence, thus resulting in relatively high rates of depression among young adults (Kessler and Walters 1998; Klerman and Weissman 1989). We expect both depressive symptom trajectories and prior disorder experiences during this period to contribute to the onset or recurrence of affective disorders in young adulthood.

However, late adolescent or early adult depressive symptoms and disorders may also be triggered by recent or concurrent stressful events and circumstances (Kessler and Magee 1993). Accordingly, we predict that social, economic or educational successes or failures during the transition to adulthood will also have an important influence on the mental health of young adults (Gore et al. 2007). Thus, we expect that transition failures will contribute to the occurrence of affective disorders in young adulthood over and above the influence of a prior history of mental health problems.

Methods

Sample and Procedures

The data used in these analyses come from the Family Transitions Project (FTP). This study combines participants from two earlier research projects – the Iowa Youth and Families Project (IYFP) and the Iowa Single Parent Project (ISPP). Participants in the two projects came from the same rural areas in Iowa, were

matched in terms of age, gender, and grade level, were interviewed at the same points in time, and completed all of the same measures and study procedures. Thus, they comprise a single cohort of rural youth beginning early to mid-adolescence. The theoretical model was tested with a total sample of 485 individuals from the Family Transitions Project, consisting of 391 adolescents from two-parent families (IYFP) and 94 adolescents from single-parent families (ISPP).

Although only 445 participants provided complete information for all of the study variables, data from 485 participants (some with missing values) were used for the analysis. Models were estimated using the Full Information Maximum Likelihood (FIML) methods available in the AMOS software package (Arbuckle and Wothke 1999). FIML methods base parameter estimates on all available information thereby allowing cases with missing data into the analysis. Participants with some missing data typically were unavailable for one or two waves of interviews, but remained in the sample for other waves of data collection. Attrition analysis was performed to examine possible differences in demographic characteristics between participants who dropped out of the study and those who remained in the analyzed sample. The mean level of parental education level was slightly lower for dropouts than that for those who remained in the sample.

The IYFP began in 1989 and involved 451 families in eight counties in Iowa. The site for the research was determined by our interest in rural economic stress and well-being. Because many of the outcomes and processes considered in the overall study were concerned with adolescent development, families selected had at least two adolescents. Families were eligible to participate if the target adolescent (7th grade, median age of 12.7 years) lived with two biological parents and a sibling within four years of the target's age. Family size ranged from 4 to 13, larger than the average in the general population. About 78% of the families who met the criteria for inclusion in the study agreed to participate. Couples in the sample had been married for at least 14 years.

At the first wave of data collection in 1989, 97% of the husbands and 78% of the wives were employed. About 97% of the employed husbands and 50% of the employed wives were full-time workers. The median yearly income in 1989 was $22,000 for the men and $10,000 for the women. The average occupational prestige scores for the men and women in our sample were 43 and 34, respectively, on a scale of 1–100 (Nakao and Treas 1990). The median age for the men and their wives was 39 and 37 years, respectively. The median number of years of education for both spouses was 13. Because of the rural location of the study in the upper Midwest, all families in the sample were white.

The ISPP was initiated two years later in 1991. The households were selected because they had adolescents who were in the same grades as those in the IYFP. The study site centered on the same geographical area as did the IYFP. Data came from 107 mother-only families with adolescents in the same grade (9th grade) at the time as the IYFP targets. A sibling within 3 years of the target's age also participated in the study. Mothers were permanently separated from their husbands, the separation happened in the past 2 years, and the ex-husband was the biological father of the target adolescent. As noted, the IYFP and the ISPP used the same

measures and procedures, allowing these two data sets to be merged up to 1992. Beginning in 1994, the IYFP and ISPP samples were combined to create the Family Transitions Project. The combined sample of families provided data for the present study, which included measures from as early as 1991 (age 15) to as late as 2007 (age 31).

Trained field interviewers visited the participants in their homes on two occasions each year during adolescence and every other year after adolescence. The visits typically occurred within a one or two-week period. During the first visit, a professional interviewer asked each family member to fill out a detailed questionnaire about family life and work, finances, friends, and mental and physical health status, including health behaviors. Family members independently completed the questionnaires so that they could not see one another's answers. Information gathered during the first visit of each year provided the data for the present analyses.

Measures

Family negative life events. The lists of economic problems and negative life events were adapted from Dohrenwend et al. (1978). The measure of *negative life events* was generated by summing mothers' "yes" responses at adolescent age 15 to each of 51 items that indicate family economic problems and other stressful events experienced by the family (1 = yes, 0 = no) during the previous year. The list of family economic problems included items such as "start receiving government assistance such as AFDC, FIP, TANF, SSI, food stamps, or something else," "go deeply into debt for a mortgage loan or other reasons," "sell property because of financial difficulties," "have a home loan or any other loan foreclosed," "move to worse residence or neighborhood," "change jobs for a worse one," "get demoted," have trouble at work," "get fired," "get laid off," "take wage cut," and "other financial problems." Other *negative life events* included stressful events related to one's self, children, parents, and entire family such as an accident of a family member, the death of a family member, being robbed or assaulted, or getting involved in a lawsuit. Descriptive statistics for the life events measure, and for all other study variables, are provided in Table 7.1.

Parental rejection or negative affect. As noted earlier, we consider parental rejection to be an especially important marker of ineffective parenting in terms of adolescent risk for depression. Thus, we use parental rejection as our measure of poor parenting in these analyses. Rejection by a parent was assessed as a latent construct by mother and father, reports obtained at age 15 as two indicators. Mothers and fathers responded to five items on a scale from 1 (strongly agree) to 5 (strongly disagree). The items asked whether the parent (a) "really trusts this child," (b) "feels this child has a number of faults," (c) "experiences strong feelings of love for the child," (d) "is dissatisfied with the things the child does," and (e) "feels the child causes me a lot of problems." The ratings for each item were recoded and summed to create a score of parental rejection for both mother and father, with

Table 7.1 Descriptive statistics of the study variables (lt = life time)

Study variable	Minimum	Maximum	Mean	Std. deviation
Depressive symptoms 1991	12	51	18.19	6.26
Depressive symptoms 1992	12	60	18.59	7.09
Depressive symptoms 1994	12	55	19.72	7.70
Depressive symptoms 1995	12	59	17.74	6.95
Depressive symptoms 1997	12	60	17.41	6.66
Depressive symptoms 1999	12	47	16.38	5.50
Depressive symptoms 2001	12	55	17.18	6.43
Affective disorder lt 1995 (counts)	0	2	0.14	0.38
Affective disorder lt 1999 (counts)	0	3	0.24	0.56
Affective disorder lt 2007 (counts)	0	3	0.28	0.50
Mother's depressive symptoms	1	60	19.50	7.00
Family negative life events	0	15	2.97	2.57
Mother's rejection	5	20	9.43	2.90
Father's rejection	5	19	9.45	3.05
Youth transition success	0	4	2.84	1.02

higher scores indicating greater rejection. AMOS estimates the model under the assumption that the unobserved covariances due to the missing fathers' reports for the single parent families are similar to those of the observed covariances for two parent families. This scale had internal consistencies of 0.80 and 0.85 for mothers' and fathers' reports, respectively.

Depressive symptoms during adolescence and young adulthood. Depressive symptoms were measured at ages 15, 16, 18, 19, 21, 23, and 25 using the 13-item depressive symptoms subscale of the Symptom Checklist (SCL-90-R; see Derogatis and Melisaratos 1983). One item related to the loss of sexual interest was omitted from the scale because it was considered inappropriate at mid-adolescence. Thus, 12 items were used from the scale. Respondents used a 5-point scale, ranging from not at all (1) to extremely (5), to indicate how often during the past week they were bothered by symptoms of depressed mood such as crying easily, feeling trapped or caught, blaming themselves for things, feeling lonely, feeling blue, feeling worthless, and feeling hopeless about the future. Scores on the depressive symptoms subscale could potentially range from 1 to 60. Skewness estimates for the depressive symptom measures at the seven different waves of assessment were acceptable ranging from 1.44 to 2.59. Internal consistencies (Cronbach's alpha) exceeded 0.90 for all waves of data collection.

Parent psychopathology. Only the mothers' psychopathology was used in the analysis because the sample included 93 female-headed families. Mothers' psychopathology was assessed in 1991 using the 13-item depressive symptoms subscale of the Symptom Checklist (SCL-90-R; see Derogatis and Melisaratos 1983).

Young adult status attainment (transition success/difficulties). Young adult status attainment was measured at 25 years of age by an index created by summing

the scores on six variables related to the transition to adulthood (1 = yes, 0 = no) items. These items asked the respondents if they had (a) full time employment, (b) job security, (c) no financial strain, (d) stable romantic relationships, and (e) regular church participation. These dichotomous outcome measures were generated using ordinal level responses to the items corresponding to the dimension of status attainment. This index ranged from 0 to 5. Skewness of this measure was –0.54.***

Affective psychiatric disorders. Affective psychiatric disorder was assessed by counts of four lifetime affective disorders (major depressive episode, dysthymia, manic disorder, and hypomania) at ages 19, 23, and 31. Natural log of counts of DSM-IV disorders were treated as continuous variables to be used in SEM models. Skewness estimates for the affective disorder measures at age 19, 23, and 31 were 2.98, 2.17, and 1.28, respectively. As expected, the mean number of affective disorders listed in Table 7.1 indicate that the lifetime prevalence of these disorders doubled from age 19 ($M = 0.14$) to age 31 ($M = 0.28$) and almost doubled from age 19 to 24 years of age ($M = 0.24$). These findings are consistent with the idea that the transition to adulthood represents a vulnerable period of life for the onset of affective disorders.

Analysis Plan

We used latent growth curves (LGC) in the structural equation modeling (SEM) framework to estimate individual trajectories of depressive symptoms in youth and to investigate their correlates. LGC estimation begins by constructing line segments (intra-individual trajectories) describing change over time for each individual in the study (for technical and statistical references, see Willett and Sayer 1994). To describe these individual trajectories, two latent variables, initial level and change (rate of change), are defined using SEM. Accordingly, the rate of change is the change in the variable in a unit of time; that is, the rate of change is the slope of the variable across time. A positive rate of change indicates an increase whereas a negative rate of change indicates a decrease in the measured variable over time. Measurements of the variables at different time points (y_{t1}, y_{t2}, y_{t3}...) serve as multiple indicators of the two latent variables (the initial level and slope) in this model.

The form of the individual level relationship (trajectory) may be linear, quadratic, or otherwise. The form can even have more than one slope (slope segments or slope pieces), if growth rates are expected to differ for successive periods, as in the present study. As can be seen in the figure containing the results (Fig. 7.2), two slope segments can capture two different growth rates/patterns of depressive symptoms for adolescence and transition to adulthood (1st through 3rd time points, and 4th through 7th time points, respectively (Raudenbush and Bryk 2002). Thus, the LGC model in Fig. 7.2 estimates individual depressive symptom trajectories defined by the initial level, and two different rates of change (slope 1 and slope 2) (Wickrama et al. 2008). Individual symptom trajectories involving initial level and rate/s of change are expected to be different from person to person.

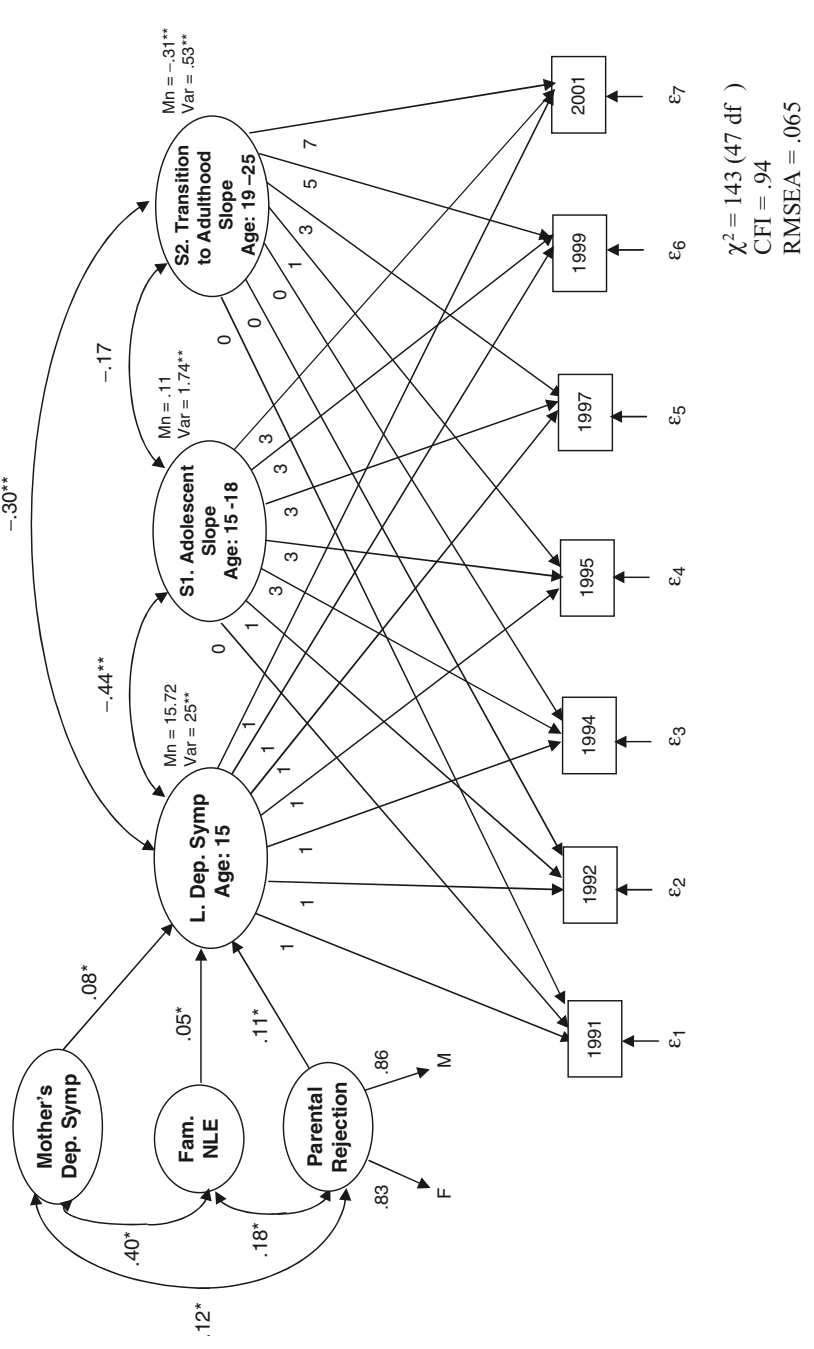

Fig. 7.2 Depressive symptom trajectories with segmental slopes for adolescence and emerging adulthood: Family of origin influence (standardized coefficients; $^{*}p < 0.05$; $^{**}p < 0.01$)

Although each individual trajectory varies in initial level and rate/s of change, these can be aggregated so that, for the whole sample there is an average (mean) initial level with a variance, and average (mean) rates of change with variances. The mean and variance of the initial level parameter identify the overall average of the individual initial levels and variability of individual initial levels (dispersion), respectively. The means for the rates of change describe the averages of overall changes of persons over time (developmental changes or trends). For example, in this study, the mean of slope1 can be positive showing an increasing trend whereas slope 2 can be negative showing a decreasing trend. The population variances for the change parameters reflect inter-individual differences in the rates of change (stability of the attribute). A significant variance in a change parameter implies different rates of change among individuals in the sample. When a growth parameter covaries significantly with a predictor variable or/and with an outcome variable, inter-individual differences in change are considered systematic (Willett and Sayer 1994). As shown in the left side of Fig. 7.2, in the following analyses we predict the initial level of depressive symptoms using FOO characteristics as predictor variables.

Growth parameters can also be predictors of other outcomes. For example, in Fig. 7.2 adolescents' initial level and subsequent slope are expected to predict psychiatric disorders and adolescent transitions into adulthood. Finally, we expect to predict young adult affective disorders using all the symptom growth parameters, prior disorder experiences and young adult social status.

We estimated several SEMs to test our hypothesized models. We used chi-square statistics to evaluate the fit of the theoretical model. The chi-square test statistic divided by degrees of freedom can provide a preliminary and approximate guideline for overall fit. When chi-square divided by the degrees of freedom is below 2.0, the model fits the data well (Carmines and McIver 1981). In addition, we used the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) to evaluate SEMs because these two indices do not relate directly to the sample size. The cutoff value of the CFI should be close to or greater than 0.95 and the cutoff value of the RMSEA should be close to or less than 0.06 to indicate that the model fits the data well (Hu and Bentler 1999).

Results

The right side of Fig. 7.2 shows the estimated growth parameters of depressive symptoms; the initial level (age 15), adolescent slope, and transition to adulthood slope using covariances and FIML (AMOS 4, Arbuckle and Wothke 1999). The left hand side of Fig. 7.2 shows the influences of FOO characteristics on depressive symptom growth parameters. The results showed that mothers' psychopathology, family negative events, and parental rejection influence the initial level of depressive symptoms (0.08, 0.05 and 0.11 respectively, $p < 0.05$), but did not influenced the slope parameters. As shown in the figure, these predictor variables were significantly correlated with each other.

The results showed that the residual mean initial level of depressive symptoms was 15.72 at age 15. The residual variation in initial level was significantly different from zero (25.00, $t = 5.50$). This finding indicates a wide range in depressive symptoms for the youth in the study during the 9th grade, with some participants suffering high levels of depressive symptoms while others had no symptoms at all. Only a portion of the variation in the initial level was explained by FOO characteristics. As expected, the average rate of change during adolescence (adolescent slope) was positive (average rate of change = 0.11, $t = 1.00$), but the slope was not significantly different from zero. However, the results also showed that the variation among adolescents in the rates of change for depressive symptoms was significantly different from zero (variance in the rate of change = 1.74, $t = 4.40$), indicating that depressive symptoms between the ages of 15 and 18 increased for some adolescents, decreased for others, and remained relatively constant for still others. From these initial findings we conclude that at least some adolescents were experiencing growth in depressive symptoms and that, even if there was not enough evidence of an average upward trend in depressed mood, neither was there evidence for a systematic decline.

The average rate of change during the transition to adulthood (slope from age 19 to 25) was negative and statistically different from zero (average rate of change = –0.31, $t = –6.21$), indicating the predicted average decrease in depressive symptoms during the transition to adulthood. This negative slope for depressive symptoms may partly reflect regression to the mean. That is, adolescents who were at or near the lower bound of depressive symptoms at age 19 either stayed the same or experienced an increase in symptoms from age 19 to 25, as compared to adolescents who had relatively high levels of symptoms at age 19. Results also showed that variation among emerging adults in rates of change for depressive symptoms was significantly different from zero (variance in the rate of change = 0.53, $t = 6.14$), indicating that, although there was an average decline in depressed mood, not all youth declined from age 19 to 25. The results in Fig. 7.2 indicate that both the adolescent slope and young adult slope for depressive symptoms were negatively associated with the initial level at age 15 ($\beta = –0.44$, $p < 0.01$, and $\beta = –0.30$, $p < 0.01$, respectively). These negative influences again likely indicate regression to the mean. These results make intuitive sense inasmuch as youth with lower initial levels have more room for growth in symptoms in subsequent years. This comprehensive growth curve model with initial level predictors showed a reasonably good fit with the data (see Fig. 7.2). The $\chi_{(47\ df)}^2 = 143$, CFI was 0.94 and the RMSEA was 0.065.

Given the significant variability in the growth parameters for the depressed mood in youth and in the absence of any influence of FOO characteristics on slope parameters, we next evaluated a model for the reciprocal influences between symptom trajectories and affective disorders from adolescence to young adulthood (Fig. 7.3). As expected, the results (Fig. 7.3) showed that the initial level of depressive symptoms at age 15 influences lifetime affective disorders at age 19, age 23, and even at age 31 ($\beta = 0.36$, 0.20, and 0.16, respectively, for all ps < 0.05). These influences show that an initial high level of depressive symptoms contributes not only to early onset of affective disorders but also to later onset or recurrences of affective disorders. In the model, lifetime affective disorders at age 23 and age 31

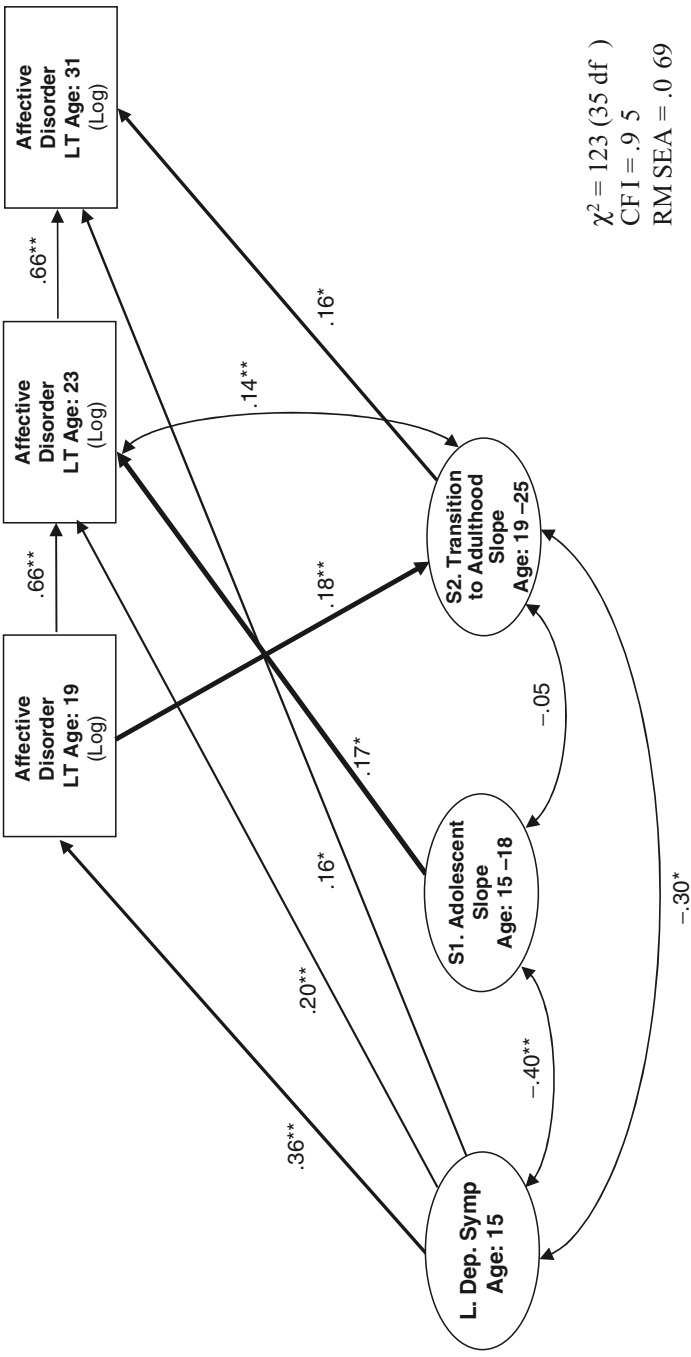

Fig. 7.3 Mutual influences between depressive symptom growth parameters (SCL-90) and cumulative (life time) influences in affective disorders (DSM) (standardized coefficients; $^*p < 0.05$; $^{**}p < 0.01$)

were predicted after controlling for earlier lifetime disorders; therefore, only increases in the number of lifetime disorders or recurrences of earlier disorders between two time points were predicted. In addition, the adolescent and transition to adulthood slopes predicted lifetime affective disorders at age 23 and at age 31, respectively (β = 0.17 and 0.16, respectively, both *p*s < 0.05). That is, both the initial level and subsequent growth in symptoms contribute to the onset and recurrences of affective disorders during the transition to adulthood and during young adulthood. Affective disorder at age 19 predicted the transition to adulthood slope (age 19–25) which is also correlated with concurrent affective disorder at age 23. As expected, lifetime affective disorder at age 19 was strongly associated with affective disorder at age 23 (β = 0.66, $p < 0.01$) which was strongly associated with lifetime affective disorders at age 31 (β = 0.66, $p < 0.01$). This reciprocal model showed a reasonably good fit with the data (see Fig. 7.3). The $\chi_{(35\ df)}^2 = 123$, CFI was 0.95 and the RMSEA was 0.069.

The model in Fig. 7.4 added young adult social attainment and also controlled for gender (not shown in the figure). Consistent with theoretical expectations, experience of an affective disorder at age 23, and increasing depressive symptoms from 19 to 25 predicted young adult social attainment (β = –0.20 and –0.21, respectively; both $p < 0.01$). Both affective disorder and growth in depressive symptoms appear to jeopardize young adult social status attainment (transition success). In addition, although the average transition to adulthood slope is negative, youth who demonstrated relatively greater rates of increase in the slope for depressive symptoms (a less negative slope) during the transition to adulthood demonstrated relatively lower levels of young adult social status attainment. Conversely, adolescents who experienced a decline in depressive symptoms (a more negative slope) during adolescence experienced relatively higher levels of young adult social status attainment. However, the previously significant path (see Fig. 7.3) from the transition to adulthood slope to young adult affective disorder at age 31 became non-significant, suggesting that the observed influence may operate through young adult transition success/difficulties. All the other paths in the model were essentially the same as in the previous model in Fig. 7.3. It seems that the initial level and adolescent slope in depressive symptoms influence young adult social status attainment through subsequent experiences with affective disorders. In addition, the gender predicted only the initial level of adolescent depressive symptoms and affective disorder at age 19 ($\beta = 0.26$, $p < 0.05$, and β = 0.07, $p < 0.05$, respectively, not shown in Fig. 7.4). This model showed a reasonably good fit with the data (see Fig. 7.4). The $\chi_{(51\ df)}^2 = 162$, CFI was 0.94 and the RMSEA was 0.066.

Discussion

The present study examined a model of the transition from adolescence to adulthood that began with adversities in adolescence and culminated with the risk for affective disorder of participants during young adulthood. Key elements in this

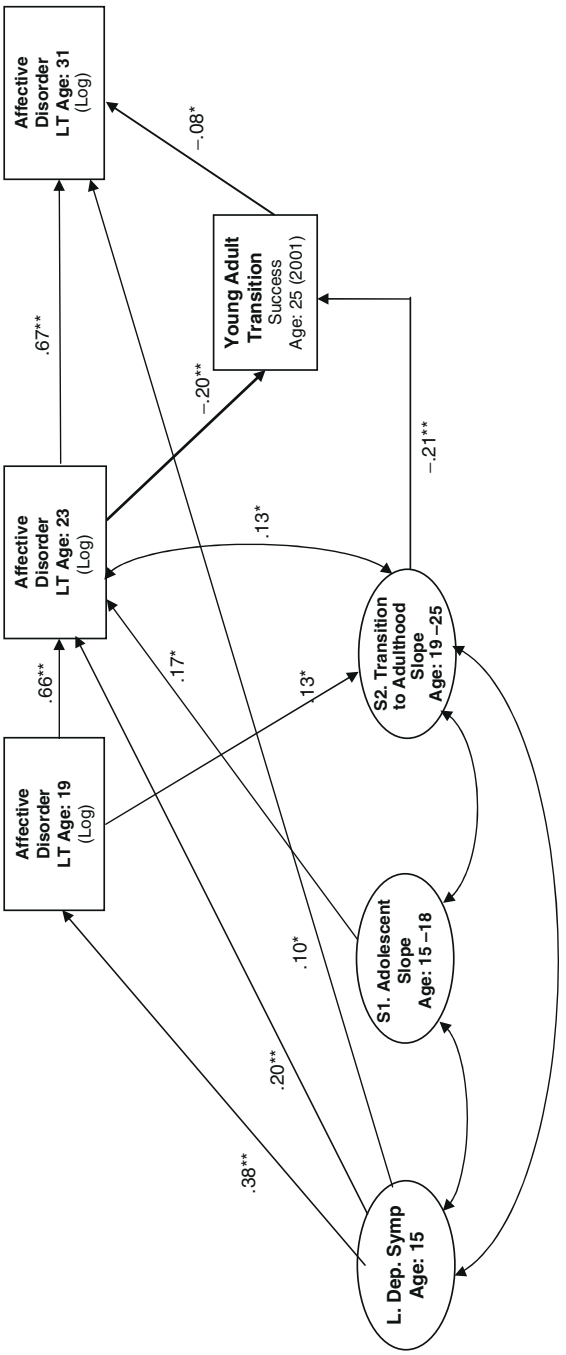

Fig. 7.4 Predicting young adult affective disorder (standardized coefficients; $^*p < 0.05$; $^{**}p < 0.01$)

model involved depressive symptom trajectories and affective disorders assessed over the early years of the life course. At a descriptive level and consistent with expectations, analyses showed that there were two different slope segments of depressive symptoms corresponding to adolescence and to the transition to adulthood. The initial level and two different slope segments of depressive symptoms showed significant inter-individual variability. Average counts of affective disorders showed that 50% of the onset of affective disorders during this period occur by age 19. That is, the average counts of affective disorder showed a 100% increase from age 19 to age 31 (Table 7.1).

Consistent with the notion of the structural origins of mental health problems (Aneshensel et al. 1991), the results showed that the initial level of depressive symptom trajectories tends to vary systematically with family socioeconomic adversities (see also Wickrama et al. 2008). Family stressful events, parental depression, and parenting problems are independently associated with the initial level of depressive symptoms. As we expected, the depressogenic effect of parental rejection appeared to be strong and operates as a chronic stressor for adolescents generating depressive symptoms. Although previous studies suggest that there is a period of time when adolescent risk of disorder is relatively high after which it begins to fall (e.g., Kessler and Magee 1993), consistent with the stress process life course perspective (Pearlin et al. 2005), we found that high levels of depressive symptoms recorded early in adolescence are influenced by early adversities and exert a persistent long-term influence on young adult mental health through continuity of early disorders and through social pathways. Thus, the stress process over the life course perspective (Pearlin et al. 2005), the alliance of stress process and life course perspectives, provides theoretical guidance for the investigation of complex psychosocial processes over the life course.

To the extent that the level of depressive symptoms corresponds to the severity of the depressed mood, the results showed that depressed adolescents are more likely to experience early onset of affective disorders. It seems that, in general, an adolescent who is on a developmental trajectory marked by a high level of early symptoms tends to stay on this course into the early adult years (Ge et al. 1994; Susman et al. 1991). As expected, the results also showed that not only early symptom levels but also increases in depressed mood contributed to the onset or recurrence of affective disorders. That is, the development of full-blown mental disorders not only corresponds to the severe end of a continuum of symptoms (the symptom level) but also to the course of prodromal build-up (growth) of symptoms (Rueter et al. 1999; Wickrama et al. 2002). This result emphasizes the need for future investigators to take into account different facets of change in symptoms if we are to better understand how full-blown disorders develop during these critical years (Wickrama et al. 2002; Eaton et al. 1995).

That is, earlier disorders, earlier symptom levels, and earlier growth in symptoms all independently contribute to the probability of developing a later disorder. Each component in the process needs to be examined to generate a comprehensive understanding of risk for the occurrence or re-occurrence of mood disorders during this period of life. The results regarding reciprocity between disorders and symptom

trajectories also showed that early experiences with disorder contribute to later growth of symptoms which, in turn, precipitate the recurrence of the same disorder or the onset of another affective disorder. Deeper understanding of the interplay between symptom trajectories and experiences with disorders might provide a useful prognostic tool for treatments and interventions.

These findings also support our hypothesis that both experiences with disorders and changes (recovery or deterioration) in depressive symptoms will have social consequences for youth. Experiences with affective disorder appear to influence the adolescent transition to adulthood regardless of later decreases or increases in symptoms. Similarly, changes in symptoms contribute to the young adult transition outcomes independent of experiences with disorders. This result indicates that youth transition outcomes are influenced not only by experiences with psychiatric disorders but also by the build-up of or decline in depressive symptoms. Future research should attempt to elucidate different proximal mechanisms such as social, behavioral, and psychological competencies through which disorders and changes in symptoms over time influence later young adult social status attainment.

As previous studies have reported, the prevalence of affective disorders increases as individuals exit adolescence thus leading to relatively high rates of affective disorders among young adults (Kessler and Walters 1998; Klerman and Weissman 1989). The results showed that both experiences with affective disorder and growth/decline in symptom trajectories during the transition to adulthood influenced the onset and/or recurrence of the disorder during young adulthood. Some of these influences operate through young adult social status attainment, especially failure to attain the desired statuses. Consistent with previous research, a history of mental health problems is not only a powerful predictor of later disorder, but it is also strongly related to experiences in recent or concurrent stressful events and circumstances (Kessler and Magee 1993). It is important to disentangle the associations among previous mental health problems, recent or concurrent stressful experiences, and subsequent mental health problems in the same model in order to fully understand the complex processes involved in these aspects of life course development.

The interweaving of family adversities, emotional distress, the attainment of desired social outcomes, and psychiatric disorders is consistent with what Conger and Donnellan (2007) have called an *Interactionist Model* of socioeconomic status and human development. According to this model, both social causation and social selection operate in a reciprocal fashion to influence both mental health or disorder and socioeconomic events and conditions. Consistent with the social *causation* tradition, our findings show that early family adversity intensifies early levels of depressive symptoms, thus initiating a possibly self-perpetuating process of socioeconomic and health disadvantage. The cycle continues as poor mental health *selects* young adults into adverse life circumstances that appear to exacerbate psychiatric problems (Conger and Donnellan 2007; Wickrama et al. 2005). In this regard, poor young people are particularly vulnerable. Youth from disadvantaged families may be trapped in a self-perpetuating cycle of adverse life circumstances and poor health across the life course and across generations, involving both social causation and social selection processes.

Our results also revealed a gender difference only in the initial level of depressive symptoms and early disorders, indicating that girls had significantly higher levels of depressive symptoms and affective disorders than did boys. This may be attributed to the fact that the major growth in depression had already occurred for the girls in this study and their greater risk is captured by the intercept and early disorders in our model.

Study Limitations

Although the findings from the present study are generally consistent with the hypothesized model, several factors may limit the generalizability of the results. First, these analyses need to be replicated in samples that are more representative in terms of family demographic characteristics, including family size, family structure, and residence in urban and rural areas. For example, a particularly important characteristic of this sample is the omission of single-child families and families in which child ages are more widely spaced. Adolescents from single-child families may receive more care, warmth, and less rejection, resulting in relatively low levels of depressive symptoms. Adolescents from families with widely spaced children lack relationships with similar aged siblings, which may negatively influence school success and educational attainment. In addition, attempts to replicate these findings must involve a broader cross-section of the population that includes racial/ethnic minorities. Hypothesized associations should reflect such ethnic differences. Third, future replication should involve a better measure of young adult social status attainment which can capture status attainment encompassing more socioeconomic domains. Moreover, the analysis should be performed using attainment measures of each domain separately. Finally, future research should also seek to extend these findings by examining resilient factors that may moderate the observed associations among the study constructs. In particular, consistent with the life course perspective, some youth may be capable of avoiding the damaging influence of an early transition to adulthood.

Despite the above limitations in this research, the findings from this study have several theoretical and practical implications. This study demonstrated that early adolescent stressful experiences in the FOO will be linked to onset and recurrences of psychological disorders (DSM-IV) in young adulthood through continuous experiences with disorders and symptoms and with difficulties in young adult social and economic development. These findings emphasize the need for federal, state, and local level policies and programs designed to reduce childhood adversity and young adult socioeconomic failures. In addition, the results of the present study suggest that improved understanding of the reciprocities between psychiatric symptoms and psychiatric disorders and mental health problems and socioeconomic failures may lead to more effective health interventions and medical treatments that consider these mutual influences.

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Chapter 8
Work, Family, and Their Intersection

Elizabeth G. Menaghan

In 1972, Leonard Pearlin fielded a study of adults living in the Chicago Urbanized Area. The interview booklet was titled, "Problems of Everyday Life," and with this disarmingly simple title Pearlin helped to expand social understandings of the linkages between social experiences and emotional distress. In the design of that survey and of its follow-up in 1976, and in the many empirical analyses as well as conceptual developments that flowed from it and subsequent projects, Pearlin inspired a wide range of scholars across many fields to give more sustained and careful attention to the persistent rewards and strains that are embedded in ordinary lives, and in particular those embedded in ordinary and normatively expected adult social roles, including marriage, parenting, and employment. This body of work also drew new attention to the social-psychological resources that people may draw upon in managing those rewards and strains, such as their own sense of mastery and self-esteem, as well as their social supports and coping efforts.

In this essay, I first discuss key aspects of Pearlin's stress process model, and then describe how some of my own research on work and family inter-connections draws on this framework. I then try to situate this work within a life course framework, which suggests that these connections may vary for different cohorts and at various points in the life course. Finally, I outline a future agenda that can further knowledge in this area.

Understanding the Stress Process: Pearlin's Contributions

In addition to identifying elements of the stress process, Pearlin has also sought to illuminate the multiple ways in which these elements might combine. In some cases, as he has shown, stressful circumstances in one role, such as employment, can lead to new difficulties in otherwise separate spheres of experience, such as

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marriage. Similarly, the demands of caregiving can in turn create new difficulties in fulfilling occupational expectations. Such processes of stress proliferation across roles can help to explain variations in stress outcomes among individuals having otherwise similar initial levels of primary stressors (Pearlin et al. 1997).

In examining the linkages between various stressful circumstances and emotional distress, Pearlin helped to establish that the emphasis on discrete life events – so common in early stress research – was incomplete, and perhaps misleading, in neglecting how life events may be linked to more enduring and persistent strains embedded in normative adult social roles. In several influential studies, Pearlin and his collaborators documented that events and transitions typically come to have an impact on people's emotional well-being largely to the extent that they bring about negative change in more enduring circumstances. For example, involuntary job disruptions lead to increased economic problems, as well as greater marital strain among the married. And even when employment is regained, those who have experienced involuntary disruptions report greater current occupational strains (Pearlin and Lieberman 1979). Explicitly adjusting for these role strains explains much of the greater emotional distress of those who have experienced job disruptions.

Even when we do not find causal linkages from stressors in one role or life arena to another, Pearlin (1983) has noted, stressors in different roles may combine in their effects. Arguments regarding stress accumulation suggest that the effects of difficult life circumstances may not merely be additive but in fact interactive; for example, difficult conditions at work have a greater impact for those simultaneously facing difficulties at home, such as a conflictual marriage, spousal absence, or responsibility for a big family. Alternatively, we may observe compensatory interaction effects, where more positive conditions in one role may offset or buffer the effects of difficulties in other areas. Examination of these interactive hypotheses continues to be an important task for social stress research in general and for work and family researchers in particular.

In studies of role losses such as leaving the work force to become a full-time home-maker, Pearlin and Lieberman (1979) have also shown that on average, loss of one's occupational role is associated with substantially greater depressive symptoms compared to remaining employed. However, this link holds only under some circumstances; much depends on the quality of experience that one's new situation affords. When one's everyday experiences outside the labor force bring greater freedom and are not marked by economic hardships, loneliness, or a sense of invisibility, distress among job losers is no greater than for those who have remained employed. They observe the same pattern when they consider those whose marriages have come to an end, whether through the death of a spouse or through marital separation. For some, post-marriage everyday life includes opportunities for social interaction and enjoyment, while others feel isolated and out of place; only the latter group reports greater distress than those remaining married.

In these analyses of role losses, Pearlin and Lieberman call attention to the fact that the same objective event can have quite different meanings for differing individuals, and that calculating only the average impact of an event combines the impacts of quite different sets of circumstances, over-stating an event's impact for some and under-estimating it for others. This disparity also invites further exploration

into the circumstances under which subsequent role conditions are more or less difficult, and to the subjective meaning of these transitions. To return to the example of women who had given up employment to focus on household and family responsibilities, one is reminded that for some this change may have been consistent with their own preferences regarding economic provision and gendered division of labor, while for others withdrawal from the labor force was seen as an unwelcome necessity. Similarly, if the contrast with those employed is narrowed to other employed women with children, this group too likely differs depending on whether maintaining employment while raising children is a prized identity rooted in feminist convictions or a reluctant decision enforced by economic uncertainties.

In subsequent analyses, stress research has extended this core insight that the stressful impacts of role losses (and role gains) vary depending on the quality of role experiences that *follow* them to a logically parallel argument: that their impacts also vary depending on the quality of role experiences that *precede* them. For role exits including retirement, widowhood, and a child's departure from home, for example, Wheaton (1990) has shown that the more difficult prior conditions in that role were, the weaker were any negative impacts of losing that role. Again, these more fine-grained analyses help to advance the argument that a more complete understanding of the variations in impacts of various events requires close attention to the quality of role experiences both before and after the event.

Pearlin has also demonstrated that it is important to consider the multiple ways in which psycho-social resources like mastery and self-esteem, as well as the quality of one's social supports and the types of coping efforts used, are implicated in the stress process. In a now classic article on the stress process (Pearlin et al. 1981), Pearlin both articulates the conceptual linkages among these factors and empirically examines them, using the illustrative example of the event of involuntary job disruption. Although one's social-psychological resources, like mastery and self-esteem, are typically treated as relatively stable individual self-concepts that may buffer the impact of stressors on well-being, this analysis helps to show that this presumed stability may not always hold. Rather, such resources can themselves be eroded by persistent stressors, and this erosion can constitute an important but often unexamined pathway through which events and role conditions come to shape emotional distress.

By specifying this more comprehensive set of linkages between events and distress, these analyses also help to identify the many different steps at which factors such as social support and coping can make a difference in ultimate outcomes. For example, Pearlin et al. test whether social support and coping efforts can weaken the impact of job disruption on three separate outcomes: subsequent role strains, eroded self-concepts, and heightened distress. They also examine whether support and coping can weaken the impact of role strains on self-concepts and distress, or weaken the impact of diminished self-concepts on distress. In the particular life event of involuntary job disruption examined here, Pearlin et al. find evidence that coping efforts reduce the impact of job disruption on both role strain and self-esteem, as well as on distress. They also find that those with more intimate and trusting social supports are better able to reduce the adverse impacts of job disruption on both

self-esteem and sense of mastery, thus indirectly protecting against more severe distress. This attention both to linkages through which social stressors can affect outcomes, as well as to the many steps at which these linkages can be interrupted or dampened, provides a much richer and more nuanced view of the complex and conditional connections between social circumstances and emotional well-being.

In part because of the small numbers who had experienced job disruptions, however, these analyses did not investigate how these impacts might also vary depending on one's total social role repertoire and social characteristics such as gender. For example, given the stronger normative expectations for men, particularly married men, than for women, particularly married women, to maintain employment and be adequate breadwinners for their families, employment disruptions and setbacks are likely to be particularly distressing for married men (see also Elder 1974). Other stress researchers have elaborated how work and family roles have gendered meanings that condition their individual and joint impacts (Menaghan 1989; Simon 1995).

In an important extension of Pearlin et al.'s study of involuntary job disruption, Avison (2001) moves beyond the individual impacts of one's own job loss on one's own mental health problems to consider the potential impacts of both one's own as well as one's spouse's job loss, and to examine how these linkages may vary for men versus women. Studying couples with children, Avison finds that wives' job loss affects them but has little impact on their husbands; in contrast, husbands' job loss affects both partners. Because husbands' earnings are typically larger, his job loss is more closely linked to financial problems. It is also linked to greater marital conflict, as the loss of his economic contributions may provoke new challenges to husbands' power in the relationship. In contrast, effects of wives' job loss on their own mental health are mediated by reduced mastery and self-esteem, but are not explained by financial problems or marital conflict. These strong gender differences in the scope and mechanisms of impact of the same event provide further evidence that attention to gendered meanings within families is critical for future research on social stress.

In subsequent major data collection and analysis efforts, Pearlin and his colleagues have focused on other major stressors, particularly sustained caregiving for loved ones suffering from terminal diseases (including both dementia and autoimmune diseases). These studies examine the ways in which the increasing demands on time and energy that such care work entails can diminish the quality of caregivers' participation in other social roles, and in this way impair the caregiver's own health and well-being (Aneshensel et al. 1995; Pearlin et al. 1997).

Again, careful attention to the ways that conditions in a single sphere can affect other social roles, and the conditions under which those impacts may be exacerbated or minimized, are hallmarks of these studies. These studies of both young and old caregivers also prompt attention to differences over the life course in the meanings and impacts of specific caregiving tasks and specific life events. Combined with subsequent research efforts focused on retrospective and prospective interviews with adults aged sixty-five and older, this work has led to greater integration of life course arguments and principles into the study of the social stress process (Pearlin 1999; Pearlin et al. 2005; see also George 2007).

In sum, Pearlin's theoretical contributions include attention to how stressors in one role may create new or greater stressors in other roles, and how stressors across roles may combine in their effects. These analyses emphasize how the impact of events such as role losses vary depending on the quality of one's life both before and after the event. Finally, they embed social and psychological resources in the overall stress process, showing that these resources can themselves be altered – for good or ill – over time.

Work and Family Impacts Across Generations

Over the years, my own studies of social stressors and well-being have drawn on the social stress paradigm to focus in particular on occupational and family roles, as well as the complex linkages between them. Certainly, Pearlin's example has been highly influential in leading me to look beyond employment status to examine the more or less stressful content of specific occupations, and beyond marital status per se to consider the level of conflict or harmony in marital relationships. In addition to examining the impacts of work and family roles on adult emotional well-being (see, for example, Menaghan 1989), I have also sought to better understand how parents' experiences in the workplace influence their interaction with their children and in turn those children's development over time (Parcel and Menaghan 1994). These studies extend the examination of the effects of role conditions beyond adult well-being to consider the intergenerational impacts of social stressors. In doing so, I have tried to further test the ways in which work and family roles combine and the conditions under which their impacts may vary. Taking into account the still strongly gendered norms about appropriate male and female work and family responsibilities, I have also sought to consider the extent to which occupational patterns may have different impacts for mothers than for fathers.

As one example of the ways in which aspects of the stress process are readily apparent in these studies, Parcel and I have examined how the impact of mothers' employment patterns on children's home environments varies depending both on the quality of that employment and on other family conditions. Studying employed mothers with children ages three through six years of age, we found that mothers whose work was more complex and less routine were providing better home environments than those whose work was lower in quality (Menaghan and Parcel 1991). Those with fewer children also provided better home environments. These mothers' own psychosocial resources also mattered: Those with greater psycho-social resources, including higher self-esteem and mastery assessed in adolescence, also provided more supportive and stimulating environments for their children. These resources also had indirect effects: higher self-esteem in late adolescence was associated with subsequently obtaining more education, and better occupational conditions, than would be otherwise predicted (Menaghan 1997). Thus, those with greater resources were also able to reduce their exposure to the kinds of poor-quality work environments that were damaging.

We also examined how short-term changes in work and family circumstances affected children's home life (Menaghan and Parcel 1995). Following both initially employed and not employed mothers over the next several years, we observed that on average children whose mothers ended a marriage or remained unmarried, as well as those who remained not employed, experienced worsening home environments. The birth of additional children was also associated with some deterioration in home environments. Tests for interaction revealed several important contingencies in these effects. First, moving into employment had different impacts depending on the quality of that employment, as tapped by its complexity. It was only when mothers took jobs characterized by low occupational complexity that children's home environments were adversely affected. Second, remaining out of the labor force had much more damaging effects for unmarried mothers than for married mothers; in fact, mothers who were both persistently unmarried and persistently without employment experienced a decline in home environments that was more than three times that experienced on average by other unmarried mothers. Finally, among employed mothers, the effect of remaining unmarried varied depending on the wages these mothers could earn: remaining unmarried had no significant adverse impact for those with high wages.

Particularly for unmarried mothers, then, employment is critical but the quality of that employment also matters. As we summarized at the time, these findings suggested that unmarried mothers with young children and relatively poor job prospects faced a painful dilemma: If they remained out of the labor force, persistently low economic resources were apt to take their toll, but if they could only find employment at low-wage jobs, they might not be substantially better able to meet their children's needs for both economic resources and time and attention, at least during their children's early childhood and early school years.

Just as the impact of mothers' employment is larger when they are sole parents (and thus sole wage-earners as well), other analyses suggest that for children living with married parents, effects of fathers' occupational experiences are larger when they are sole earners. In a related study limited to five- to –eight-year-old children with married mothers, I examined how both husbands' and wives' occupational conditions interact in shaping children's home environments and their emerging emotional distress (Menaghan 1994). These analyses uncovered several interactive effects consistent with the social stress paradigm. For example, the benefits of fathers' substantively complex occupations for children's family environments were larger when fathers were the only family wage earners, suggesting that the complexities of two-earner families can dampen some of the benefits of one parent's occupational experiences. On the other hand, the adverse impacts of fathers' low work hours were smaller when fathers were not the sole family earners, suggesting that two-earner families can also ease the adverse impact of one parent's under-employment. Perhaps most interestingly, the impact of both parents' quality of employment, as tapped by its substantive complexity, on children's emotional well-being depended on the quality of home environments they were able to provide.

Subsequent analyses suggest that these effects vary somewhat for younger and older children. For children ages ten through fourteen, both parents' more complex

occupations were associated with better home environments, and these effects did not vary in one- or two-earner families (Menaghan et al. 1997). This array of contingent effects again suggests the importance of careful evaluation of conditions under which average impacts of work and family conditions may vary.

Work and Family in Historical Context

I have noted above that one of the emerging contributions of Pearlin and his colleagues' work has been an intentional integration of life course principles into theory and research on the stress process. As Linda George (2007) has noted, one key principle is attention to the intersection of biography and history. As she argues, historical context includes not only highly visible events such as economic collapse and mobilization for war, but also societal trends in such things as the timing and stability of marriage and childbearing, the likelihood of divorce, and the proportions of births that occur outside marriage. Political and social movements of the last several decades in the United States and other industrialized countries have also led to changes in men's and women's employment and in norms about egalitarian social relationships, with dramatic increases in married mothers' participation in the labor force.

As one example of these changes, the extent to which mothering of infants can be combined with employment has changed dramatically in recent decades in the U.S. (Johnson 2008). Among first time mothers who had been employed during their pregnancy, in the early 1960s only 26% returned to paid employment of any kind by the time their babies turned a year old. By the early 1970s, this proportion had edged up to 39%, and by the early 1980s, that proportion had taken another substantial increase, to 70%. The next decades were a time of some further increase and then stability at a fairly high level, with proportions employed at 78% in the early 1990s and 79% in 2001–2003. Clearly, although employed mothers of infants continue to face challenges, they are no longer unusual. These behavioral changes in mothers' paid employment both reflect and contribute to changing attitudes about appropriate roles for mothers versus fathers within families.

National welfare policy also provides an additional indicator of changing attitudes about gendered work and family responsibilities in the United States. Over the last several decades, policy has shifted from providing unmarried mothers with cash supports so that they could remain out of the labor force and provide direct care for their children, to encouraging those mothers to get jobs, or at least job training, and to providing some supports for substitute child care. These changes did not culminate in federal "welfare reform" until 1996, but the preceding decades witnessed a series of evaluations and experiments both testing this new approach and reflecting these changing views (Corcoran et al. 2000). While there is considerable variation across states in how they have implemented welfare reform, it is clear that the major thrust is to support and reward paid employment.

At the same time that social norms have shifted to encourage paid employment of mothers, and as more two-parent families have become two-earner households,

the nature of employment itself has been shifting. As Arne Kalleberg (2008) has recently discussed (see also Kalleberg 2000), nonstandard employment arrangements – including part-time work schedules, temporary and contingent work, and independent contracting – have become more common since the mid-1970s. Because health insurance is so often tied to regular full-time employment, the spread of short-term and part-time employment simultaneously reduces access to insurance. Such employment approaches may provide greater flexibility for employers, who face increasing competition, but they typically bring greater uncertainty and insecurity for individual workers and families, with involuntary job loss or reductions in work hours increasingly common. Indeed, as George (2007) also notes, the transformations of the labor force and the economy over the last several decades have been accompanied by greater risks of underemployment and lesser job security for most workers. In recent years, Kalleberg argues that precarious work has spilled beyond low-wage sectors, and begun to affect increasing numbers of professional and managerial occupations as well. These changes make reliance on a single earner an increasingly risky strategy for families and households.

Given these trends, individual workers may now face repeated episodes of job loss and job search over their life course. As Avison (2001) notes, in this new environment, it is unclear whether workers who experience multiple work interruptions gain some optimism about their ability to handle such changes over time, so that episodes of job loss come to have weaker impacts, or conversely whether there is a cumulative impact of such repeated episodes. This is an important unanswered question.

As employment has become more uncertain and insecure over the last several decades, the stability and security of family arrangements has also declined. Divorce rates rose dramatically through the 1960s and 1970s, and have remained at fairly high levels since then. Increased proportions of men and women form informal unions prior to marriage or after marriages end, and these unions have still higher rates of disruption (Raley and Bumpass 2003). Thus, more children born within marital unions eventually experience the departure of a parent. And fewer children are born to married parents in the first place: Birth rates to unmarried women have increased over time, and by 2007, national data suggested that nearly 40% of babies were born outside of marriage (Hamilton et al. 2009).

Taken together, these trends suggest that both employment and family ties are now more characterized by discontinuities and uncertainties than in earlier generations. These increased uncertainties and felt insecurities are likely to affect the work and family pathways that individuals and families follow, as well as the short- and longer-term effects of those pathways.

Work and Family Variations by Education

It is important to recognize that these overall trends vary considerably by education. For example, the fall of gender barriers in the workplace for early and later baby boom cohorts has been uneven, resulting in widening gaps between college-educated

women and those less educationally advantaged (McLanahan 1994). Recent studies suggest that much of the decline in sex segregation and discrimination against women has been concentrated on the better-educated (Cotter et al. 2004). Thus, college-educated women in this cohort have obtained unprecedented access to occupations and professions that were once closed to them. Sustained employment in such occupations may now yield far greater returns for such women, and not surprisingly, mothers with more education, and thus more attractive employment prospects, tend to have higher attachment to the labor force (Cotter et al. 2004). Conversely, employment stops and starts among college-educated women are likely to carry greater costs than they did for past generations.

For those without college degrees, not much has changed: Employment is still concentrated in traditionally female-typed jobs and occupations, where initial wages are relatively low and where wage growth is not closely tied to total labor force experience (Cotter et al. 2004). It is likely that neither the gains from continuous employment nor the penalties for intermittent and part-time work are as large for women without college degrees.

Men's employment has also diverged with education. Decline in unionized jobs and manufacturing jobs has disproportionately affected less-educated men. Conversely, returns to college education and professional training are now larger than in the past, even as they demand increasingly long work weeks (Jacobs and Gerson 2004). This set of ideological and economic changes has brought men and women's occupational prospects, within an educational strata, closer together than in the past.

Like employment prospects, union formation and stability have also increasingly diverged by education (McLanahan 1994). Although marriage timing now comes later on average in the life course, better-educated women have become more likely to marry than their less-educated peers. Importantly, their risk of divorce has been declining in recent decades, in contrast to the continued high risk of separation of those with less education (Martin 2006). And people are even more likely than in past cohorts to marry someone similar to themselves in educational attainment (Kalmijn 1991; Schwartz and Mare 2005). Taken together, these trends mean that the better-educated are now more likely to raise children within stable marital unions, and to be able to pool resources from two high-salary occupations. In contrast, the less well-educated continue to be both more buffeted by insecure employment and more likely to be in informal unions of uncertain duration. Research on social stressors in work and family needs to be sensitive both to prevailing economic and family contexts within cohorts and to variations by education.

Women, Work, and Family in a Single Cohort

An important but difficult question, as George (2007) has noted, is how the effects of particular social stressors may vary depending on larger historical and social circumstances. These changing trends in employment continuity and security suggest that the impacts of specific work and family patterns observed in past generations may not hold for more recent ones.

Given these concerns, it is worth noting that much of the work that my colleagues and I have done on work and family circumstances relies on data on women of a specific historical time and place. These are the women of the National Longitudinal Surveys of Youth 1979, a nationally representative cohort born between 1957 and 1964, and followed over time since 1979. As the later half of the baby boom cohort, these women were born into relatively large and traditional families, but came of age in a time of dramatic questioning about male and female responsibilities in marriage, in employment, and in child-rearing. Taken as a whole, this cohort of American women encountered significantly increased opportunities and decreased barriers, first in access to higher education and then to employment. They also benefited from new contraceptive technologies as well as access to legal abortion, permitting greater control over their own fertility.

In completed research, Cooksey and I have examined these American women's marital and fertility histories, and traced their implications for the women's own emotional well-being by the time they reached age forty (Menaghan and Cooksey 2008). These analyses document the heterogeneity of their marital experiences by mid-life. Although all but 12% married at some point, at age forty only a little over half of the whole group (55%) were married and living with their first spouses. An additional 15% had experienced at least one marital disruption but were now re-married. Thus, 30% overall were on their own, with more than half of these women having exited at least one marriage.

At age forty, net of a wide range of family background factors and early social-psychological resources, we found that all of the unmarried mothers, on average, were more depressed than the still-married. Interestingly, the never-married did not differ from those who had married and then exited marriage, with both characterized with high depressive symptoms. Some recent re-marriers also had become more depressed.

These analyses focused on family patterns and did not incorporate early or current patterns of employment. Stress process arguments, however, suggest that these average differences are likely to mask variations depending on the pattern of experiences in other social roles, particularly in paid employment. Here I would like to suggest some hypotheses about the conditions under which marriage, mothering, and employment may combine over time to shape eventual well-being in this transitional cohort, and ways in which maternal employment may have emerged as an unexpected resource over time. Whether these same linkages will hold for more recent cohorts, for whom both educational and occupational options, as well as high rates of union fragility, are now more anticipated than they were for the late baby boomers, is an important question.

Discussions of work and family roles tend to highlight the potential for conflict between these two arenas, and for role overload, and it is certainly true that both work and family compete for time. In this sense, child-rearing bears some resemblance to the caregiving that Pearlin and his colleagues have studied. Yet the temporal arcs of these two types of caregiving are quite different: For those providing care to adults with serious and ultimately terminal illnesses, the demands of caregiving have an uncertain duration that typically worsens over time with the potential to create conflict with their other roles. In contrast, the most intensive and

exhausting caregiving is in the earliest years of child-rearing, and parents can look ahead to a lessening of work-family conflicts as children grow older.

Particularly for married mothers in this cohort, perhaps the most common strategy for dealing with work-family conflict was to reduce paid work hours, or to give up paid employment entirely at least for a time. Even among married mothers who remained employed, many viewed themselves as secondary earners rather than co-providers. Depending on subsequent economic events and marital changes, these choices may have longer-term disadvantages even as they ease short-term role overload and role conflict. An important question for future research on this cohort is to identify conditions under which women's persistence in paid employment functions as an investment that yields long-term benefits, and conditions under which it does not.

It is also important to take a life course perspective on these questions. More extensive and continuous employment, difficult as it may be to sustain when children are young, may yield important resources, both social and economic, that buffer depressive symptoms in mid-life. This is because more extensive and more continuous attachment to the labor force is more likely to culminate in higher quality employment, greater employment security, and higher earnings.

As noted earlier, the extent of employment, as well as its quality, is likely to be greater for college graduates than for less well-educated women. Perhaps ironically, a second factor likely to limit mothers' mid-life employment quality is their own marital history. Specifically, at any given level of education, the proportion of time spent married is likely to be linked to more intermittent, part-time or part-year employment (Sayer et al. 2004).

On the one hand, having a husband (at least one whose own employment and earnings are fairly continuous and secure – an important caveat) permits mothers to view their own employment as less essential to family economic survival, and to invest less time in paid employment. But when marriages end, as so many have for this cohort, less extensive employment is likely to have substantial economic impacts, which are reflected as well in their diminished emotional well-being.

For continuously married mothers, suspending or curtailing their own employment may also have some risks. Prior research has suggested that employed mothers on average have greater marital power, so that they may be more successful in negotiating more equitable arrangements in their households (Bittman et al. 2003). Some research suggests that this effect is greater for women with higher quality employment. Klute et al. (2002) have suggested that more occupationally complex occupations encourage both men and women to take more innovative and non-traditional approaches to marital arrangements. They found that for both married mothers and married fathers, those whose jobs permitted greater occupational self-direction held more egalitarian attitudes about marital roles, and established a more equal division of household labor. These more equitable arrangements should benefit wives in particular, increasing their sense of personal control and reducing both their distress and their level of marital problems.

The implications of married mothers' employment continuity for marital relationships and ultimately for their own emotional well-being are also likely to vary depending on their own and their spouses' gender ideology. Husbands with more traditional gender ideology may be particularly threatened by the potential loss of

the prestige, authority, and identity that comes with being the primary breadwinner. Thompson and Walker (1989) suggest that many wives are also uneasy when their occupational success approaches or exceeds that of their husbands, and both husbands and wives may deny or downplay the importance of female earnings to family economic well-being as a means of maintaining marital harmony. These gendered expectations would also suggest that positive features of wives' work content, such as wives working in occupations that provide good opportunities for substantive complexity, may also threaten marital arrangements: Wives' higher absorption and engagement in such work can undermine gendered expectations that her work will be secondary in importance. This is certainly one area where more recent cohorts may diverge from earlier ones, as support for gender specialization seems to be lessening and couples seem less threatened by greater sharing of both provider and caregiver responsibilities.

Mothers who have sustained employment are also less apt to lose career momentum and so have a greater opportunity for individual occupational gains, although as noted earlier in this chapter this is probably more true for better-educated mothers. In an economy in which layoffs and down-sizing have become widespread, married mothers' employment can also help to cushion or offset the impact of downturns or setbacks in husbands' employment trajectories.

Given the high rates of marital disruption for this cohort, it seems important to consider in particular how women who happily reduce hours of employment or withdraw from paid work entirely as part of a joint marital strategy for reduced overload and a more traditional division of labor may become unexpectedly vulnerable later in life if that marriage does not last. As Waite and Gallagher (2000) and others have noted, post-divorce arrangements preserve men's economic prospects far more than they do women's. When marriages are not satisfying, women with fewer independent economic resources may also remain in unhappy or conflict-filled marriages because their other options have become more limited. For those who do exit marriage, diminished earning potential may also increase their likelihood of moving into remarriages (or cohabitation arrangements) of uncertain quality as a strategy to enhance economic resources. In short, these arguments call attention to some of the ways in which choices taken earlier in the life course under one set of circumstances and expectations may cumulate over time in ways that may be both unforeseen and undesired. Ironically, early "solutions" to the stress of early work-family conflict may contain the seeds of subsequent problems as circumstances change. Further examination of these patterns in specific cohorts – and for fathers as well as mothers – may help to illuminate these processes.

Work and Family Repertoires Over the Life Course: Future Agenda

We have noted that Pearlin's exploration of social stress processes has brought greater understanding of how stressors can spill over from one role to another, and how stress in multiple roles can interact to buffer or to exacerbate distress. These

processes can generate considerable complexity even over fairly brief segments of the life course. A limitation of much work on individual and intergenerational effects of work and family circumstances thus far has been its focus on conditions at a single point in time, or on stability and change over a period of relatively few years (for some interesting exceptions to this tendency, and examples of the challenges of more extended time lines, see Turner and Schieman (2008)). An interesting expansion of research drawing on the stress process paradigm would consider the duration of effects over longer periods of time, and search for possible reversals of earlier effects. Thus, we may become more adept at identifying conditions under which specific work and family patterns may have short-term adverse impacts that nevertheless yield beneficial outcomes at a later date, and conversely, conditions under which work – family circumstances that appear to provide some protections or advantages for either adults or children early in the life course eventually take some toll. Again, we need to be alert to the possibility that patterns found in a single cohort may weaken or reverse in other cohorts, and seek to account for those changes.

A second important task for future work and family research inspired by stress process arguments, as Pearlin and his colleagues' recent work has helped to outline (Pearlin et al. 2005), is to consider and test linkages between emotional distress and the development of physical illness. Again, it is likely to be necessary to follow people over relatively long periods to trace, for example, how the arousal of threat, anxiety, or depression may impact hormonal and cardio-vascular systems and erode physical well-being, and to identify moderating resources or conditions that can intervene to disrupt such linkages.

Third, an important strength of the stress process paradigm is its consideration of how one person's social conditions can impact the constraints and stressors that touch another's. Consistent with the life course principle of linked lives, future research should further consider how parents' work and family stressors have implications for their children, as well as how each spouse's employment challenges and opportunities may enhance or constrain the other's. Further along the life course, it will also be important to trace how adult children's own successes and setbacks in work and family may proliferate stressors for their aging parents; an interesting example of this latter type of investigation is Bierman and Milkie's (2008) investigation of such linkages.

In addition to studies that begin with adults, more work is needed that examines the stress process much earlier in the life course, and takes children and adolescents as its primary focus. Both because children's early stressors and responses may themselves function as enduring vulnerabilities during adulthood and because it now appears that many first episodes of serious psychological problems have their onset in late childhood and adolescence (George 2007), a better understanding of the early life course is critical for progress in understanding.

Finally, future work must balance the need to continue data collection from earlier birth cohorts with the need to begin new longitudinal studies in ways that will both permit cohort comparisons and include greater coverage of the intervening and moderating constructs that have often been neglected in past research. The enormous promise of so many of the large longitudinal and multi-generational studies currently available to us is often constrained by a heavy design emphasis on economic variables

and on specific behaviors, with only limited measurement of such social-psychological concerns as gendered norms and preferences or interpretive and subjective assessments of conditions. Future designs for longitudinal data collections must be better matched to the research questions to be explored. In this regard, it will be important to mix studies of large representative populations with studies of strategically selected subgroups, whether those providing care for loved ones with specific illnesses, or those engaged in a single occupation or living in a specific family configuration with an interesting and theoretically compelling profile.

As we look to the future, it seems appropriate to recall Leonard Pearlin's (1981, p. 352) closing words in "The stress process" nearly thirty years ago: "Perhaps the most important lesson that could be conveyed by this analysis is that social stress is not a happening; instead, it is a complex, varied, and intellectually challenging process. Research into social stress needs to be raised to a level that matches the richness and intricacy of what it strives to explain."

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Chapter 9
Sense of Mattering in Late Life

Elena M. Fazio

Introduction

Tony matters to his family. He knows that he matters to his family and derives great happiness from being a parent and husband. He shows his love for his significant others by way of fixing their cars, making money to support their needs, and providing emotional support. At least, he did all of this when he was younger. A decade ago, he was diagnosed with Parkinson's disease and over time his ability to be the father and husband, as he wants to be, has changed. His easy smile and ready laugh are forever hallmarks of his spirit, and accurately suggest the enthusiasm he has for life and family. However, a large portion of the way he used to show care for to his wife and adult children cannot be accomplished at this time. His family wonders, whether changes in the social roles he occupies as well as the physical changes he has undergone have impacted his sense of mattering to others and his overall well-being?

Leonard Pearlin's work on social stress and the self-concept, joined together with his long-time friend and colleague Morris Rosenberg's work on the sense of mattering, provides an appropriate framework to address this question. Mattering, as one measure of the self-concept has not readily been incorporated into research on social stress and its effects on well-being (Pearlin and LeBlanc 2001). Looking at older adults, – many of whom, like Tony, have undergone physical and social changes, – provides a means to better understand mattering as part of the stress process model. Moreover, mattering can help us to learn more about the self-concept in late life.

Tony's experience may be typical of a growing proportion of older adults. Once connected, vibrant middle-aged adults, some older Americans may feel that they are no longer important to others. Pearlin's work tells us that the self-concept is important and relevant in the lives of all persons across the life course, where the self-concept is measured as sense of mastery, self-esteem, or sense of mattering.

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Regarding mattering, he writes that one cannot be without a sense of mattering, and at the same time enjoy a state of well-being, for mattering is a foundation block of psychological well-being (Pearlin and LeBlanc 2001).

Mattering is particularly congenial to the study of late life. It may, in fact, be particularly sensitive to changes in social roles and physical health that can accompany late life. Rosenberg and McCullough (1981) posited that older adults are likely to feel that they matter less than young children or mid-life adults. Regarding one particular role loss, retirement, they theorized, but did not test that a "problem of retirement is that one no longer matters; others no longer depend upon us…The reward of retirement [may] be the punishment of not mattering" (Rosenberg and McCullough 1981, p. 179).

Although Rosenberg and McCullough made a claim that the old feel that they matter less than the middle-aged, due to both a lack of role occupancies like paid work and to cultural devaluation of the old, there has been little empirical research on age and sense of mattering. It is therefore conceivable that one's self-concept may decline with age. However, it is also possible that one's self-concept may improve or remain constant with age. Older adults may experience enhancement of the self and experience personal growth with age (George 2000). Is it the case then that the oldest-old feel they matter less than the young-old? I examine what we know and need to know about mattering in late life, as I provide a brief overview of the self-concept (as part of the stress process model), discuss the self-concept in late life, and place a new and important emphasis on sense of mattering above and beyond mastery and self-esteem.

This chapter makes several contributions to research on the self-concept of older adults. First, it adds to the mattering literature, for little research has been conducted with this measure of the self-concept within an older population. In addition to looking at literature, analyses using the first wave of data from the Aging, Stress, and Health Study (ASH)[1] is presented. The ASH study is designed as a multi-wave panel study. The first wave was administered via face-to-face interviews in 2001–2002 with a sample of 1,167 adults ages 65 and over, living in Washington DC and two adjacent counties in Maryland: Montgomery and Prince Georges' (Kahn and Pearlin 2006). There are equal numbers of African-Americans, and whites; women and men in the sample (i.e., 12 groups each with 400 names).[2] Here, I look specifically at age within the 65 and older population, in order to understand self-concept differences by older age group. I will discuss and examine two mechanisms by which a decline in the self-concept may occur – due to of fewer role occupancies and poorer physical health in the oldest group. I also examine whether the relationship between role occupancies and physical health and mattering differs for women

[1] Support for this work comes from National Institute on Aging grant AG17461, the principle investigator is Leonard I. Pearlin.

[2] The original sampling frame was based on the Medicare Beneficiary lists for the three areas. 4800 names were randomly selected, with names equally divided among the three locales, African Americans and whites, and women and men. Analyses shown later in this chapter are based on wave 1 data only.

versus men and for African-Americans versus whites. This theorizing and analysis extends Pearlin's as well as Rosenberg's ideas about the self-concept in late life.

The Self-Concept as Part of the Stress Process

The self-concept can be thought of in terms of the stress process model (Pearlin 1989, 1999; Pearlin et al. 1981). The stress process model is intended for use by social scientists who "seek to incorporate and emphasize features of social and economic life into accounts of the health and well-being of people" (Pearlin 1999, p. 396). Underlying the notion of the stress process model is the assumption that the diverse factors that influence a person's well-being are interrelated (Pearlin 1999). The model affords us the opportunity to look at the context of people's lives and the processes whereby stress and stressors impact their mental health and well-being. It incorporates moderators and mediators that can act to buffer the impact of stress on mental health.[3] Several of these moderators and mediators are self-concept measures (i.e., mastery, self-esteem, mattering) and I focus here on what is predictive of the self-concept. An examination of Pearlin's stress process model has generally led me to ask how each of these self-concept measures may be differentially related to the general population as well as particular sub-groups such as older adults. For example, high levels of mattering may mediate or explain part of the relationship between a stressor (e.g., role loss) and the mental health of an older adult more so than mastery acts as a mediator of this same relationship.

There has been much work conducted on the self-concept of children, adolescents, and adults of various ages within the social stress literature, and this research indicates that the self-concept is protective of one's health and well-being throughout the life course (George 2000). Recently, social stress researchers have begun to focus more explicitly on late life. Looking specifically at late life provides a means to identify the current situations of older adults while at the same time gaining purchase on what may have lead up to one's sense of self as it currently exists. I suggest that social scientists need to think critically both about the common as well as unique circumstances of late life (e.g., changes in role occupancy and physical health), and, how these circumstances relate to the self-concept. Moreover, there is great diversity within the aging population and the contexts within which older adults live may be meaningful for understanding the self-concept.

Research conducted on the self-concept of older adults has not focused much on the changes that often take place "within" what for many is a vast number of years beyond age sixty-five. With Americans living longer and with a great deal of variation

[3]A moderator variable influences the strength of a relationship between two other variables. A mediator variable is one that explains the relationship between the two other variables (see Baron and Kenny 1986).

within the older population, I examine what factors explain the potential diminishment or enhancement of the self-concept among the oldest segments of adults. I examine older adults' sense of self (here measured primarily by dependence mattering, and importance mattering with brief reference to sense of mastery, and self-esteem) as they experience aging, more frequent shifts in role occupancies, and changes in physical health.

The Self-Concept in Late Life

What is the self-concept and what is the relationship between aging and the self? A review of knowledge about the self-concept, and a discussion of how aging relates to the self-concept are instrumental to answering these questions. The self-concept is the "totality of [an] individual's thoughts and feelings with reference to himself as an object" (Rosenberg 1979, p. xi). The sense of self or the self-concept is determined fundamentally by social forces (Cooley, 1909; Mead 1934). Rosenberg claimed that "although the individual's view of himself may be internal, what he sees and feels when he thinks of himself is largely the product of social life" (Rosenberg 1992, p. 593). Therefore, while self-assessment suggests a very personal experience, much, if not all, of the self-concept is formed with reference to persons outside of one's own individual experience; it is socially constructed.

The self has been described in great detail (Gecas and Burke 1995; Burke et al. 2003; Rosenberg 1979; Franks and Gecas 1992), and self-esteem is most often equated with the evaluative part of the self-concept (Gecas 1989; Gecas and Seff 1990), but there are two additional evaluative dimensions: mattering and mastery. All three measures are necessary and meaningful components of the self-concept (Rohall et al. 2007). It is important to study all three, though here I focus on mattering in order to provide a more nuanced understanding of the interactional self-concept. Role occupancy and social networks imply interaction; to this end, the addition of mattering to a study of older adults aids in our understanding of the overall self-concept.

To follow are brief overviews of the two most frequently studied dimensions of the self-concept; mastery and self-esteem (i.e., Rosenberg 1979; Gecas and Seff 1990; Schieman et al. 2005). Beyond these overviews is an account of the developing concept of mattering.

Mastery and Self-Esteem

Mastery refers to an individual's understanding of his or her ability to control the forces that affect his or her life (Pearlin 1999; Pearlin et al. 1981; Pearlin and Schooler 1978). Mastery is similar to both self-efficacy and locus of control, in that

it is concerned with personal control; however, it is different from locus of control because of its more limited focus on the control of conditions that affect individual lives (Pearlin and Pioli 2003). Mastery is usually incorporated into a stress process model (Pearlin et al. 1981) where it is treated as a condition that can directly affect health outcomes and it can stand as a resource that functions to moderate the impact of stressful experiences on mental health outcomes (Pearlin and Pioli 2003).

Self-esteem is another component of the self-concept; it can be described as how much a person likes, accepts, and respects himself overall as a person (Gecas and Seff 1990). Rosenberg defines it as, "the individual's global positive or negative attitude toward himself as an object" (Rosenberg and McCullough 1981, p. 168). It has been described as an understanding of one's *quality* as an object – that is, how good or bad, valuable or worthless, positive or negative, or superior or inferior one is (Thoits 1999). Although both mastery and self-esteem have a relatively long history in stress and social psychology research, mattering does not.

Mattering

Mattering is the extent to which we feel that we make a difference in the world and to the people around us (Elliott et al. 2004). Mattering may be the most socially driven assessment of the self-concept, and its benefit above and beyond the study of mastery and esteem is its ability to capture one's self-assessment based on how essential they feel they are to others. Mattering stands as a construct apart from esteem and mastery (Marshall 2001), yet it is an understudied concept, in part, to to because of its relatively recent conceptualization as well as its infrequent inclusion in health surveys that may offer other self-concept measures.

Mattering was originally defined as the feeling that others depend upon us, are interested in us, are concerned with our fate, or experience us as an ego-extension (Rosenberg and McCullough 1981). Roles are inherently social and relational, as a role cannot be held in the absence of other people. Mattering then is an important research companion to the study of role occupancy, for it reflects others most directly into the self – it is a most interactional and interconnected part of the self-concept. It provides more information about the way in which roles impact the self than do other dimensions of the self-concept. By nature, mattering stems from social experience.

Mattering measures the degree to which a person feels in particular ways that he or she is connected to others. As initially conceived by Rosenberg and McCullough (1981), there are multiple dimensions of mattering: (1) attention, (2) importance and (3) dependence mattering.[4] However, they were not able to directly measure

[4]A fourth dimension, ego-extension, is difficult to operationalize and is often incorporated into other dimensions in empirical research. It will not explicitly be addressed here.

mattering in their original work, and were at the beginning stages of developing the mattering construct when their work was published. Their efforts were exploratory and introductory in nature. Rosenberg and McCullough left open the opportunity to think critically on their conception of mattering. As well, they left open the possibility for exploration of their scale; rather, the continued development of their construct (see Elliott et al. 2004).[5]

Types of Mattering

I explore two sub-dimensions of mattering: *dependence* mattering and *importance* mattering. These different dimensions of mattering may touch upon opportunities to matter in different ways over the late life course (e.g. reporting high levels of importance mattering during later life) and they are both included because of their differential sensitivity to various life circumstances.

Mattering is expressed in the feeling that we are *important* to another person or are objects of their concern (Rosenberg and McCullough 1981). The belief that another person cares about what we want, think, and do, or is concerned with our fate – this is to matter. To be important, to matter, is independent of approval. For example, my sister may persist in criticizing me, but this does not mean that I do not matter; on the contrary, it may be precisely because I matter so much to her that she points out my faults. Similarly, a child recognizes that he is important to a parent whether he is reprimanded for bad grades or praised for a stellar report card. Positive or negative, he knows he is important to his parents.

A second dimension of mattering, dependence mattering, suggests that our behavior is influenced by our dependence on other people. This is understandable, as most of our needs are satisfied by other human beings. More perplexing is why our actions

[5]Potentially important, distinct from actual chronological age, is the concept of cohort. Regarding the adults in this study, some were born well in advance of the Great Depression, others, later. The Great Depression, as is commonly mentioned in social science research (Elder 1999), is but one example of how one's cohort and the related historical milieu of one's growing up plays a large role in their experiences, no less as they move beyond age 65. The cohorts from which older adults come may be correlated with their self-concepts. For example, the level of educational attainment will likely vary by cohort and has been shown to relate to some parts of the self-concept. A continued challenge in any life course work is the disentangling of age effects and cohort effects, especially when examining older adults. Aging effects refer to biographical time (i.e., the influence of maturation or biological aging). Cohort effects refer to social time (i.e., groups born during a particular period of history who share common events) (Giarrusso et al. 2001). I acknowledge that the work I am doing here cannot adequately tease apart aging effects and cohort effects, but it can lend insight into the characteristics and experiences of its respondents who range from 65 years to 101-years old in the early part of the twenty-first century, and make carefully specified predictions about what we learn in this research that may inform future life course work.

are similarly impacted by their *dependence* on us (Rosenberg and McCullough 1981). The parent who puts dinner on the table is driven by the pressure and the pleasure that others are dependent on him/her. Dependence mattering suggests social obligation and a powerful source of social integration. We are bound to society not only because of our dependence on others but also by their dependence on us.

Dependence mattering appears analytically useful; however, a shortcoming of the original work of Rosenberg and McCullough was the absence of a tested measure of dependence mattering. The concept of dependence mattering may be a bit elusive. I suggest one way to understand and recall the concept of dependence mattering is to imagine that our psychological well-being suffers when we perceive that no one depends on us for their psychological, physical, financial and/or social well-being. This dependence or need may manifest as advice seeking, it can mean that someone counts on us when they are feeling down, or that someone tells us about parts of their life they don't share with others. Also, others may depend on and call on us to understand what they are going through.

The dimensions of mattering that are of greatest consequence may vary over the life course. Though I cannot compare the differences in mattering between middle-aged and older adults, an illustrative example is worthwhile: a mid-life adult may be more likely than an older adult to garner a sense mattering from those *dependent* on her, while an older adult might report high levels of mattering based on the *importance* she feels in the eyes of a significant other. For example, a mid-life parent likely has young children that are dependent on her. An older adult would have less opportunity for such a relationship. However, an older adult may have a sense of self importance based on years of experience, and may happily convey her wisdom to younger adults and grandchildren. This is in agreement with research that has found that with age there is an increase in the amount of instrumental support people receive with a simultaneous increase in the amount of emotional support given (Moren-Cross and Lin 2006). It is thus plausible that the underdeveloped construct of mattering may help us to better understand the lives of older adults and the various ways self-concepts may change across the late life course.

Social Relationships and Mattering

Within the vast literatures on human relationships and social affiliation, it is evident that integration and connection to others is vital for the development and maintenance of a healthy sense of self and positive mental health. Social exchanges that promote a sense of belonging, identity, and commitment may influence one's self-concept (Schieman and Taylor 2001). We know that it is within exchange and interaction that individuals feel support, love, affection, care, and meaning. Not surprisingly, the study of social support is closely tied to these concepts. Social support, according to its most frequently cited definition, is the information that leads a person to believe that he or she is loved and wanted, valued and esteemed,

and integrated into a network of communication and mutual obligation (Cobb 1976). Much research indicates that receiving social support is a key determinant of successful aging, and a means to overall well-being (Krause 2004; Rowe and Kahn 1998). The protective aspects of social support may exist in emotional connections that link donor to recipient (Taylor and Turner 2001). How then is mattering, as the main interest of this work, different from social support?

Mattering is what makes social support work. The sense of mattering, as is the case for other parts of the self-concept, is experienced within an individual; it is a personal resource. However, mattering is the way in which social interaction is *translated* into the self-concept. Persons with a sense of mattering perceive that they are relevant in the lives of other people (Schieman and Taylor 2001). It is this perception of the connection to others that protects one's mental health, decreasing depression and anxiety. In this way, mattering can act as part of the stress process, working as a buffer between stress and poor mental health. It can buffer against a sense of anomie, connecting the outside world to an individual's sense of self. Individuals need to feel that their well-being matters to others and that the well-being of others is important to them.

The examination of the way in which social relations influence psychological well-being is important because of the potential for enhancing our understanding of the context and meaning of social support. That is, explication of such mechanisms – here mattering – may aid our understanding of what it is about social support that is helpful (Taylor and Turner 2001). Moreover, social support in the absence of mattering may actually be detrimental to well-being (Elliott et al. 2005); this suggests the need for continued work to better understand mattering. Additionally, there is need to theorize about mattering and other self-concepts within the aging population as longer life spans allow more opportunities for older adults to maintain or even reconstruct their sense of self.

Aging and the Self-Concept: Self-esteem, Mastery, and Mattering

The relationship between age and self-esteem has been examined more than the relationship between age and mattering, though it is somewhat limited. The exclusion of persons aged 65 and older is characteristic of much work on self-esteem. Only a few studies have explored the relationship between age and self-esteem into old age, and these studies have produced mixed results (Dietz 1996; Giarrusso et al. 2001; McMullin and Cairney 2004). Some research suggests that older adults on average have very good self-esteem; where self-esteem can be maintained, and even enhanced, in the face of role transitions, supporting a maturational perspective on the aging self (Dietz 1996; Minkler et al. 1997). This perspective argues that the process of social comparisons is not as salient in later life because at this stage individuals develop "ego integrity" and a general acceptance of their accomplishments (Dietz 1996; McMullin and Cairney 2004). Other research finds that older adults have worse self-esteem as compared to adults of younger age groups

(McMullin and Cairney 2004; Schieman and Campbell 2001). Role perspectives have also been used to explain the relationship between aging and self-esteem. According to role perspectives, the loss of social roles that is associated with old age will result in lower levels of self-esteem. Thus, the role perspective argues that as people retire and disengage from active parenting, their self-esteem will suffer (Dietz 1996). Clearly, researchers have not found a uniform relationship between age and self-esteem.

Aging and Mastery

Schieman and Campbell (2001) and Mirowsky (1995) make great strides at unpacking the relationship between age and mastery or sense of control. Mirowsky (1995) and Schieman and Campbell (2001) report that age patterns in education, with education being strongly tied to cohort, and physical impairment account for part of the lower sense of control among older adults. It is suggested that future work is needed to better understand the relationship between aging, mastery, and health (Schieman and Campbell 2001). Several possibilities are put forth, including the sense of being dependent on others and participation in community involvement. Continued study of the self-concept in late life may help to fill in some of the gaps in the age/self-concept relationship, particularly with the inclusion of mattering.

Aging and Mattering

Little research has been conducted on of how age is related to sense of mattering; yet roles that individuals hold vary by age, and with this variation may come an increase or decrease in opportunities for mattering. Initial work on mattering looked at those of younger ages; adolescents. Today, work on adolescents and mattering often looks at the sense of mattering relative to one's role as a boyfriend or girlfriend or intimate partner (Mak and Marshall 2004). Later in the life course, we may be interested in different types of interaction or qualitatively different types of romantic or intimate relationships that involve spouses or lifelong partners. Marital status generally, and widowhood specifically, may be critical in predicting the self-concept of older adults. Moreover, these intimate relationships in late life may overlap with the role of caregiver or care recipient; the role of caregiver providing opportunities for mattering (Pearlin and LeBlanc 2001).

Late life should be recognized as a critical phase of the life course. Though diverse, the 65+ age group likely have in common a number of unique possibilities for, or changes in, the sense of mattering. Again, differences are likely to exist within the population of seniors. The image of 65+ adults as a monolithic group is dated, if it was ever true. Aging research frequently finds that variability among older people is not only great but is often greater than that which exists in other age groups (Ferraro 2001; Settersten 2006). In time, we may find even greater diversity

within the 65 and older community. Diversity exists among myriad dimensions: health status, work and family statuses, social interests, race, gender, economic security, hobbies, attitude, among others.

Mattering, self-esteem, and mastery as three measures of the self-concept provide three locations upon which the self can be assessed. Each dimension may be more or less sensitive to the aging processes as well as race and gender contingencies. For example, mattering may be more sensitive to changes in roles, for roles are related to interaction with others, where perhaps mastery may more aptly capture changes related to physical health, where control over one's body, or one's health, may be closely related to this aspect of the self-concept. Different components of the self may in fact provide different information on the health and well-being of older adults. My focal relationship is therefore between aging and the self-concept with an emphasis on mattering.

In sum, a review of the literature shows diversity in the relationship between age and the self-concept, depending upon which measure is explored; even within measure, there is variation. Self-esteem has been shown to decline, remain stable, and even improve for older adults where work on mastery has shown a decline in mastery with age. On the basis of the combined contributions of the age/self-concept literature and the knowledge that mattering is the most interactional of the self-concept measures, I predict that mattering will decline in late life; a time in the life course when interaction, role occupancies, and physical health may diminish. In addition, I suggest that role occupancies and physical health may mediate the relationship between aging and the self and use mattering to address this question.

Figure 9.1 provides a conceptual model for this research. The focal relationship to be examined is between age, to the left, and the self-concept, as measured by dependence mattering and importance mattering to the right. Role occupancies as

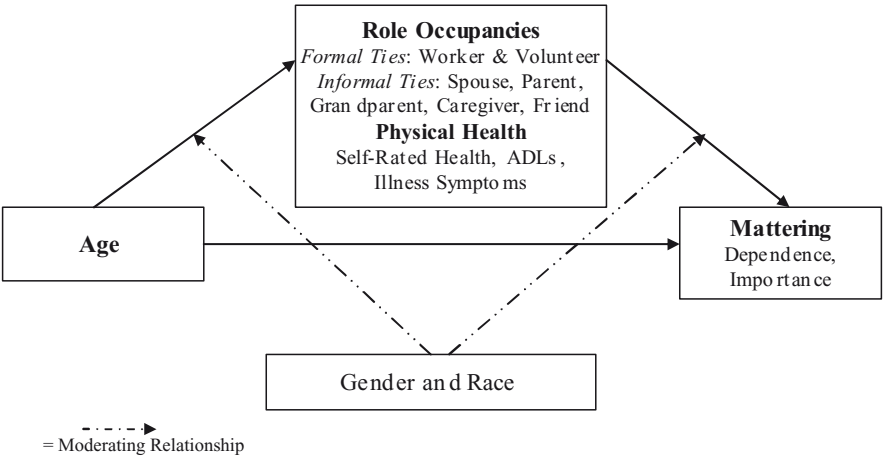

Fig. 9.1 Model of linkages between age and sense of mattering: late life experiential roles and health

well as physical health status, as shown in the center of the model, suggest two explanations for the focal relationship. The model also suggests the moderating influence of race and gender on the relationships.

On the basis of the model shown here, age is linked to a declining sense of mattering in late life, including lower levels of dependence mattering and lower levels of importance mattering. I predict that age will be negatively linked to role occupancy and physical health. I also predict that role occupancy and physical health will be associated with mattering. Finally, I expect that the effects of age on sense of importance and dependence mattering will be mediated by role occupancies and physical health.

Roles and Physical Health as Mechanisms

The measurement of role occupancy captures interactional influences on the self-concept, that is, interaction with other people and institutions. The choice to focus on role occupancy is grounded in Pearlin's work on loss of mattering (LOM) which focused on the sense of mattering that was held by caregivers and how the loss of that particular role had deleterious consequences for one's sense of mattering. In Pearlin's work, the construct of mattering illuminates the consequences of long-term caregiving on the self-concept, rather, the way in which the absence of that role occupancy leads to a decline in sense of mattering (Pearlin and LeBlanc 2001).

Roles, for the most part, are either occupied or not occupied.[6] For example, at one point in time a person may occupy the marital role, and later, after the death of a spouse, that person has become a widow. To this end, role occupancy for the purposes of this chapter is thought of as an "in" or "out" process, where one is holding a role or not holding that role.

The occupancy of roles is dictated in large measure by the position of an individual on their own life course trajectory. Roles can be defined as the behavioral expectations associated with a "position" and are frequently used interchangeably with the concept of identities (e.g. "grandmother," "worker," "peacemaker") (Gecas 1982; Jackson 1997). Role occupancy plays a critical part in the understanding and orchestration of one's life course (Giarrusso et al. 2001; Reitzes et al. 1994). Role identities are protective because they make life purposeful (Thoits 1983). Individuals who enact social roles are exposed to various actors who engage them in the type

[6]The friendship role is an exception, as I assess contact with friends as a measure of role occupancy. It would be inappropriate to say that someone is a friend or is not a friend in the way that a person is a parent or is not a parent because almost everyone has at least one friend; the issue becomes the quantity (and quality) of friendships. Moreover, role occupancies or exits are not always easily defined, but for analytic purposes I draw a distinction between occupying a role and not occupying a role.

of social interaction that is vital for development. Socially, interacting with others allows the individual to take the role of the other and teaches the individual appropriate conduct. Within these processes, the individual becomes a part of the ongoing relationships that define society (Jackson 1997).

This positive estimation of role engagement is widely held. However, some researchers have argued that social roles are not in themselves beneficial or detrimental to well-being; the context and quality within which roles are enacted as well as an individual's interpretation of the meaning of their role determines whether roles are positive or negative for well-being (Rushing et al. 1992; Wheaton 1990). For the self, being engaged in major roles in social life helps to ensure that one is thought of or depended on by others (i.e. one matters).

Role Occupancies as Formal and Informal Ties

The roles that individuals occupy can provide a sense of purpose and intention; as well, they may function to explicitly allow for social connections with significant others. I suggest that it is helpful to categorize role occupancies according to the ties they provide to other individuals and society at large. To follow, I discuss how *formal ties* versus *informal ties* as measured through role occupancies are related to sense of mattering. The characteristics of role occupancies are discussed to better understand the sense of mattering in late life as these roles serve to tie older adults to significant others and the community.

I suggest two pathways to mattering through role occupancies. Specifically, in older adults, I suggest that (1) a sense of productivity and (2) a sense of connection to significant others will be linked to sense of mattering. I focus on formal ties (i.e. work and volunteer roles) as a location for productivity and informal ties (i.e. marital, parent, grandparent, caregiver and friend roles) as a means to mattering through social connections. Formal ties to the public sector allow individuals to experience a sense of productivity. Such formal roles may provide purpose and intention in one's life and may be associated with sense of mattering. Two means to such ties are the work role and volunteer role.

Rosenberg and McCullough (1981) suggest that the absence of the work role, especially retirement, may mean a lower sense of mattering. A productive role (i.e. work or volunteer role) may provide intention and purpose; a purpose that one recognizes on an individual level and may also be validated by society. To this end, research suggests that compared to full-time workers, the retired report worse self-concept (i.e., mastery and self-esteem) (Reitzes and Mutran 2006; Ross and Drentea 1998). Since older adults may lack formal roles and statuses within the main institutions of society, it may be difficult for them to maintain positive self-evaluations (Reitzes and Verrill 1995). The sense of productivity that helps individuals feel personally validated may decline in the absence of such roles. Additionally, society often looks at seniors as less- productive members of society than other adults, occupancy of such roles may help others to see older adults as

useful. It follows that one's sense of being less than a productive member of society would be associated with a decline in mattering.

The sense of meaning or purpose that accompanies the work or volunteer role may lead to sense of mattering. Having somewhere to go or something to do on a daily or predictable basis may maintain one's sense of mattering. Moreover, acquisition of the volunteer role may make it possible for an individual to feel as though they are a productive member of society and again, may be positively related to sense of mattering. Though payment does not accompany volunteer work, volunteering likely possesses similar characteristics to paid work such as a keeping a schedule, focusing on goals, and collaborating with others, and can be viewed as a productive role.

Well-being literature shows a correlation between volunteering and health among older adults. Research has shown the benefits of volunteering for volunteers as well as those who are in receipt of volunteer services, both individuals and organizations (Grossman and Tierney 1998; Morrow-Howell et al. 2003; Wilson and Simson 2006). Though the research base is still relatively small, there is evidence that volunteering fosters psychological well-being (Morrow-Howell et al. 2003; Van Willigen 2000). From a role enhancement perspective, those older adults who volunteer are more likely to have greater resources, a larger social network, and more power and prestige than their peers, which may lead to better physical and mental health (Lum and Lightfoot 2005; Moen et al. 1992).

In addition to roles that allow for formal ties or the connection to institutions that are more formal in nature, there is a host of informal ties that can be expressed through a variety of role occupancies such as family roles (i.e., marital, parent, and grandparent), caregiver, and friend roles. Such roles can provide social connections to important significant others and may overtly provide a sense of belonging and a sense of mattering, additionally, such informal ties can provide opportunities for others to depend on older adults and provide spaces for one to feel important.

According to activity theory and structural role theory, social interaction is important to the maintenance of the self-concept (Lemon et al. 1972). For example, the spousal role, perhaps more than any other, provides interaction and connection with a significant other. Here, a spouse has the opportunity for feelings of importance and dependence relative to a significant other, both means to mattering. If greater sense of mattering is derived from such a role, then its absence will likely decrease the sense of mattering. Married respondents report significantly higher levels of mattering when compared to the currently single (Taylor and Turner 2001). The loss of such a role, or widowhood, especially the time just after the actual event of the death of a spouse, often has an impact on one's sense of self.

The parent role is another family tie likely linked to mattering. There is a great amount of literature on how parents impact the self-concept of their children (McClun and Merrell 1998; Rosenberg 1979), and even how parental death impacts their children's well-being (Umberson and Chen 1994), but there has been little research on how having children may improve adults' lives (Milkie and Nomaguchi 2003). It is likely that the parental role had great impact on the self-concept of a parent

when parenting was new and for many years into a child's life course. For older adults, the role of parent has been theirs for some time and the meaning of that role may have changed over time. That said, parenting never truly ends as long as one's child is living, though the degree to which the parental role is salient to the occupier may change. However, in assessing role occupancy of older adults, the parenting role is likely to be very important for self-concepts (Krause 1994), particularly as measured by dependence and importance mattering.

The grandparent role and the timing of the transition to grandparenthood plays a part in this assessment of self (Kaufman and Elder 2003). The grandparent identity may encourage psychological well-being (Reitzes and Mutran 2004) and this may be how the grandparent role is implicated in the measure of one's self-concept. The grandparent, as an informal or familial role, often leads to interaction and connection with not only grandchildren, but also adult children. Greater opportunities for interaction with family may provide chances for increased sense of importance and dependence mattering. These opportunities to matter are likely made available by the need for babysitting or assistance with time demands that come with the introduction of children into a family network.

Another informal tie comes in the form of the caregiver role. Caregiving is defined as the care of a spouse, family member, or loved one in need of ongoing assistance because of illness or disability. The care of a loved one may, along with its potential stresses (Avison et al. 1993), provide opportunities for mattering. The positive and negative consequences of caregiving may mean a positive or negative relationship between caregiving and mattering. It is therefore plausible that sense of mattering may be high for those who are providing care. As previously noted, Pearlin's and LeBlanc's work shows that the loss of a caregiver role can be related to a loss of mattering (Pearlin and LeBlanc 2001).[7]

Beyond family and caregiver roles, another informal tie is formed through the friendship role. Contact with family members via marriage and caregiving is important for health, so too are the connections forged through friendship. Across the life course, the role of friend is consequential for well-being (Matt and Dean 1993). Being a part of a social network or having friends to turn to for social occasions and support is of great importance.

[7]Notably, previous research suggests that caregiving, particularly great amounts of caregiving, is related to lowering levels of mastery (Pearlin and LeBlanc 2001). Engaging in the care of a family member or friend may be financially, emotionally, and physically taxing (Horwitz and Reinhard 1995; Pruchno and McKenney 2002). "Caregiver burden," a form of negative appraisal of current and future ability to cope with care demands, may prove problematic for the self-concept and overall well-being of a caregiver (O'Rourke and Tuokko 2004). This burden may become overwhelming, and while it is clear that adult day care and respite care can reduce the burden experienced by caregivers (Zarit et al. 1998), these and other resources are not available to all. Therefore it is possible that different components of the self-concept (i.e. importance mattering, dependence mattering, self-esteem) could be either positively or negatively related to caregiving.

Older adults have less social contact compared to younger adults (e.g., Due et al. 1999; van Tilburg 1998), and yet these relationships, for many, remain rich and fulfilling. Being a part of a social network aids in positive well-being, though there are questions about how the network and support is useful and how to measure its utility. As people age, there is a general receding from frequent contact with friends. This is potentially because of transportation issues, physical difficulties, and the loss of friends to death, relocation, or infirmity. The loss of peers can be very difficult. Just as we speak of widowhood and the loss of a spouse, for seniors, there is a greater probably of decreased friendship networks, the loss of friends, and a decreased ability to see those friends than is the case for younger individuals (van Tilburg 1998; Kalmijn 2003).

Again, mattering is the most interactional part of the self-concept. It is predicated on relationships to others as individuals and society at large.[8] To this end, formal and informal ties can be found through a series of role occupancies. These ties provide opportunities to matter through a sense of productivity and/or social connection to significant others.

Physical Health

I suggest that physical heath status is another mechanism to explain the relationship between aging and the self-concept. I view physical health as vitally connected to the self-concept of older adults, though I conceive of physical health differently than role occupancy. Some research suggests that health can be described in terms of a "healthy" or "sick" role (Parsons 1951; Petroni 1969). For the purposes of this research, I view physical health as outside of the role occupancy explanation, because there are no direct role partners to speak of in regard to one's physical health, unlike the roles of friend, worker, volunteer, etc. I use health status measures as potential mediating variables between age and mattering to better understand the self-concept in late life.[9]

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[8]Eight questions are used to assess mattering. Each question began: "Now think about all your relatives and your friends, and the help and support you get from them. Please indicate whether you strongly agree, disagree, or strongly disagree with these statements." (1) You are important to people you know; (2) Your well-being matters to people you know; (3) There are people who do things they know will please you; (4) What you think or feel doesn't seem to make much difference to anyone; (5) There are people you know who depend on you when they need help or advice; (6) People count on you when they are down or blue; (7) People seem to tell you things about themselves that they don't tell other people; (8) Other people count on you to understand what they are going through." Each question is coded so that greater feelings of mattering represent higher mattering scores. Scores from the first four questions, importance mattering, are summed and averaged, resulting in a possible range from 1 to 4. Scores from the second set of four questions, dependence mattering, are also summed and averaged to create a score between 1 and 4.

[9]It is reasonable to assume that one's physical health is associated with their ability to occupy certain roles. For example, a physical disability may interfere with one's ability to hold a manual labor job. However, I do not explicitly examine the relationship between these in this chapter.

Physical malfunctions of the body can have an impact on the overall well-being of affected individuals (Bartol 1980). If current demographic trends continue, whereby adults live further into old age, physical health decline and problems will most likely increase in numbers and significance (Hadley and Schneider 1980). Life course perspectives point to the increased probability of changes in physical health at older ages; physical health declines then can be viewed as somewhat unique to late life. And, the consequences of such physical health change are important to the understanding and foundation of the self. This points to the potential importance of physical health decline as it is related to dependence mattering and importance mattering. There may be an important relationship between disability or physical health status and the diminishment of the mattering in older adults.

The concept of "age as decline" predicts that age-associated changes in physical function make social integration more challenging (e.g. how often one gets out of the house to see friends) (Mirowsky and Ross 1992; Schieman and Campbell 2001). "Age as decline" is appropriate for the prediction of the self-concept in old age, not only because the state of the physical body is related to one's sense of self, but also because a decline in physical capacity may be connected to one's ability to function in social roles. Physical health decline has been shown to relate to the decline of different parts of the self-concept. For example, Schieman and Campbell (2001) show that more physical impairment and poorer global health, along with other factors such as low levels of education, explain part of age's negative association with health control and self-esteem.

Why should physical health matter to the self, particularly mattering? Although Rosenberg and McCullough (1981) hinted at the lack of importance and dependence mattering older adults might feel, they did not speculate about physical health nor did Pearlin and LeBlanc (2001) in their work on mattering. Decreased or declining physical health means that one cannot provide support to others as easily as they might have at other points in their life. This type of change may be related to an individual's sense of mattering to friends and family, to one's self-esteem, and to one's perception of the control or mastery they have over their life circumstances. In addition, the reflected appraisals an older adult receives from others, or the way one comes to see oneself as they think others see them (Gecas and Burke 1995), may impact the way in which they translate their physical health challenges into their self-concept. For example, if a once physically strong woman showed her care for her family by performing home repairs and she can no longer negotiate a ladder or grip a paint brush with arthritic hands, her sense of self, specifically her opportunities for mattering, may be reduced.

Interest in the physical health/mental health connection is rapidly growing (Heidrich and D'Amico 1993; Kelley-Moore and Ferraro 2005; Linden et al. 1997; Wykle 1994). While the relationship between physical health and self-esteem has been studied by Schieman and Campbell (2001) and McMullin and Cairney (2004), it remains to be seen if the patterns for self-esteem play out for other parts of the self-concept,; specifically, dependence mattering and importance mattering.

Based onOn the basis of the previously discussed literature, I put forth several questions about mattering in late life. How is aging related to mattering in older

adults? Does role occupation explain this relationship? Does physical health status explain this relationship? Acknowledging diversity within the older population, and group differences in the self-concept, I also ask, "does a key social status, such as race, matter for understanding how role occupancies and physical health diminish the self in late life?" [10] That is, do the ways by which role occupancies and physical health mediate the age/mattering relationship depend on race? I now turn to the results of my inquiries.

Results

I find that with age, on average, the self-concept does in fact decline. For illustrative purposes, I show multiple measures of the self-concept (i.e., mastery, self-esteem, dependence mattering and importance mattering). Figure 9.2 shows the bivariate relationship between age and self-concept measures in ASH data. In this analysis (n=1,149), the self-concept is lower among those of advanced age. Age is divided into categories that represent the young-old (65–74), the old (75–84) and the old-old (85+). For each successive age category, mean levels of importance mattering, dependence mattering, mastery, and self-esteem decline. Differences between the young-old and old-old are statistically significant for all four self-concepts, and for dependence mattering and esteem there are also significant differences between the old and old-old groups.

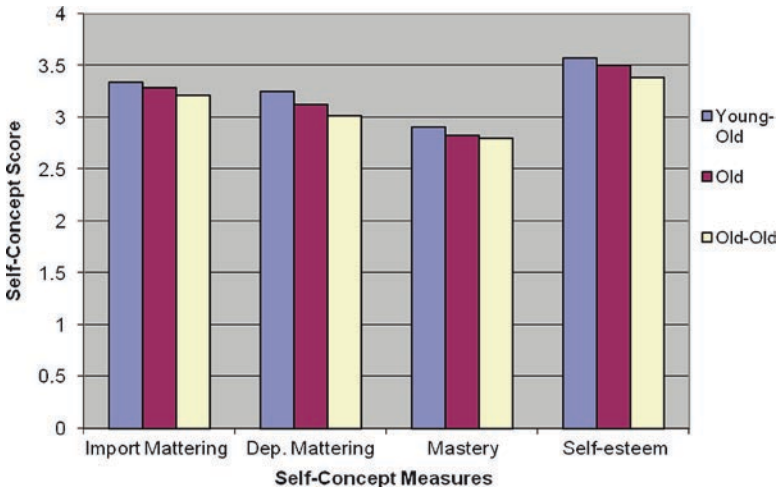

Fig. 9.2 Average self-concept scores across age categories

[10]In the interest of time and space, I do not include a review of the potential relationship between race and gender and the self-concept, though research suggests the need to look at such differences and when possible, to also include analyses based on a combination of race and gender.

Do these results hold up in multivariate analyses that focus specifically on mattering? Ordinary least- squares regression (OLS) (Abdi 2003) is used in the service of understanding the degree to which age differences in mattering are attenuated when role occupancies (worker, volunteer, marital, parent, grandparent, caregiver and friend roles), and physical health statuses (self-rated health, activities of daily living, and illness symptoms)[11] are entered into subsequent models. In addition, I argue that the relationship between age and the decline in mattering may be mediated by role occupancy and physical health. In this way, role occupancies and physical health status function as third variables that represent the generative mechanism through which age as the focal independent variable is able to influence the dependent variable of interest, mattering (Baron and Kenny 1986).[12] For dependence mattering (see Table 9.1), I find that the productive roles of worker and volunteer, as well as self-rated health are more predictive of dependence mattering than other role occupancies and health measures and act as mediators of the age/dependence mattering relationship.[13]

Regarding importance mattering (see Table 9.2), I do not find mediation of the age/mattering relationship, that is, the decline in role occupancies and physical health do not mediate or explain the age/mattering relationship but the volunteer, friend, and parent roles are significantly related to importance mattering.

In analyses not shown here, regarding race differences, I find that for whites, the work role and self-rated health act as significant mediators of the age—dependence mattering relationship. For African-Americans, while work and self-rated health are not mediators of this relationship, the volunteer role mediates the age—dependence mattering relationship. Interestingly, family, caregiver, and friend roles do not act

[11]Self-rated health is measured with the following question: In general, would you say that your current health is excellent, very good, good, fair or poor. Higher scores mean better health. Activities of daily living (ADLs) are measured with the following questions that measure disability: "…can you do the following activities without difficulty or do you need help?" (1) Dress and undress yourself? Can you do this… (2) Get in and out of bed? (3) Take a bath or shower? (4) Get to and use the toilet? (5) Climb up the stairs? (6) Keep your balance while walking? Higher scores mean more disability, or struggles with activities of daily living. The illness symptoms scale asks, "In the past month have you had headaches?" Would you say…Never, 1 time, 2–3 times, 4–5 times, more than 5 times? In addition to headaches, the following symptoms are measured: a cold, indigestion, constipation or diarrhea, weakness or faintness, back pain, shortness of breath, incontinence, muscle aches or soreness, and heart palpitations. Higher scores mean more illness symptoms.

[12]Meditational analyses are not shown here. In order to see if mediational analyses vary by the social statuses of race and gender, I performed moderated-mediational analyses (Muller et al. 2005; Petty et al. 1993). Traditional moderation analyses would examine race or gender differences in the direct relationship between age and mattering. Here, I am not explicitly interested in these differences, but rather, I am interested in the race and gender differences in role occupancies as mediators of the age/mattering relationship. Statistically, this means the creation of interaction terms that multiply race and gender by each of the role occupancies (e.g. work*race, work*gender), as mediators.

[13]The parent and friendship roles are significantly related to dependence mattering, but do not statistically mediate the relationship between aging and dependence mattering.

Table 9.1 OLS regression coefficients in models predicting dependence mattering ($N = 1{,}149$)

Age	Model 1	Model 2	Model 3	Model 4	Model 5
Role occupancy	–0.012***	–0.010***	–0.007**	–0.008***	–0.006*
Formal roles					
Work role			0.106**		0.097**
Volunteer role			0.125***		0.110***
Informal roles					
Marital role			0.012		0.013
Parent role			–0.010		–0.012
Grandparent role			0.090*		0.090*
Caregiver role			0.057		0.054
Friend role			0.039***		0.036***
Physical health					
Self-rated health				0.049**	0.037*
Activiteis of daily living				–0.104*	–0.059
Illness symptoms				0.035	0.034
Controls					
African-American (1 = black, 0 = white)		0.149***	0.168***	0.161***	0.178***
Women (1 = women, 0 = men)		0.102***	0.101**	0.095**	0.095**
Income		0.022***	0.015*	0.018**	0.012*
Income flag		–0.042	–0.004	–0.027	0.001
Education		0.008	0.004	0.006	0.003
Constant	4.088	3.645	3.278	3.541	3.242
Adjusted R squared	0.026	0.057	0.098	0.071	0.103

Notes: Unstandardized OLS regression coefficients
#$p<0.10$ *$p<0.05$ **$p<0.01$ ***$p<0.001$

as mediators for either whites or African-Americans, nor, do they act as mediators for the entire sample.[14]

There is a significant difference between African-Americans and whites in the effect of the work role on dependence mattering. I found that occupancy of the work role is positive and significantly related to dependence mattering for whites ($b = 0.174$, $p < 0.001$), working whites report higher levels of dependence mattering (3.32) than non-working whites (3.15). However, for African-Americans, there is no significant difference in the reporting of dependence mattering by occupancy of the work role.

In sum, for whites, the work role and self-rated health act as significant mediators of the age—dependence mattering relationship. For African-Americans, while

[14]While ancillary analyses were run by gender, no significant mediation results were found based on gender.

Table 9.2 OLS regression coefficients in models predicting importance mattering ($N = 1{,}149$)

Age	Model 1	Model 2	Model 3	Model 4	Model 5
Role occupancy	–0.005*	–0.003	0.000	–0.002	0.000
Formal roles					
Work role			0.065*		0.055#
Volunteer role			0.060*		0.048#
Informal roles					
Marital role			0.013		0.016
Parent role			0.116**		0.116**
Grandparent role			0.036		0.036
Caregiver role			0.022		0.020
Friend role			0.028**		0.026**
Physical health					
Self-Rated health				0.039**	0.034*
Activiteis of daily living				–0.042	–0.009
Illness symptoms				–0.007	–0.009
Controls					
African-American (1 = black, 0 = white)		0.055*	0.064*	0.058*	0.066*
Women (1 = women, 0 = men)		0.067*	0.070*	0.065*	0.069*
Income		0.023***	0.017**	0.019***	0.014**
Income flag		–0.042	–0.019	–0.032	–0.016
Education		0.028**	0.028**	0.025**	0.026**
Constant	3.663	3.191	2.851	3.144	2.851
Adjusted R squared	0.004	0.048	0.073	0.058	0.079

Notes: Unstandardized OLS regression coefficients
#$p < 0.10$, *$p < 0.05$, **p<0.01 ***p<0.001

work and self-rated health are not mediators of this relationship, the volunteer role mediates or helps explain the age—dependence mattering relationship. Interestingly, family, caregiver, and friend roles do not act as mediators for either group, nor, as seen previously, do they act as mediators for the entire sample.

Multivariate analyses that illustrate the mediation relationship between age and mattering show that several role occupancies are implicated in the relationship between aging and the self-concept. Most striking are the work role and the volunteer role as they relate to dependence mattering and importance mattering. Neither of these roles resides in the informal or familial sphere, but rather in what I suggest to be a productive or formal sphere outside of the home/family. Productivity may in fact be the thread that ties these two role occupancies – work and volunteering – together. That is, older adults, not unlike persons of other age groups, may feel a need to be productive and therefore connected to and needed by "society." This important formal tie to others may happen when one is in the paid labor force; moreover, the volunteer role may serve a similar purpose that extends beyond the paid labor force (Herzog et al. 1998; Morris and Caro 1996; Wilson and Musick 1997).

Interestingly, in Pearlin's and LeBlanc's (2001) work on loss of mattering (LOM) outside employment was negatively associated with LOM. By contrast, caregiver's LOM was unaffected by whether or not they held familial roles such as parent or spouse. Their research seems to mirror the analysis shown here which finds that a productive role, such as worker, may be positively related to mattering.

An outstanding point remains: it is not clear if productive activities make people healthier or healthy people are more likely to be engaged in productive activities (Moen et al. 1992). The volunteer role, and to some extent the work role, may be taken up by those who are themselves healthy and this may explain the significant and positive relationship between volunteering and a more positive self-concept. What does it mean that work/productive roles matter, and potentially matter more than informal roles? Societal expectations of productivity may have a truly profound influence on the self-concept, where in order to feel that others depend upon us, we have to be producers within society, not just within the family.

It is noteworthy that we find varied results for dependence mattering versus importance mattering. It would seem that familial roles would be closely tied to sense of dependence mattering and importance mattering, and yet the familial roles of spouse and parent are not significantly related to dependence mattering. An informal role that is significantly related to dependence mattering and importance mattering is the friendship role; it is more closely related to mattering than familial and caregiver roles. The friend, work, and volunteer roles go beyond the family sphere, which we often view as a location for social support and sense of connection to significant others. The quality of family relationships may be different or hold different meanings in later life relative to earlier years, where the development of family is likely tied to sense of mattering. For older adults, contact with society, beyond the family, appears to be a better predictor of dependence mattering than the occupancy of family roles.

The lack of a significant relationship between the caregiver role and mattering is of interest in light of Pearlin's and LeBlanc's work on loss of mattering as a result of the loss or death of a care recipient. It is possible that the *loss of* versus the *occupancy of* the caregiver role may be of greater relevance to mattering. In addition, Pearlin and LeBlanc looked at a unique group of caregivers who were caring for significant others with Alzheimer's disease. This type of caregiving may have required a great deal of specialized or intense care above and beyond the caregiving of those measured here in the ASH sample (see Tables 9.1 and 9.2). The loss of this intense caregiving relationship may have been particularly deleterious to a caregiver's sense of self. Moreover, Pearlin and LeBlanc's (2001) analysis may have benefited from the inclusion of all of the role occupancies included in the analysis shown here (i.e., worker, volunteer, spouse, parent, grandparent, friend) when predicting loss of mattering as related to the loss of the caregiver role.

At the outset, I stated that Rosenberg and McCullough (1981) questioned whether and how older adults feel they matter. I could not directly address if older adults feel they matter less than young children or mid-life adults, but I was able to address these questions of mattering within a population of older adults. This research lends support to Rosenberg's and McCullough's notion. If one

accepts that the decline in importance mattering and dependence mattering occurs when aging from young-old to old-old, it follows that compared to even younger aged adults, the elderly may fare worse in regard to the important aspects of the self. This work also expands their ideas in two ways, first, by stressing the volunteer role as important to the self in older adults. Rosenberg's and McCullough's thoughts of retirement as punishing to one's sense of mattering fails to recognize the possibility of volunteering and other alternatives to this role loss such as caregiving and active grandparenting roles to offset the loss of a work role. Their notion of old age seems to agree with social science research that has in the past described retirement as the "roleless role." However, many seniors are finding multiple ways to provide a sense of meaning and mattering in their lives.

Second, this research expands Rosenberg's and McCullough's by incorporating race differences in the experience of the self-concept. I find that work matters more so for whites than for African-Americans. The loss of the work role may mean less mattering for whites, supporting their notion that retirement can punish one's sense of mattering, but this notion is challenged for blacks who may more likely experience this role loss as a positive experience. A second productive role, volunteer, acts as a mediator of the age/dependence mattering relationship for African-Americans, but not whites. This finding suggests the need to further investigate the differential benefits of volunteering for the self by racial group.

I likely have come closer to answering the question that asks whether older adults feel they matter as much as others. But, how do they matter? I suggest that older adults feel they matter through role occupancies, mainly work and volunteer roles. I also found significant relationships between occupancy of the friend and parent roles. Though Rosenberg and McCullough and Pearlin and LeBlanc did not suggest it, physical health does in fact act as a mechanism through which older adults feel they matter (as measured by self-rated health). It is possible that a decline in physical health, in the worsening of abilities to perform activities of daily living (ADLs) over time, may be related to dependence and importance mattering. The study of physical health and mattering should be expanded to examine middle-aged adults into older age and potential changes in mattering and physical health over several decades.

Although limitations exist, the analyses presented in this chapter show convincingly that in the Aging, Stress and Health sample of adults 65 years and older, the relationship between age and mattering is a negative one. That is, young-old adults report higher levels of the self-concept as measured by importance mattering and dependence mattering than the old-old. Additionally, the analyses of role occupancies as well as physical health status in part explain this difference. This research provides a different perspective on the relationship between age and the self-concept, where depending upon which measure of the self-concept is employed (dependence mattering or importance mattering), we find a different answer to the question, "what underlies the relationship between age and the decline in the self-concept?" What this might mean for future self-concept research is that multiple measures (including dependence mattering, importance mattering, mastery and self-esteem) should be employed in order to hold it up as valid, and, exploration of formal and informal ties to the community should be examined.

Implications

Macro-level changes, such as longer life expectancies, along with micro-level changes in the meaning and the experience of older adults coalesce, making it evident that the changing lives of seniors and their families need to be examined by social scientists. Americans are living longer and there are varied sociological implications of this longevity. These implications can be thought of along two main lines: first, societal or macro- level implications and, second, micro- or individual- level implications such as changes in the self-concept as have been noted in this chapter.

On the societal level, we are experiencing a "senior boom" that will transform our homes, our politics and our health care system. Demographically speaking, by 2030 it is projected that 1 out of 5 people, or 20% of the population, will be over 65 (Eitzen and Baca Zinn 2004). This population shift has great implications. From a social problems perspective, where a social problem is defined as societally induced conditions that cause psychic and material suffering for any segment of the population, we can view the aging society as a challenge. What are the implications of an aging society? Concerns about the U.S. Social Security system are on the rise. Another challenge is the growing number of older persons with physical health concerns; additionally, elder abuse is also a very unfortunate but real social problem within the older community, and growing. Moreover, as the population of older adults grows the percentage of families caring for older adults increases.

What are the implications for an aging society on a micro or individual level? Aging for the individual could be a positive experience, a negative experience, a neutral experience; or a mixture of each as time and context converge. Older adults have the ability to participate in their own lives and are often agents of their own change or stability. In older age, there are increased chances for role changes and increased chances for physical decline. Unfortunately, growing older in U.S. society often brings with it a devalued status and many may struggle to manage this ever -evolving status.

This chapter is meant to acknowledge the importance of the self-concept of older adults, and it aims to promote longer, fuller lives that while diverse in experience, may lead to the raising of positive expectations for the lives and selves of older adults and allow people to remain healthier for a larger proportion of their lives. I hope this knowledge can contribute to policies or practices that will help older adults maintain strong selves. To this end, I suggest continued study of work and volunteering in seniors, friendships in older adults, more research on the physical health of older adults, and in regard to dependence mattering, research that explicitly asks older adults where they derive a sense of mattering.[15] Moreover, the identification of ways that may assist older adults in dealing with the negative

[15]Ancillary analyses revealed group differences (i.e., race differences) in the viability of proposed explanations for the decline in the self-concept with age. Future analyses should seek to use a nationally representative sample, and examine race by gender interactions, that is, look at African-American men, white men, African-American women and white women as separate groups.

consequences of stress is important. A positive self-concept can buffer against negative mental health consequences such as depression, anxiety, and anger. Regarding the stress process model, I suggest that the self-concept measure of mattering be more frequently added to analyses that utilize self-concept measures as moderators or mediators of the relationship between stressors and mental health. Without its inclusion, analyses may inadvertently leave out an important assessment of the self-concept that may particularly be sensitive to age, race, and gender differences in both the antecedents and consequences of mental health. Moreover, a fuller understanding of the self-concept in late life can extend stress research generally and the stress process model specifically by adding to our understanding of the relationship between stressors and well-being.

Although we can call on older persons to supplement former roles with new roles and pay particular attention to their physical health, certain aspects of the self-concept will not be helped by these strategies alone. On one hand, we need to start to change societal perceptions of older adults, and, as well, we need to work for structural or institutional arrangements that provide or encourage meaningful work through very old age. This would help address a "psychological" problem at a societal level. Part of this meaningful work can be volunteer work. As Wilson and Simson (2006) offer, volunteering for baby boomers is positively related to their well-being, and we can encourage organizations looking for "workers" to actively draw upon this most impressive group of potential volunteers. Moreover, productive work by older adults can benefit their psychological well-being and sense of self, and older workers or volunteers can make a valuable contribution to their communities.

Any efforts to understand, or improve, or maintain – through interventions or academic research or policy work or any combination of these efforts – the self-concept of older adults should be sensitive to life-course changes in the lives of seniors and the diverse experiences of older adults. I would suggest that the self-concept measures of mastery, self-esteem, and mattering may in fact work in tandem with one another to buffer the effects of stress on mental health in late life. I suggest the need to study how these self-concept measures may operate in a dynamic hierarchy where one part of the self may trump another depending on the circumstances at hand. For example, sense of mastery is shown to be highly predictive of mental health in late life, but mattering may be what "matters" most to mental health when circumstances are dire. That is, mattering may be a more "basic" or fundamental measure of the self that is increasingly pulled to the foreground as individuals age and try their best to protect their self-concept with each advancing year. To this end, the oldest-old may have a unique relationship to sense of mattering.

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Chapter 10
It's Tough to Cope in Rural Mali: Financial Coping Style, Mastery, Self Confidence, and Anxiety in a Bad and Worsening Socioeconomic Environment

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Concerns over a series of "differences" have been central to Leonard Pearlin's research and thought. Throughout his career, his focus has been on the different ways in which different kinds of people deal with the different stresses that result from different types of strain (Pearlin 1989; Pearlin et al. 1981; Pearlin and Schooler 1978). A particular focal point of his research and thought has centered on the effects of different mechanisms for coping with the stresses brought on by these strains on individuals' psychological well being (Pearlin and Schooler 1978). Early in his career, Pearlin was also the first author of the first paper (Pearlin and Kohn 1966) that specifically aimed at examining the cross-cultural validity of the hypotheses about the effects of social-structurally determined environmental conditions on individuals' orientations and values – hypotheses based on differences in orientations and values among U.S. social strata differing in their requirements for job success (Kohn 1963).

In this paper, we follow up on all of these concerns. We do so using data from a two-wave longitudinal study conducted in rural Mali in 1996 and 2004. With these data we examine how, in a cultural milieu decidedly different from those that exist in both industrial and post-industrial societies, individuals reacted psychologically, not only to an initially high level of economic strain, but also to an increase in economic strain between the two waves.

In the rural Malian context, the level of strain and stress involved in acquiring the bare necessities for simple survival are substantially greater than that faced by

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the vast majority of Americans. In 2002, during the time period of our study, Mali ranked 153rd out of 162 countries on the United Nations Human Development Index (United Nations Development Programme 2006); 72.8% of the population lived below the poverty line; 75% were illiterate, 66% were under 26 years of age; and infant mortality was 123 per 1,000, (USAID 2003).

Our basic hypotheses, which, as we shall see, are generally supported, are based on the premise that individuals living in such extreme poverty have relatively little control over their lives and their environment. We posit that the nature of the relationships between a sense of mastery (i.e., the opposite of fatalism), on the one hand, and anxiety and self-confidence on the other, is a function of such control. In environments where one has such control, increased mastery should be associated with decreased anxiety. In contrast, in situations where one's efforts to control the environment are consistently thwarted, mastery might be expected to be positively related to anxiety.

In addition, we investigate how the relationship between mastery and anxiety can be affected by the type of coping mechanisms employed. To this end, we examine two kinds of financial coping: problem-focused and emotion-focused. Problem-focused coping involves addressing the problem that underlies a stressful situation; emotion-focused coping involves managing and lessening one's emotional distress (Lazarus and Folkman 1984). Problem-focused coping is often found to be an adaptive way of dealing with stressors (Lazarus and Folkman 1984), because it reflects active and potentially effective means of removing the stressor itself. In contrast, the more passive strategies associated with emotion-focused coping are considered maladaptive in the long run, because they do nothing to eliminate the causes of stress. In support of this view, research using a U.S. sample has demonstrated that problem-focused financial coping is associated positively with mastery (i.e., non-fatalism) and negatively with psychological distress (e.g. anxiety); in contrast, emotion-focused financial coping is not associated with mastery and is positively associated with psychological distress (Caplan and Schooler 2007). Nevertheless, we hypothesize that, as circumstances become uncontrollable, problem-focused coping can become increasingly maladaptive. When active efforts to eliminate an uncontrollable stressor backfire, stress can be exacerbated. In uncontrollable circumstances, passive measures – for example, re-construing a harmful stimulus as benign – may actually be more effective than active measures at reducing stress (Lazarus and Folkman 1984).

Here, we examine the relations among anxiety, mastery, and financial coping style in Mali, where the environment is notably less tractable than it is in the United States. We address the following core questions:

1. What is the relationship between mastery and anxiety in Mali?
2. How are emotion-focused and problem-focused financial coping related to mastery and anxiety in Mali?
3. What happens to these relationships when an economically poor environment becomes even harsher?

The Survey

Sample

The first wave sample (1996–1997) of 1,002 respondents (16–45 years of age, 501 males, 501 females) was drawn equally from the Peuhl, Dogon and Bozo ethnic groups living in the Bandiagara administrative circle in the Mopti region of the Malian Sahel. The Peuhl are primarily herders, the Dogon farmers, and the Bozo fisherman and ferrymen. Villages with heavily visited tourist attractions, or whose inhabitants did not speak the primary language of their ethnic group, were excluded. Potential sample sites for each ethnic group were stratified in terms of population (i.e., towns of approximately 10,000 inhabitants, large villages of more than 1,000, small villages with less than that number). In order to get some index of exposure to western society, the sites were also stratified in terms of whether they were more or less than 3 km from a road or large river. Within these constraints, sites were chosen for their apparent representativeness. At each site, the respondents were chosen at random based on Malian census data. In 2003–2004, when the second survey wave was carried out, 972 (97%) of the original respondents were located. Of these, 51 (5%) were dead. All 921 respondents found alive were interviewed (92% of the original sample).

The US sample, which we compare to the Malian one, is the 1974–1994 sample of the NIMH Section on Socio-environmental Studies' longitudinal investigation of the psychological effects of occupational conditions (Schooler et al. 1999, 2004). It consisted of 351 men and 355 women. The men in the sample were essentially representative of those men, from the 1964 sample of the Kohn-Schooler longitudinal study of the psychological effects of occupational conditions (Kohn and Schooler 1983), who were under 65 in 1974 and were living in 1994. The 1964 Kohn-Schooler sample was representative of all men in the U.S. then employed in civilian occupations (Kohn and Schooler 1983). The 1994 sample of women consisted of the surviving wives of the 1974 sample of men. These women were first interviewed in 1974 (for a complete description of the sample, see Mulatu and Schooler 2002).

Interview

The Malian interview was developed in English and then in French. The French version was then translated into the Dogon, Peuhl, and Bozo languages by professional linguists who were native speakers of each language. The local language versions were then back translated, extensively pre-tested and modified where needed, with the linguists' help. The psychological indices are based on questions that are direct translations of items from the interview used by Schooler et al. (1999, 2004).

The Malian measures relevant to the present paper are: financial strain, anxiety, self confidence, mastery, emotion-focused financial coping, and problem-focused financial coping. Each is based on a statistically satisfactory confirmatory factor analysis (CFA) using Mplus (Muthén and Muthén 1998). The latent factors and their loadings are presented in Table 10.1. The comparable U.S. latent factors (available on request) on which the Malian ones are based use substantively the same items.

Table 10.1 Indicators and standardized loadings on latent factors from confirmatory factor analyses of anxiety, self confidence, mastery, emotion-focused financial coping, and problem-focused financial coping

Indicator	Wave 1	Wave 2
Anxiety		
1. About to go to pieces	0.607	0.335
2. Downcast and dejected	0.687	0.473
3. Anxious/worrying about something	0.433	0.345
4. Uneasy without knowing why	0.503	0.419
5. So restless that you can't sit still	0.538	0.494
6. Can't get rid of thought/idea	0.390	0.385
7. Bored with everything	0.607	0.474
8. Isn't much purpose to being alive	0.569	0.374
Self confidence		
1. Positive attitude toward myself	0.316	0.382
2. Person of worth, equal with others	0.766	0.657
3. Able to carry out my plans	0.699	0.546
4. Do most things as well as others	0.335	0.261
Mastery		
1. What happens is the result of own decisions vs. uncontrolled things	0.753	0.896
2. To blame for your problems	0.280	0.165
3. When things go wrong, is your own fault	0.375	0.478
Emotion-focused financial coping		
1. Think of others worse off	0.852	1.000
2. Shouldn't worry about money	0.235	0.387
3. Think about more important things	0.635	0.801
4. It is the will of God	0.336	0.466
Problem-focused financial coping		
1. Borrow money	0.471	0.791
2. Try to economize/save	0.591	0.849
3. Ask for help from parents	0.264	0.467

Note. Each latent factor was derived from a separate confirmatory factor analysis. Standardized loadings shown are all significant at $p \leq 0.001$. Items shown are excerpts of the complete original item wording

Findings

The Relations Between Anxiety and Mastery

Table 10.2 compares the Malian and American inter-correlations among the central psychological variables of mastery, self confidence, and anxiety. In this table, the over-time correlations are on the diagonal, the Wave 1 inter-correlations below the diagonal and Wave 2 inter-correlations above the diagonal. Strikingly, the overtime correlations for these psychological variables are considerably lower for the Malian than the U.S. sample. The lowest U.S. overtime correlation is 0.48 for self confidence. In Mali, only mastery, with an overtime correlation of 0.12, even achieves significance. As we shall see, these low overtime psychological correlations are, at least in part, an outcome of the interplay of the socio-economic and psychological processes on which this paper is focused. Most directly relevant to our present concerns, however, is the finding that in Mali, unlike the U.S., there is a positive correlation between mastery and anxiety. Furthermore, this correlation is even greater in Wave 2 than in Wave 1.

Our answer to the first question, therefore, in its briefest form, is that in a harsh, generally intractable environment in which there is relatively little that one can do to improve one's (often marginal) lot in life, holding onto the belief that one is responsible for one's fate leads to anxiety; lifting the burden of responsibility for one's fate by relinquishing the belief in one's mastery of the environment reduces anxiety.

Our respondents reported much greater levels of financial strain for Wave 2 than they had for Wave 1 (see Fig. 10.1), indicating that the economic environment became even more difficult and less easy to deal with in Wave 2 than it had been in Wave 1. We cannot be sure of all the circumstances that led to our respondents'

Table 10.2 Inter-correlations and stability among mastery, self-confidence, and anxiety in the US and Mali

US wave 1\2	Mastery	Self-confidence	Anxiety
Mastery	**0.60*****	*0.15**	*−0.14**
Self-confidence	0.15*	**0.48*****	*−0.60****
Anxiety	*−0.14**	*−0.43****	**0.61*****
Mali wave 1\2			
Mastery	**0.12*****	*−0.46****	*0.59****
Self-confidence	0.08	**−0.01**	*−0.75****
Anxiety	0.31***	−0.19***	**0.03**

Note. Over-time correlations are on the diagonal in boldface. Wave 1 inter-correlations are below the diagonal, and Wave 2 inter-correlations are above the diagonal in italics

*$p<0.05$, ***$p<0.001$

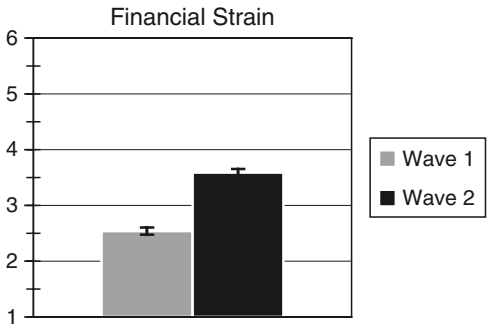

Fig. 10.1 Changes in self-reported financial strain across waves. (Error bars represent 95% confidence intervals.) All differences shown are significant at $p<0.01$. On the *y*-axis is a weighted average of the latent factors' corresponding items, scaled to reflect factor scores on the original 7-point item Likert scales (for ease of interpretation and comparison)

economic decline between our two survey waves. Nevertheless, discussions that we conducted with Malian social scientists and Malian government officials, as well as focus groups with Malians in economic circumstances not very different from those of our respondents revealed that they were all in agreement about the negative economic impact of:

1. increased drought;
2. decreased opportunity to migrate for paid work, due to the political problems and anti-foreigner sentiment in the Ivory Coast;
3. governmental decentralization. Although "well-meaning", governmental decentralization of planning, services and tax collection resulted in fewer available local government resources. If locally elected officials tried to impose and collect taxes from their constituents, they were unlikely to be re-elected. Local political considerations also often constrained elected politicians from effectively using the tax money that was collected.

As economic conditions apparently declined during the period between the two waves, changes arose in the psychological characteristics of the respondents. Their levels of mastery and self-confidence decreased, while the levels of anxiety increased (see Fig. 10.2). More critically, the positive relationship between feelings of mastery and anxiety increased. At the time of the first wave, economic conditions were apparently not so harsh that the belief that one had some control over, and hence responsibility, for one's circumstances led to anxiety. By the time of Wave 2, however, socioeconomic conditions had apparently gotten so much worse that maintaining a sense of mastery led to increased anxiety. One could only retain the belief in mastery at the cost of increased anxiety over one's lack of success in dealing with a difficult situation that one felt one should be able to control.

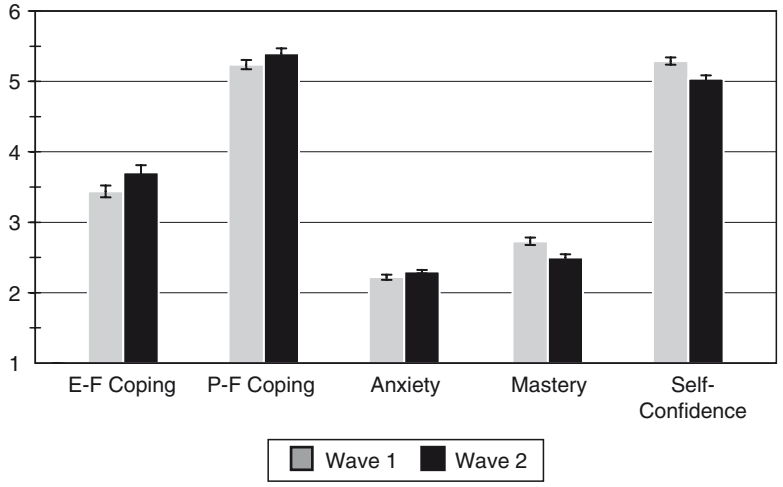

Fig. 10.2 Changes in coping and psychology across waves. (Error bars represent 95% confidence intervals.) All differences shown are significant at $p < 0.01$. On the y-axis is a weighted average of the latent factors' corresponding items, scaled to reflect factor scores on the original 7-point item Likert scales (for ease of interpretation and comparison). E-F Coping = emotion-focused coping, P-F Coping = problem-focused coping

The Relations Among Coping, Mastery, and Anxiety

To further understand what had taken place, we tested a path analytic model (see Fig. 10.3) that examined the effects of mastery and problem- and emotion-focused financial coping on anxiety in each wave (using SEM-based factor scores for each of the concepts). In this model, we also tested whether the interactions between mastery and each type of coping predicted anxiety in each wave. In examining the effects of type of financial coping on anxiety, we see evidence of a shift between the two waves in the relative efficacy of each type of coping. In Wave 1, problem-focused financial coping seemed to work: it was associated with lower levels of anxiety (see Figs. 10.3 and 10.4). In the more difficult times of Wave 2, however, problem-focused financial coping apparently ceased to work and, in fact, was associated with substantially higher anxiety (Figs. 10.3 and 10.5). The findings for emotion-focused financial coping are almost the reverse. In Wave 1, where problem-focused financial coping seems to have worked, emotion-focused coping was associated with increased anxiety (Fig. 10.3). In the deteriorating conditions of Wave 2, where problem-focused financial coping apparently ceased to work, emotion-focused financial coping seems to have alleviated anxiety.

There were no significant interaction effects of mastery and emotion-focused coping. However, interactions between mastery and problem-focused financial coping are significant at both waves and their effects on anxiety are shown in Figs. 10.4 and 10.5. In both waves, for those who rely heavily on problem-focused financial

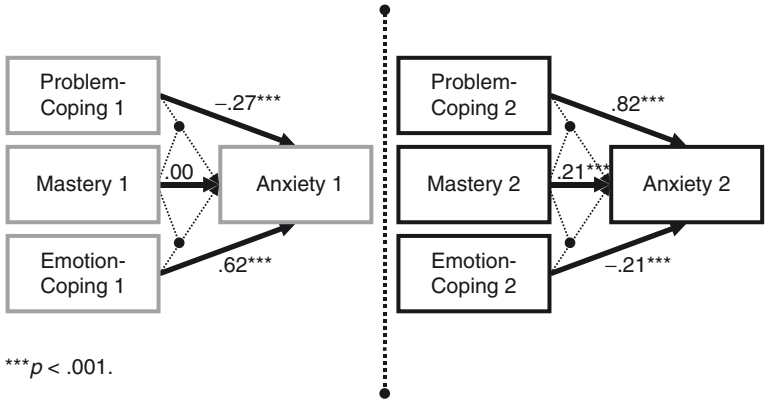

Fig. 10.3 Path analysis predicting anxiety as a function of mastery, problem- and emotion-focused coping, and the interactions between mastery and each type of coping. Interactions are represented by *dotted lines*

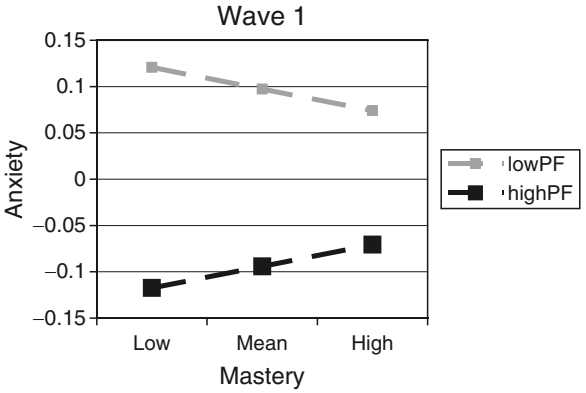

Fig. 10.4 Effects of mastery on anxiety as a function of problem-focused coping, in Wave 1. lowPF = problem-focused coping at –1 SD. highPF = problem-focused coping at +1 SD. Mastery is plotted at –1 (Low), 0 (Mean), and +1 (High) standard deviations from the mean

coping (relative to those who use it much less) mastery has a stronger positive correlation with anxiety. These significant interactions strongly support our contention that problem-focused coping is counterproductive in uncontrollable situations. When mastery is associated with strong (problem-focused) attempts to control one's (uncontrollable) environment, increasing levels of mastery are linked to increasing levels of anxiety. This positive mastery-anxiety relationship, however, is reduced as people make fewer attempts to cope in a problem-focused manner and are thus less likely to have their perceived sense of mastery frustrated by their problem focused efforts.

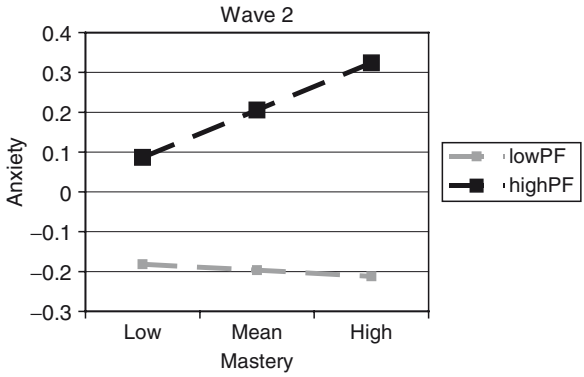

Fig. 10.5 Effects of mastery on anxiety as a function of problem-focused coping, in Wave 2. lowPF = problem-focused coping at –1 SD. highPF = problem-focused coping at +1 SD. Mastery is plotted at –1 (Low), 0 (Mean), and +1 (High) standard deviations from the mean

In both interview waves, higher levels of financial strain in our Malian sample are linked to higher levels of emotion-focused financial coping. Problem-focused financial coping, on the other hand, is not linked significantly to financial strain in the first wave. By the time of the second wave, however, economic conditions had apparently so deteriorated that financial strain and problem-focused financial coping became significantly positively related. What we cannot tell from the available data is the true direction of causal influence between financial strain and problem-focused financial coping. On the one hand, this positive relationship between problem-focused financial coping and financial strain may have come about because, under the quite harsh economic conditions of Wave 2, high levels of financial strain led people to engage in problem-focused financial coping. On the other hand, because it often may not work in such economically difficult times, the use of problem-focused financial coping may actually have been a cause of increased financial strain.

Conclusions

Our findings indicate that in Mali, as opposed to the U.S., the feeling of mastery (i.e., the belief in the likelihood of being able to have some control over one's environment), is positively related to anxiety. This initially counter-intuitive positive relationship between feelings of mastery and feelings of anxiety seems to have occurred in socio-economically hard-pressed rural Mali because believing that one can exert control over one's environment in such circumstances implies that one should be able to take action to ameliorate one's condition. Consequently, remaining in dire straits is anxiety-inducing evidence that one has not acted appropriately and effectively.

As we have noted, the fact that the positive relationship between mastery and anxiety became even stronger at the time of the second wave, when the economic situation became even worse, would seem to be a strong support for this explanation.

In terms of the effects of coping on anxiety, our causal models indicate that the effects of each type of coping differed in each wave. Problem-focused financial coping decreased anxiety in Wave 1, but actually increased levels of anxiety in the notably more difficult times characterizing Wave 2. Under such circumstances, attempting to cope by undertaking behaviors focused on the problem is linked to greater anxiety – especially for those individuals who are higher in mastery. On the other hand, resorting to emotion-focused financial coping in Wave 1, when our evidence indicates that problem-focused coping may actually have worked, appears to have been counterproductive. Emotion-focused financial coping at Wave 1 was associated with higher anxiety levels. In the more dire economic circumstances of Wave 2, in which problem-focused financial coping actually hurt rather than helped, emotion-focused coping did seem to have played an anxiety-reducing role.

There is other evidence that the choice or effectiveness of problem- and emotion-focused coping depends on whether people's actions can affect their fate. Among Israeli bus commuters, *problem-focused* coping strategies were related to *increased* anxiety about terrorist attacks; *emotion-focused* coping had a negative, although non-significant association with such anxiety (Gidron et al. 1999). Among Israeli children in bomb shelters during the Persian Gulf War, *emotion-focused* coping was related to *less* postwar stress than was *problem-focused* coping (Weisenberg et al. 1993). Among Americans, psychological symptoms arising from both major life events and daily hassles were better when problem-focused coping was used with controllable events and emotion-focused coping was used with uncontrollable events (Forsythe and Compas 1987). Similarly, Caplan and Schooler (2007) found that in an American sample, lower socioeconomic status was associated with greater use of emotion-focused financial coping and lesser use of problem-focused financial coping; the effect involving problem-focused coping was mediated entirely by self-confidence and fatalism. These results suggest that even in the U.S., individuals who have little control over their lives (or little perceived control) tend not to rely on problem-focused coping.

At the most general level, our findings indicate that differences in the ability to obtain necessary resources from one's environment can dramatically change the relationships among strains, coping, and feelings of mastery, self confidence and anxiety. Such differences in the levels of socio economic strain can alter the relative effectiveness of different coping mechanisms, so that the same type of coping strategy leads to different outcomes in different circumstances. Our findings further suggest that the behavioral and psychological effects of socioeconomic change may not only reflect cross-societal differences, but can also occur within a society. Such effects of socioeconomic change can, in fact, lead to dramatic changes within individuals. In the present case, our two interview waves spanned major societal socioeconomic changes in Mali – changes through which a tough socio economic environment became tougher and more so for some individuals than for others. These intra-societal changes contributed to striking changes in individuals' economic standing and circumstances, as well as to changes in the interrelationships among

types of coping effort, feelings of mastery and psychological distress. All of these changes played a part in bringing about the exceptionally low levels of over-time stability in our Malian respondents' modes of coping and feelings of mastery, self-confidence and anxiety.

While some of the Malian findings reflect findings from more economically developed countries, many of them differ sharply. What can these Malian findings tell us about the interrelationships among mastery, self-confidence, coping style and anxiety in more economically developed countries? In terms of both material and financial resources, the life circumstances of Malian respondents are quite different from those of most people in industrial and post-industrial societies. The margin for error that would endanger survival is much smaller for the respondents in rural Mali than it is for the respondents in post industrial America. Consequently, it is unclear what lessons from our Malian sample we can directly apply to populations from North American or other economically developed countries.

In terms of the psychological stability of personality characteristics over time, we have found that the stability was strikingly lower in Mali than in the U.S. Nevertheless, as Kohn et al. (1997) have shown in their studies of the psychological effects of dramatic socioeconomic change on individual psychological functioning in Poland and Ukraine, major social changes that notably and differentially affect different segments of society can dramatically decrease the overtime stability of the otherwise relatively stable psychological characteristics. Given the recent economic downturn in the U.S., we cannot say with any certainty that it is only those in lower socioeconomic status positions who will be subject to such dramatic psychological change. Nevertheless, it seems likely that those in social status positions commanding few socioeconomic resources would be more likely than those in relatively well-off socioeconomic statuses to make the kinds of interrelated shifts in coping styles and levels of mastery, self-confidence and anxiety we found in Mali, if societal changes still further reduced their already marginal chances for economic viability. The processes that we have described are not necessarily one-way. In the unlikely occurrence that the socioeconomic resources of those in originally economically bereft social statuses markedly improved, it would seem quite plausible that for these individuals, levels of anxiety would decline, levels of self-confidence and mastery would go up, problem focused coping would increase, and the correlation between mastery and self-confidence would rise.

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Chapter 11
Stress Valuation and the Experience of Parenting Stress in Late Life

Alex Bierman

Pearlin's stress process model serves as an organizing instrument for the study of mental health by delineating the pathways by which stress is both created and subsequently influences mental health. In its most recent iteration (Pearlin 1999), the model emphasizes the sociological study of stress by bringing attention to the way in which social status is endemic to each aspect of the stress process. As Pearlin (1999) states, "the social and economic statuses of people are imposed on the stress process. It is these characteristics that make the model and the orientation to stress research it embodies quintessentially sociological" (p. 397). Thus, core social statuses such as race, class, and gender are seen as both conditioning exposure to stress, as well as the direct and indirect paths by which stress influences mental health.

Although social statuses are central to a sociological perspective, such statuses are only one aspect of the socially-situated experience of stress. In fact, across Pearlin's work there is a wider and more nuanced examination of different aspects of socially-based influences on the stress process. In an earlier work, Pearlin highlighted an additional set of socially conditioned factors, on which it was argued the stress process was contingent. Pearlin argued that for researchers who seek to understand the experience of stress, the *values* of individuals must also be considered. According to Pearlin (1989, p. 249), "By values I refer to what is defined socially as good, desirable, and prized or something to be eschewed." As these are defined socially, values are conceived of in explicitly social, rather than psychological terms. These socially constituted judgments are critical in the process of stress formation because, "Values, I believe, regulate the meaning and the importance of the experience" (Pearlin 1989, p. 249). Thus, socially-constituted values serve as a regulating agent by helping to define both whether an experience will be seen as noxious or adverse, as well as the importance of the experience.

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The purpose of this paper is to call attention to the process by which socially-based values lead individuals to experience social circumstances as both salient and stressful, a process I refer to as *stress valuation*. To underscore the sociological nature of stress valuation, I synthesize Pearlin's focus on social values with insights from social constructionist and life course perspectives. A social constructionist perspective is useful for emphasizing the social nature of stress valuation because this perspective underscores the way in which judgments of worth and meaning are derived from individual embeddedness in social groupings (Holstein and Gubrium 2007). A life course perspective is also helpful for understanding the process of stress valuation because, rather than viewing development as a series of concrete and chronologically-delimited stages, a life course perspective views development as a fluid trajectory which occurs throughout one's life (Elder et al. 2003). Thus, an integration of a life course perspective with the concept of stress valuation suggests that values may continue to play an important role in shaping the experience of stress across the life course because individuals face new developmental challenges and opportunities as they age.

To demonstrate the importance of stress valuation for the stress process, I focus on a stressor that is likely indicative of a chronic, ongoing situation (Wheaton 1999). A focus on an ongoing, continual stressor demonstrates the potential importance of stress valuation by showing that the process of stress valuation can help explain how a stressor can continue to influence mental health, even if it has been some time since the stressful experience was initiated. The stressor of interest in this research is negative treatment of parents by their adult children. This stressor is of focal interest because aversive relationships between parents and their adult children are likely reflective of patterns of interactions that have been established and concreted for years if not decades. I therefore, concentrate on a stressor that is not only chronic, but likely reflective of a long-standing social situation. Further, by focusing specifically on older adults, I focus on a period of life in which active parenting has usually subsided and one would expect fewer influences of parenting-related strains on mental health. A focus on chronic late life parenting strains therefore presents a vivid demonstration of the potential potency of stress valuation by showing how stress valuation may influence mental health even when there might be few expectations of these effects.

Social Values and Parenting Stress in a Life Course Perspective

In comparison to the role of social status contingencies in the stress process, research has been slower to examine the role of social values in the stress process, but the question of values has not gone completely unnoticed. Research particularly shows that values may be important for conditioning the stress and distress that are related to family experiences. For instance, Simon (1997) found that socially defined values regarding the family helped to explain gender differences in psychological distress. Similarly, Zhan (2006) found that, independent of time spent on

care, values of filial obligation were related to greater depression among Chinese caregivers. Especially important may be the way in which the relationship between stressful family experiences and distress are contingent on values. Ulbrich (1988) showed that, among employed spouses, a husband's low earnings were much more strongly related to depression when the husband also was not in favor of the wife's employment (see also Liu and Kaplan 2001). During times of potential stress within the family, values may influence the extent to which stress is experienced or influences distress.

Lack of attention to the role of values in the stress process is likely due in part to difficulty in examining how values are socially constituted to influence the stress experience. Guidance is offered, though, by a theoretical perspective which emphasizes the social context of daily life, a social constructionist perspective. From a social constructionist perspective, "there is no way of experiencing the 'real relations' of a particular society outside of its cultural and ideological categories" (Hall 1985, p. 105). This view is substantiated by empirical research showing that understandings of the relationship between self and others are culturally defined (Markus and Kitayama 1991). Thus, how people understand their experiences in social life is fundamentally founded within the social milieu in which these experiences occur. Further, this perspective locates the social groups to which one belongs as a primary reservoir of materials of understanding. In the words of Holstein and Gubrium (2007, p. 336), "The vocabularies learned and language used by any particular group structure how their members conceive of reality". Hence, the social groups to which individuals belong provide the building blocks by which social experiences are understood by the individual as stressful. By focusing on the values gained through involvement in social groups, we can understand how values are socially constituted to structure experiences as both salient and averse.

One of the most important of the groups from which the materials of stress valuation are likely to arise is the religious group. Religion is a fundamental basis for socially constituted understandings of reality because religion not only assists in the definition of experience, but also in reifying the socially constructed products of society (Berger 1967; Hamilton 1995; Marx 1975). Religion accomplishes this task by defining the constructions of society as consisting of the sacred rather than the profane (Durkheim 1964). This definition process links these constructions to the preternatural and the eternal, thereby reassuring individuals that ephemeral human constructions in fact have a concrete, consistent character (Berger 1967).

It is because religion provides a fundamental basis for the definition of reality, that religion also becomes a primary source of the values that define and place salience on experiences as stressful. That which is defined as sacred is given both importance and worth; that which is defined as profane is considered without this special status (McGuire 1997). Religious beliefs therefore serve as a basis for values by identifying some social objects as worthy and important, while diminishing or derogating others. By extension, social experiences that violate religiously-based values are inherently stressful because they constitute a violation of the sacred by the profane, and therefore threaten not only socially-constituted understandings of propriety and worth, but also religiously substantiated understandings of reality.

The inherent stressfulness of the violation of the sacred can be seen in the work of Pargament et al. (2005), which has shown that negative life events are more strongly related to psychological distress when they are associated with desacralization.

More recent research in the sociology of religion has typified religious-based understandings of reality in terms of *moral cosmologies* (Davis and Robinson 1996).[1] These cosmologies are a complex of beliefs regarding morality, religious scriptures and teachings, and the role of the divine in everyday life. Of particular interest is an orthodox cosmology. An orthodox cosmology "views God as the ultimate judge of good and evil, regards sacred texts (and church teachings derived from these) as divinely revealed and hence inerrant and timeless, and sees God as watching over, affecting, and judging people's daily lives" (Starks and Robinson 2007, p. 19). This world-view leads to values which favor upholding "timeless" moral standards, as well as obedience to these standards and higher authority (Starks and Robinson 2007). Thus, social experiences that are seen to violate obedience, hierarchy, and tradition are likely to be especially stressful for individuals who hold an orthodox moral cosmology, because such experiences violate values which are linked to the sacred.

An orthodox cosmology is of special interest in this research because this cosmology values the family above all other institutions but the church itself. The family plays this central role because it forms "a bulwark against secular encroachment, a sheltering canopy" (Davis and Robinson 1996, p. 761). Because the family is strongly considered a primary site of expression and transmission of an orthodox moral cosmology between generations, orthodox values of traditionalism, authority, and hierarchy are used as a basis for valued behavior within the family (Davis and Robinson 1996). Parenting values underscore obedience by children over multiple other values, including children thinking for themselves, working hard, and helping others (Starks and Robinson 2007; see also Ellison and Sherkat 1993). Negative treatment by offspring may therefore be particularly stressful for orthodox parents because the disobedience and disrespect inherent in such interactions will be viewed as not simply insulting the parent, but also transgressing values of appropriate behavior that are linked to sacred understandings of reality.

Research on moral cosmology and parenting values can be further placed within a life course perspective. This perspective facilitates an understanding of how parenting values associated with an orthodox cosmology may be particularly

[1] While focused on religious-based values gained through socialization, this research does not directly examine how these values are derived from religious socialization. This is primarily because the question of how religious membership influences facets of belief that comprise moral cosmologies is a topic outside of the purview of this paper. However, empirical research on facets of belief which contribute to moral cosmologies support the social basis of these belief systems. For instance, religious involvement has been shown to support beliefs that a higher power is actively involved with the lives of mortals (Schieman and Bierman 2007), and the social interactions which occur through religious involvement are responsible for this support (Krause 2007; Nelson 1997).

important even when a parent has entered late life and his or her children are adults. Violation of sacredly-held values of obedience and hierarchy by offspring may be stressful throughout the life course, but these violations may *increase* in salience as parents reach late life. For orthodox parents who value order and tradition, the role of elder is likely to be at the paramount of the family hierarchy because this role is an embodiment of accrued knowledge and authority. As a result, actions by their grown children that engender perceptions of disrespect or disregard for parents' thoughts and feelings are likely to be particularly stressful for orthodox cosmologists because such actions are being committed against an emblem of authority and tradition. Further, because these actions are being committed by an adult, there is a greater finality to them (Milkie et al. 2008). As a result, even if negative treatment by one's children is reflective of long-standing patterns of interactions, for orthodox cosmologists in late life, this negative treatment may become more salient and transgressive when committed by adult children, in turn creating increased stress.

Furthermore, in accordance with a life course perspective's emphasis on development as continuing across the life course, research suggests that, as adults enter late life, they typically experience a host of life course transitions that likely add to the salience of orthodox parental values. Late life is often a time of increasing physical frailty and limitations in abilities to perform daily tasks (Long and Pavalko 2004), and these increasing physical limitations are often paired with increasing social isolation, as the size of one's social network and frequency of contact within the social network diminishes (Ajrouch et al. 2001; Due et al. 1999; Morgan 1988). With alternative means of social resources diminishing, as they become more likely to need assistance in daily life, older adults are likely to depend more on their children for both social and instrumental support (e.g., Ikkink et al. 1999; Umberson 1992). It should be stressed that, even if the older adult does not experience a typical transition or turning point, it is likely that he or she is aware that these changes may be imminent or at least common (Neugarten and Datan 1973). Experiences of negative interactions with one's adult children will therefore tend to be viewed in the context of these trajectory-defining experiences, and this context will likely persist irrespective of individual experience with a specific transition.

A developmental experience that increases actual or potential dependencies on one's adult children is likely to sensitize values regarding family, obedience, and hierarchy, and also make conflict within parent-child relationships more salient. Further, values of authority, hierarchy, and obedience are likely to result in particularly strong expectations by orthodox parents that offspring will provide this care and support. As a result, disrespect or disobedience on the part of adult children may be seen by older parents with an orthodox cosmology as especially critical, because such treatment may be seen as signaling that a central repository of support and care may not provide these resources, or do so grudgingly at best. Hence, developmental transitions associated with late life are likely to especially increase the importance of obedience and authority by one's children among adults with an orthodox moral cosmology, and also increase the salience and negativity of actions by adult children that violate these values.

Summary

Overall, recent iterations of a stress process perspective have emphasized the socially-situated nature of stress by focusing on the way in which social statuses are endemic to each aspect of the stress process. Although not disregarding an emphasis on social statuses, Pearlin's work suggests that additional social factors may influence the stress process, and one of the most important of these is socially constituted values. I refer to the process by which social values lead individuals to experience social circumstances as both salient and stressful as stress valuation. To illustrate why a focus on stress valuation may be useful for further understanding the sociological nature of the stress process, I argue that stress valuation may help explain why a long-standing stressor continues to influence mental health. I focus on negative treatment by adult offspring and argue that a socially-constituted religious worldview – an orthodox moral cosmology – gives rise to values which will likely accentuate the stress that is experienced as a result of negative treatment by one's children. Furthermore, a synthesis of the concept of stress valuation with a life course perspective suggests that the role of family elder, as well as transitions that occur in late life, will intensify the influence of stress valuation specifically in late life. As a preliminary examination of these processes, I now turn to a longitudinal study of older adults.

Methods

Data

The data for this study are derived from in-person interviews first conducted in 2001 with a sample of people 65 years and older, residing in the District of Columbia and two adjoining Maryland counties, Prince George's and Montgomery. Consistent with the purpose of the project to investigate status inequality and health disparities, the sample sought was socially and economically diverse. The three locales subsume this diversity.

Sample selection and recruitment began with the Medicare beneficiary files for the three areas. In addition to the names of all people 65 years and older who are entitled to Medicare, the files provided information about the race and gender of each beneficiary. The next step entailed selection from the large pool of potential participants. To maximize the social and economic diversity of the sample, a total of 4,800 names were randomly selected equally divided among the three locales, blacks and whites, and women and men, creating twelve groups containing 400 names each. In addition, to be eligible for inclusion in this sample, elders had to be living independently in one of the three locales under study, so that the goal in sample selection was to enlist a sample of 1,200 people living independently, with approximately 100 in each of the 12 groups. Approximately 65% of all eligible (i.e., living independently) respondents (1,741) who were contacted agreed to

participate, yielding a total of 1,167 cases. Although it was not the goal of the researchers to obtain a representative sample of older adults in these locales, the age distribution within the four gender-race groups was similar to the population from the 2000 Census (Schieman et al. 2006).

Following the first wave, respondents were surveyed four additional times, with the fifth wave coming five years after the first. Because data on some aspects of moral cosmology were gathered only in the fifth wave, this research examines change in anger between waves 1 and 5. Interviews after the first wave were shorter and conducted over the telephone. Sample size at wave 5 was 716 (a 61.35% retention rate). Given the advanced age of the sample and length of time between the first and fifth wave, this is a relatively strong retention rate. Because this research focuses specifically on parent-child interactions, analyses were limited to individuals with at least one living child throughout the study; in addition, because of the small number of non-Christians in the sample divided across other and no religions, these analyses are confined to Protestants and Catholics, with a dichotomous indicator of denomination included as a control. This produced an N of 492; 7 additional cases were deleted because information on the grouping variable – moral cosmology – was not available. Methods employed to address missing data and survey attrition are discussed below.

Focal Measures

Orthodox moral cosmology. A sufficient number of questions to measure moral cosmology were asked in the fifth wave of the ASH survey, including beliefs about a higher power's control over everyday life and beliefs about Biblical literalism. Measures such as these have been used in previous studies of moral cosmology (e.g., Davis and Robinson 1996; Starks and Robinson 2007). Beliefs about a higher power's control were measured using the sense of divine control scale, which was created to reflect an array of elements, including reliance, control, dependence, and guidance (Schieman and Bierman 2007): "You decide what to do without relying on God," "When good or bad things happen, you see it as part of God's plan for you", "God has decided what your life shall be", and "You depend on God for help and guidance" (see Schieman et al. 2005 for a description of the measure's item properties and other details). Responses to this scale were on a scale of 1 (Strongly disagree) to 4 (Strongly agree) (Cronbach's alpha = 0.84), with responses coded so that higher values indicated greater sense of divine control. Biblical literalism was a one-item measure adapted from the General Social Survey. Respondents were asked, "Which of these statements comes closest to describing your feelings about the Bible?" with three statements provided: "The Bible is the actual word of God and it is to be taken literally, word for word;" "The Bible is the inspired word of God but not everything should be taken literally, word for word;" "Or, the Bible is an ancient book of fables, legends, history, and moral precepts recorded by man." A dichotomous indicator of orthodox moral cosmology is based on agreement with both sense of divine control

and biblical literalism.[2] For the sense of divine control, agreement is indicated by a mean of 3 or greater, which corresponded to a score of agree.[3] Belief in biblical literalism was indicated by choice of the "word for word" statement. In the final sample, 123 parents (25.36%) indicated an orthodox moral cosmology.

Negative treatment by adult children. To examine negative treatment, parents were asked at wave 1 if it ever happened that one or more of their children, "Do not pay attention to your opinions" and "Look on you as 'old-fashioned' or out of date." Responses were on a scale of 1 (Never) to 4 (Frequently). While brief, this scale embodies the central qualities that cosmologically orthodox parents may find most disrespectful – disregard for tradition and a failure to acknowledge authority. In keeping with previous research on interactions with adult children, questions were asked of all children generally, because the research focuses on "the overall parenting experience of later life" (Umberson 1992, p. 667).

Anger. The outcome of psychological distress within this research is anger. Anger is of interest because older adults who experience increases in anger due to relationships with their children are subject to lives with greater tension, animosity, and emotional upset, demonstrating how effects on anger are critical for the quality of the psychological well-being of older adults.[4] Anger was measured using two

[2] It is important to emphasize that the measure of moral cosmology is not a psychological scale, in which it is typically assumed that an individual's responses to a number of indicators or questions indicate his or her standing on an underlying trait. Rather, since moral cosmology is a *complex* of beliefs, these beliefs *combine* to *form* a moral cosmology. One could in fact hold different beliefs about the Bible and God's agency in the modern world; it is when literalist beliefs of the Bible and beliefs in an agentic, controlling higher power are held in unison that they are indicative of an orthodox moral cosmology. That individuals could diverge in these two sets of beliefs is in fact indicated by an examination of this sample – almost 40% of parents in wave 5 who held literalist views did not have mean levels of agreement with sense of divine control, and over 27% of parents in wave 5 who did not hold literalist biblical beliefs had mean agreement with sense of divine control. It is for this reason that sense of divine control and beliefs in Biblical literalism were measured separately, and then agreement with both measures combined to form a dichotomous indicator of orthodox moral cosmology.

[3] While it is possible for respondents to not completely agree with all statements on the scale and still produce a mean of 3, a mean of 3 indicates that any lesser agreement was balanced out by stronger agreement on additional items, indicating a general state of agreement with beliefs in divine control.

[4] Before examining relationships between latent variables in structural equation models, it is critical to ensure that the estimation of the latent variables is consistent across time and between comparison groups. This consistency is called *factorial invariance*. Without factorial invariance, what would appear to be changes in anger over time or differences in effects between moral cosmology groups could be due to changes in how these latent variables are measured over time or differences between groups in how the latent variables are measured. Analyses indicated that measurement of all latent variables was invariant between moral cosmology groups, and anger was also invariant over time. In all invariance analyses, strong factorial invariance was examined, in which differences between not only factor to indicator loadings were tested, but also differences between the intercepts of these loadings (Conroy et al. 2003; see also Meredith 1993). Preliminary analyses of measures of additional aspects of psychological distress, such as depression and anxiety, indicated that these measures were not factorially invariant in the ASH data between the moral cosmology groups, and it is for this reason that these aspects of distress are not examined in addition to anger.

experiences commonly associated with anger – feeling angry and arguing with someone. Respondents indicated how frequently in the previous seven days they had experienced each of these from a scale of 1 (Never) to 4 (5 or more days).

Control Measures

Several social status variables, including age, race, education, and income, were controlled in the analyses. *Race* was coded as 0 = White, 1 = African-American. Education level was measured on a scale of 1 ("8th grade or less") to 6 ("college graduate or more"). *Household income* was measured by asking respondents to estimate their total household income in the previous year, with respondents selecting from categories with $10,000 intervals, starting with "less than $10,000" to "$100,000 or more." For 152 individuals, missing income data was imputed using responses from the second wave of data. *Age* was coded in years.

Family variables. It is likely that the frequency of negative interactions with children, as well as psychological well-being, will be affected by older parents' family social networks. Therefore, a series of controls were included to rule out spuriousness due to these family factors. *Frequency of contact with children* was controlled using two measures. One measure indicated visiting with one's children, as parents indicated how often they saw any of their children, while a second measure indicated frequency of contact over the telephone, with responses for both measures being, "Every day" (1), "Once or twice a week" (2), "Once or twice a month" (3), "A few times a year" (4), and "Less than once a year" (5). *Marital status* was coded as a series of dichotomous variables – divorced, widowed, and never-married – with the married as the reference group. *Number of children* at baseline was a count of the number of living biological or adopted children a respondent had at baseline. *Number of grandchildren* was a count of the number of grandchildren the respondent had at baseline; respondents with more than 14 grandchildren were recoded to have 14.

Social integration. Previous research argues that older parents with greater numbers of alternative social connections may depend less on their adult children (Milkie et al. 2008). Further, because differing moral cosmologies are indicative of different communal ideologies (Starks and Robinson 2007), it is likely that moral cosmology could be confounded with level of social integration. For these reasons, secular and religious social integration are controlled in the analyses. Religious integration is controlled by a measure of attendance at religious services and other religious meetings from a scale of 1 (Never) to 6 (Daily). Secular social integration is controlled by a similar measure in which the respondent indicated how often he or she attended a club or organization meeting.

Analyses

Analyses are conducted using structural equation modeling (SEM). In these analyses, *multigroup* structural models are tested. In a multigroup structural model,

structural paths between variables are constrained to be equal across different groups of interest; in an iterative process, each constraint is released, and a significant improvement in model fit (as indicated by the change in the model's chi-square value) is indicative of a group difference in the relationship. Because the interest of this research is on effects of negative treatment specifically in late life, a *lagged* relationship between negative treatment and anger is examined. Anger at wave 5 is regressed against negative treatment and the controls, while controlling for anger at wave 1. By using a lagged model approach, this research is able to examine the relationship between negative treatment and change in anger in late life.

All models were estimated using "full information maximum likelihood" (FIML) methods, which allow for unbiased, efficient parameter estimates in the presence of missing data (Allison 2003). However, FIML could not be used to account for survey attrition; such analyses would essentially have required inclusion of individuals for whom it was unknown as to whether offspring remained alive after attrition.[5] Therefore, to account for survey attrition, a hazard for attrition is included in all analyses. This hazard was created by using negative treatment, anger at baseline, and the baseline control variables in a probit regression to predict attrition, and then transforming the residuals of this probit model using an inverse mills ratio, in which the ratio of the standard normal probability density function and cumulative density function is applied to the residuals for each respondent (Sales et al. 2004). This variable is then used as a control in all analyses, thereby adjusting parameter estimates for biases due to attrition because of baseline characteristics.[6]

Results

The results of the structural models are shown in Table 11.1. Not shown in this table are covariances between baseline anger and negative treatment, negative treatment and the control variables, baseline anger and the control variables, and between errors for the same anger questions across the two time points. In the first model, all structural paths are constrained to be equal between the two moral cosmology

[5] In addition, FIML could not be used to account for missing data for moral cosmology, because moral cosmology was a grouping variable rather than a predictor. However, because only 7 cases were dropped due to data missing for moral cosmology, it is likely that little bias was created by dropping these cases.

[6] Factor scores were used for the baseline measure of negative treatment and baseline anger in the probit model of attrition. To reduce multicolinearity between the hazard for attrition and other variables in the main analyses, it is recommended that at least one additional variable which predicts attrition, but does not predict the outcome of interest, be included in the probit regressions (Sales et al. 2004). One-item measures of self-esteem, life-time discrimination, and an interviewer's rating of the respondent's understanding of the interview questions are used as instrumental variables.

Table 11.1 Influences on anger at Wave 5

	Constrained model	Constraints released
Model coefficients		
Negative treatment by adult children	0.109*	0.049/0.238***
Baseline anger	0.336*	0.394*
Gender	0.172*	0.170*
Race	0.035	0.059
Education	0.048*	0.044*
Income	0.015	0.013
Divorced	–0.092	–0.090
Widowed	–0.089	–0.077
Never-married	–0.331	–0.184
Religious attendance	0.014	–0.014/0.102*
Frequency of visits with children	0.008	0.007
Frequency of conversations with children	–0.042	–0.031
Catholic	0.045	0.076
Age	–0.014*	–0.010
Number of children	0.021	0.010
Hazard for attrition	0.752**	0.602*
Meeting attendance	0.028	0.018
Number of grandchildren	0.011	0.012
Model fit statistics		
Model χ^2	162.51*	149.17
Degrees of freedom	133	131
CFI	0.939	0.963
RMSEA	0.030	0.024
SRMR	0.030	0.027

Note: Metric coefficients are shown
For split coefficients, orthodox moral cosmology group is on right side
*$p<0.05$, **$p<0.01$, ***$p<0.001$ (two-tailed tests)
$N = 485$ (123 orthodox moral cosmology)

groups. This model indicates that negative treatment by adult children is positively related to change in anger ($b = 0.109$, $p<0.05$). This is in accordance with previous longitudinal analyses of these data using a previous follow-up wave (Milkie et al. 2008).

However, this does not indicate whether this relationship varies by moral cosmology group. To examine this question, constraints on the relationship between each variable and anger at wave 5 were sequentially released. This procedure indicated that releases on two constraints significantly improved model fit. One of these was on the relationship between negative treatment and anger at wave 5; intriguingly, the second also involved religion, as model fit improved significantly when the constraints on the relationship between attendance at religious services and anger was also released. Alternative analyses indicated that, even with the constraint on attendance released, model fit still improved significantly when the constraint on the relationship with negative treatment was released. Further, as can be seen in the

second model in Table 11.1, when both constraints were released simultaneously, the model fit was significantly improved (change in $\chi^2 = 13.332$, df = 2, $p < 0.01$). In addition, common recommendations for model fit indices are that the CFI should be at least 0.95, less than 0.05 for the RMSEA, and 0.05 or less for the SRMR (Byrne 2001). By these standards, the constrained model does not quite contain acceptable fit, but the model with the constraints released does, further supporting the release of these constraints.

Substantively, the release of the constraints indicates differences by moral cosmology group in the extent to which negative treatment is related to change in anger. Negative treatment is significantly and positively related to change in anger for individuals with an orthodox moral cosmology, but not others; further, for those with an orthodox moral cosmology, the size of this coefficient is more than doubled when compared to the constrained model, with a commensurate increase in the significance of the relationship ($b = 0.238$, $p < 0.001$). The analyses therefore reveal that, once the context of the moral cosmology in which this stress occurs is taken into account, what may appear to be a small but general relationship between a stressor and change in psychological well-being in late life is in fact a more specific but stronger relationship.

Discussion

In 1989, Pearlin restated the case for a sociological study of stress, arguing that, "Sociologists have an intellectual stake in the study of stress." At the same time, he took stress process researchers to task, stating that "those of us who are engaged in stress research are not consistently attentive to the sociological character of the field" (p. 241). Pearlin's goal, in both this and subsequent revisions of the stress process perspective, has been to demonstrate the inherently sociological nature of the stress process, and therefore its importance as a sociological topic of study. For Pearlin, the study of the stress process is inherently sociological because this study affords the opportunity to show how the "structured arrangements of people's lives" and the consequences of these arrangements influence well-being (1989, p. 241). With its most recent close focus on social statuses as endemic to each aspect of the stress process (Pearlin 1999), Pearlin's emphasis on the sociological nature of the study of stress is if anything intensified.

The study of stress valuation ties in closely to this overarching goal. The study of stress valuation shows how values which are socially derived condition the extent to which circumstances may be experienced as both salient and stressful. Consequently, the study of stress valuation broadens the sociological basis of a stress process perspective by demonstrating that there are additional social factors beyond social statuses in which the stress process is based. An inclusion of stress valuation within a stress process perspective therefore buttresses the sociological underpinnings of this perspective by calling attention to the multivalent character of the social context of the stress process.

Further, noting its potential for added understanding of the stress process, Pearlin has called for a "paradigmatic alliance" of life course and stress process perspectives (Pearlin and Skaff 1996). In demonstrating how a synthesis with a life course perspective can elucidate the continued potency of stressors, the study of stress valuation underscores the potential benefits of this paradigmatic alliance. One quandary that stress process research faces is in explaining how ongoing, chronic stressors may continue to influence changes in mental health. However, a synthesis of a life course perspective with the concept of stress valuation suggests that as individuals experience life course transitions, the degree to which one's values influence evaluations of salience and noxiousness of potentially stressful experiences may also change. This can be seen in this empirical example, where negative treatment was likely indicative of long-standing patterns of social interactions, yet a focus on values derived from an orthodox moral cosmology helped to explain how this stressor continued to influence distress. The shift to late life likely intensified expectations of fealty and obedience based on values of respect for hierarchy, authority and tradition derived from an orthodox moral cosmology, resulting in distress when negative treatment was experienced. This research therefore suggests that one way of emphasizing the social nature of the stress process is to explicate how social values may extend effects of long-standing stressors on mental health. A ripe topic for future research is to examine how transitions in other aspects of the life course may in turn lead stress valuation to revivify or prolong additional stressors.

A third benefit of the inclusion of stress valuation within a stress process perspective is empirical and pragmatic. Through the use of the concept of stress valuation, researchers can both reveal and specify the way in which stress is related to psychological well-being. The importance of stress valuation in providing this advantage is demonstrated in the empirical analyses in this paper. Previous research documents a longitudinal association between negative treatment and anger, but, when analyzed as a generalized effect, this relationship is relatively weak (Milkie et al. 2008). However, as the empirical analyses in this paper reveal, when the degree to which this relationship is contingent on moral cosmology is considered, it is found to be restricted to those with an orthodox moral cosmology, but to a much stronger degree. This pattern of results suggests that researchers should carefully consider the value context of stress experiences. Effects of stressors on distress may appear weak or non-existent when partial or zero-order correlations are considered, but a consideration of differences by values may reveal relationships with distress otherwise obscured.

At the same time, however, there is a potential pitfall in a move towards values. Pearlin (1989) clearly conceived of values as socially-based, and thus the inclusion of a focus on the role of values in the stress process is inherently sociological. However, if values are considered focally, it is possible that they may be treated as independent psychological units, rather than a social product. It is for this reason that a focus on moral cosmologies is useful within this research. An orthodox moral cosmology is the result of religious socialization and, as the crucible of values

which prize obedience, authority, and respect for tradition, a focus on an orthodox cosmology highlights the socially constituted nature of these values. Thus, by focusing on the cosmological framework which structures sets of values, this research centers on the social nature of stress valuation. Future research on stress valuation should therefore take care to underscore the sociological nature of stress valuation by delineating the social origins of the values under study.

One way to retain the emphasis on the inherently social nature of stress valuation is to merge this concept with a stress process perspective's current emphasis on social statuses. The argument that social statuses are endemic to each aspect of the stress process would in fact suggest that social statuses and the process of stress valuation may intersect. The size of the sample in the current research prohibited examining these contingencies, but Pearlin's (1975) previous research demonstrates the potential importance of social statuses for stress valuation. Pearlin examined the occupational status of fathers of marital partners, and found that spouses who married someone from a lower socioeconomic background reported greater marital strains, but values played a crucial role in the creation of these strains. Differences in status backgrounds were associated with marital strains only among those spouses who placed a greater emphasis on status advancement. Thus, socioeconomic origins and values interacted to create stress in individuals' lives. Pearlin's work therefore suggests that researchers should examine how additional aspects of social status and values may intersect to create stress. In the current research, for example, differences by moral cosmology in values of patriarchy may lead to gendered differences in the extent to which negative treatment by adult children influences psychological distress among parents, and these gender differences may occur based on the gender of parent or child.

It should also be emphasized that Pearlin's (1975) work contains the foundation of the importance of a life course perspective for the process of stress valuation. Pearlin demonstrates that the extent to which values structure the experience of stress in adult life is based in part on the socioeconomic origins of the life course. Hence, although the current research has focused on development during adult life, Pearlin's research also suggests that early life circumstances structure how values shape the experience of stress later in the life course. Pearlin's work therefore not only underscores the potential benefits of greater attention to the role of values in the stress process, but also points to a need to expand the emphasis given to a life course perspective in the study of stress valuation.

Readers should also observe that this paper presents only a preliminary examination of the importance of stress valuation. The primary intention of this paper has been to use Pearlin's work as a basis to reintroduce and clarify the argument that social-based values may be an important but understudied aspect of the stress process. Although an empirical example is provided which supports the arguments of the importance of stress valuation, clearly much more research is needed, including examining a wider variety of stressors across a longer part of the life course. More direct consideration of how values shape the stress process is also warranted, but only to the extent that the focal values are considered as a consequence of the social framework that molds them.

Conclusion

Pearlin's work on mental health has repeatedly emphasized the sociological nature of the study of stress. Although recent iterations of a stress process perspective emphasize the way in which social statuses are endemic to each aspect of the stress process, within his body of work there are wider and more nuanced ideas of the way in which stress is socially situated. One of these is that social values regulate the evaluation and salience of an experience. This paper suggests that attention to the process of stress valuation has much potential benefit for a stress process perspective, including bolstering the sociological emphasis of a stress process perspective, helping to explain how long-standing stressors continue to influence mental health, and facilitating additional empirical clarification regarding the strength and specificity of the effects of stressors. Although this paper suggests that the concept of stress valuation could help enrich a stress process perspective, researchers should also take care in the future to take the social basis of values into account, or risk reducing sociological processes to individual psychological elements.

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Chapter 12
Stress Process Applications in Child Victimization Research

Heather A. Turner

The victimization of children remains a substantial problem in the United States. Past studies have documented both a high prevalence of victimization exposure (Finkelhor and Dziuba-Leatherman 1994; Hashima and Finkelhor 1999) and damaging mental health consequences of victimization among youth (Augoustinos 1987; Beitchman et al. 1991; Kaufman 1991; National Research Council 1993; Wolfe 1987).

The stress process model developed and expanded by Leonard Pearlin and colleagues (Pearlin 1989, 1999; Pearlin et al. 1981) is implicit in much of the research on child victimization. Victimization experiences, such as maltreatment by parents, physical and emotional bullying by peers, and sexual assault represent important sources of stress for youth, often having both short and long term effects on mental health. But more explicit applications of the stress framework that seek to specify victimization pathways over time and incorporate broader contextual factors are less common. Research into child victimization has been fragmented and largely detached from traditional social stress research, often having a narrow focus on individual types of victimization and ignoring nonvictimization stressors (Turner et al. 2006). I argue that attention to stress processes, particularly as they pertain to stress proliferation and how stress exposure histories represent contexts for subsequent victimization, is a fruitful avenue for research on child victimization and mental health.

Comprehensive Assessment and the Potential for Stress Proliferation

Most research in the area of child victimization has focused on the effects of individual types of victimization, such as sexual abuse or maltreatment, without considering the cumulative effects of multiple forms of victimization. Focusing

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on only one or a few forms of victimizations out of the large spectrum of victimizations that children experience may substantially underestimate the burden of victimization exposure and fail to adequately capture its impact on child's mental health. At the same time, a narrow focus on specific types of victimization can lead to a serious overestimation of the impact of individual victimization experiences, since outcomes may be related to the other victimizations or their co-occurrence, rather than individual events. Recent research documenting high rates of multiple forms of victimization (Finkelhor et al. 2005a,b) underscores the importance of accounting for a wider range of victimization types when attempting to assess both the independent effects of individual types and the cumulative burden of victimization.

Most past research on child victimization has also typically failed to account for other forms of trauma and adversity that may coexist with or contribute to victimization exposure. Major stressors that occur over the child's lifetime, such as the death of someone close, parental unemployment, major accidents or illnesses, parental alcohol or drug problems, or parental imprisonment each can have long-term effects on the child's mental health (Leventhal et al. 1985; Lutzke et al. 1997; McLoyd 1989; West and Printz 1987). Moreover, the accumulation of such major stressors may be particularly detrimental. Turner and Lloyd (1995) found that, while many of these individual traumas occurring in childhood or adolescence increased the probability of subsequent disorder, the effect of experiencing multiple adversities was especially powerful.

In addition to having their own deleterious effects on mental health, it is also possible that early trauma and adversity contribute to subsequent victimization. In discussing the process of stress proliferation, Pearlin et al. (2005) argue that exposure to trauma and major forms of adversity may exert their long term effects, in part, because of the risk they pose for additional subsequent stressors that have their own health consequences. The process of stress proliferation highlights the importance of considering sequences of stress over time and the utility of longitudinal analyses.

Applying this idea to victimization processes, there is reason to suspect that substantial adversity in childhood could increase risk for victimization exposure. Since many of the major stressors that affect children arise within the family context, they also reflect the experiences of parents and siblings. Stressful circumstances are associated with reduced psychological and social functioning of parents, lower quality of parent and child relationships, greater parental hostility and conflict with children, and more harsh and inconsistent discipline (Ge et al. 1994; Lempers et al. 1989; McLoyd 1990; Parke et al. 2004). These conditions are likely to increase the risk of victimization by caregivers. Indeed, wage earner unemployment (Gillham et al. 1998), parental alcohol and substance abuse (Forrester 2000; Sebre et al. 2004) and parental incarceration (Phillips et al. 2004) have each been associated with elevated rates of child maltreatment. Since many major family stressors lead to economic deprivation, they can also affect victimization by reducing basic resources necessary to support and care for children (Berger 2004).

Major adversity within the family can also lead to increases in extra-familial victimization. Research suggests that parents who are exposed to stress are less

effective at monitoring and supervising the activities of children (McLoyd 1990; Murry et al. 2008), and that children who are poorly supervised are more likely to be victims of crime (Esbensen et al. 1999). Major and traumatic stressors may also increase the risk of victimization by reducing a child's own ability to avoid or manage potential victimization situations. Stress exposure, for example, might inhibit the development of social competence and self protection skills that help youth to stave off dangerous situations.

It is worth noting that the above discussion also highlights the importance of "linked lives" in stress proliferation processes. As Pearlin and colleagues have emphasized in much of their work, stressors are not only *shared* within family role sets, but can also proliferate across family members (Pearlin and Turner 1987; Pearlin et al. 2001; Pearlin et al. 2005), as when, for example, parent stress leads to child victimization. Whether these processes represent stress proliferation or simply reflect different stressors that arise from the same problematic social contexts, the effects of nonvictimization adversity should be disentangled from the impact of child victimization.

The Relevance of Context and Meaning in the Stress Process

Pearlin's conceptualization of the stress process and subsequent elaborations (Wheaton 1990, 1999) have also pointed to the importance of *context* for understanding variations in the effects of stressors. As Thoits (1995) points out, specifying and understanding the relevance of context is part of the "search for meaning" in the stress process. That is, stressors can have different meanings, and ultimately lead to different responses, depending on the context surrounding the event or condition. Of particular relevance to the current work, is the notion of "biographical context," which refers to "the effect of past experience, both in terms of timing and content, on the 'meaning' of current stress" (Wheaton 1999, p. 295). Indeed, when stress processes are viewed within a life-course framework, one that takes an extended view of human biography, it becomes evident that past experiences often importantly condition the impact of later experiences (Pearlin et al. 2005). Consistent with this idea and focusing specifically on processes in childhood and adolescence, Rutter (1996) states "one set of stress experiences could either increase or decrease vulnerability to later stress experiences" (p. 371). Yet, as he points out, little research has addressed this possibility or attempted to explain these types of stress processes. Focusing on the concepts of context and meaning in the stress process, I suggest that adversity in childhood provides a context for victimization that may influence the meanings attached to victimization and shape how it influences youth mental health.

The literature suggests two alternative ways in which prior adversity could potentially affect the impact of recent victimization. One possibility is that children who have experienced considerable stress in their lives may be more vulnerable to the negative effects of later stressors, such as victimization. The assumption behind

this hypothesis is that prior adversity can reduce coping capacities and social supports and/or heighten emotional sensitivity to future stressful events. Consistent with this notion, Brown and Harris (1978) and O'Neil et al. (1986) found that the death of a parent in childhood increased vulnerability to stressful life events in adulthood. Landerman et al. (1991) reported similar findings involving other childhood stressors, including parental divorce and parental mental illness. Rodgers (1991) found that "childhood risk" (comprising parental physical and mental illness, parental divorce, child truancy, child illness or disability and certain child personality traits) increased women's vulnerability to recent life stressors in predicting psychiatric symptoms.

While all the above studies focus on long-term effects of childhood stress in creating adult vulnerability, a few studies also suggest that the synergistic effects of stress may operate in a shorter timeframe within childhood. Rutter and Quinton (1977), for example, found that hospitalizations were more strongly associated with emotional problems in children when they occurred in the context of high chronic family stress. Simmons et al. (1987) found that, among adolescent girls, numerous stressors combined multiplicatively in their effects on functioning and adjustment, with each additional stressor resulting in a larger deficit in functioning than would be the case if the stressors had simple additive effects.

None of the studies cited, whether implicating childhood stress in longer-term or shorter-term outcomes, included a focus on child victimization. In discussing this issue, Widom (1998) acknowledged that adverse contexts in childhood may interact with one another so that their combined effects may be greater than the sum of their parts. But she points out that "Whether this interaction effect applies to childhood victimization is not known. The question arises as to whether the presence or absence of certain characteristics or adverse events influences a child's response to the experiences of childhood victimization" (p. 91).

An alternative hypothesis concerning the potential interaction between victimization and lifetime adversity, suggests the possibility of a weaker impact of recent victimization in the contexts of prior exposure to other forms of stress. For example, Wheaton (1990) found that the effects of transition events (e.g. divorce, job loss) varied according to the level of chronic stress present in the corresponding life domain (e.g. marital stress, job stress), with transitions often having mental health *benefits* in the context of high chronic stress. Similarly, Kessler et al. (1997) found that the long term effects of parental divorce on psychological disorder were substantially smaller for respondents who were exposed to other child adversities. In the subset of respondents who experienced multiple adversities that could potentially be resolved by divorce (e.g. paternal mental illness, unemployment), parental divorce was even associated with reduced risk of psychopathology.

While, in the above scenarios, the negative interactions between stressors could be explained by a particular life event providing relief to a specific stressful condition, there may be other more general processes that lead to similar findings. Exposure to a broad range of stressors may reduce the effects of subsequent events, even when the event does not alleviate another stressful condition. Some investigators have referred to this as the "stress inoculation model" (e.g. Rudolf and Flynn 2007)

whereby a history of child adversity actually buffers youth from the detrimental effects of recent stress. For example, adversity can strengthen coping skills as individuals gain experience in dealing with difficult changes and conditions. Importantly, stress histories can also affect the meaning of later stressors such that new events may be perceived as more ordinary and less threatening in the context of greater lifetime exposure to stress. Consistent with these ideas, Wheaton et al. (1997) find evidence of a "ceiling effect" with new stressors having a progressively smaller impact on mental health as the quantity of prior stress exposure increases. However, again, there has been no research to date that specifically examines the impact of different forms of child victimization in the context of differing levels of prior childhood adversity. Considering how cumulative exposure to major stressful events and circumstances may condition responses to recent victimization events may provide insights into child victimization contexts and, more generally, into how stress processes operate across children's life course.

It is important to note that a limitation of much of the existing child victimization research is the failure to account for previctimization symptomatology. There is a strong possibility that at least some part of the association between victimization and negative mental health outcomes is due to the influence of mental health status on victimization exposure, rather than the reverse. Symptomatic children may have impaired judgment or engage in certain behaviors that increase their risk of becoming victims. Research on the consequences of victimization should therefore attempt to control for baseline symptomatology when assessing the effects of victimization exposure.

The primary purpose of the current research is to examine the effects of recent victimization experiences on mental health among youth ages 10–17, independent of and in combination with lifetime adversity. The specific objectives are to: (1) assess the independent effects of exposure to several different forms of victimization (sexual victimization, child maltreatment, peer and sibling victimization, and witnessing-indirect victimization) on level of symptoms at Time 2, controlling for baseline symptoms; (2) examine the effects of other forms of adversity that may accumulate over the child's lifetime and potentially contribute to later victimization (stress proliferation) or explain victimization-mental health associations; and (3) consider the potential joint effects of earlier lifetime adversity and recent victimization experiences.

Method

Participants

This research is based on data from the Developmental Victimization Survey (DVS), designed to obtain prevalence estimates of a comprehensive range of childhood victimizations across gender, race, and developmental stage. The survey, conducted between December 2002, and February 2003, assessed the experiences

of a nationally representative sample of 1,000 children age 10–17 living in the contiguous United States. The interviews with parents and youth were conducted over the phone by the employees of an experienced survey research firm. Telephone interviewing is a cost-effective methodology (Weeks et al. 1983) that has been demonstrated to be comparable in reliability and validity with in-person interviews, even for sensitive topics (Bajos et al. 1992; Bermack 1989; Czaja 1987; Marin and Marin 1989). The methodology is also used to interview youth in the US Department of Justice's National Crime Victimization Survey (Bureau of Justice Statistics) and in a variety of other epidemiological studies of youth concerning violence exposure (Hausman et al. 1992).

The sample selection procedures were based on a list-assisted random digit dial (RDD) telephone survey design. This design increases the rate of contacting eligible respondents by decreasing the rate of dialing business and nonworking numbers. Experimental studies have found this design to decrease standard errors relative to the standard Mitofsky–Waksberg method (Waksberg 1978) while producing samples with similar demographic profiles (Brick et al. 1995; Lund and Wright 1994).

A short interview was conducted with an adult caregiver (usually a parent) to obtain family demographic information. One child was randomly selected from all eligible children living in a household by selecting the child with the most recent birthday. After obtaining consent from both the parent and child, the selected child was interviewed.

Up to 13 callbacks were made to select and contact a respondent and up to 25 callbacks were made to complete the interview. Respondents were promised complete confidentiality, and were paid $10 for their participation. Children who disclosed a situation of serious threat or ongoing victimization were re-contacted by a clinical member of the research team, trained in telephone crisis counseling, whose responsibility was to stay in contact with the respondent until the situation was resolved or brought to the attention of appropriate authorities. All procedures were authorized by the Institutional Review Board of the University of New Hampshire.

The cooperation rate for this survey was 79.5%. The response rate based on standard guidelines (The American Association for Public Opinion Research (AAPOR), 2004) was 41%. It should be noted that the majority of "non-respondents" represent households in which no resident was ever contacted even after up to 25 call attempts. Therefore, while it is unknown whether these unscreened households differ in some systematic way from survey respondents, their nonparticipation was not directly related to survey content. Because the sample somewhat under-represents the national proportion of Blacks and Hispanics, using 2002 Census estimates (U.S. Bureau of the Census 2000), poststratification weights were applied to adjust for race proportion differences between our sample and national statistics. Weights were also applied to adjust for within household probability of selection due to variation in the number of eligible children across households and the fact that the experiences of only one child per household were included in the study.

Wave II of the survey was conducted between December 2003 and May 2004, approximately one year after the baseline interview. The same careful interviewing

procedures and human subjects protocol used in Wave I were implemented in this second wave of data collection. Respondents were again paid $10 for their participation. A total of 768 respondents (76.8% of the baseline sample) were re-interviewed in Wave II. Attrition analyses show that respondents lost to follow-up were more likely to be Hispanic, and lower in socioeconomic status (as assessed by a composite of income and parent education). However, there were no significant differences between Wave II respondents and those lost to follow-up on the level of victimization reported at baseline.

Measurement

Victimization. Victimization was measured using the Juvenile Victimization Questionnaire (JVQ), a recently constructed inventory of childhood victimization (Hamby et al. 2004). The JVQ was designed to be a more comprehensive instrument than that typically used in past research, providing a description of all the major forms of offenses against youth. The use of simple language and behaviorally specific questions clearly define the types of incidents that children should report. Considerable attention was paid to translate clinical and legal concepts such as "neglect" or "sexual harassment" into language that children could understand. Prior to its use in the survey, the JVQ was extensively reviewed and tested with victimization specialists, focus groups of parents and children, and cognitive interviews with young children to determine the suitability of its language and content. As a result, the JVQ is appropriate for self-report by children as young as age 8. The Juvenile Victimization Questionnaire (JVQ) has shown evidence of good test–retest reliability and construct validity across a wide spectrum of developmental stages (Finkelhor et al. 2005a).

Summary measures were constructed representing exposure to multiple forms of victimization over the past year within each of the four categories. These summary measures included: sexual victimization (7 items), child maltreatment (4 items), peer/sibling victimization (6 items), and witnessing/indirect victimization (9 items). Specific screener items reflecting the 26 types of events are presented in Appendix A. Note that these measures do not incorporate frequency of exposure within a specific type of event, but instead focus on exposure to multiple forms of victimization within different victimization domains. This measurement strategy is based on earlier research indicating substantially greater risk associated with multiple or "poly-victimization" relative to chronic exposure within individual forms of victimization (Finkelhor et al. 2007). In the present research, we utilize these four summary measures constructed from the JVQ items measured at Time 2. Thus, they represent victimization experiences that occurred in the year between the two survey administrations.

Lifetime childhood adversity. Cumulative adversity in childhood was assessed by a comprehensive measure that includes 14 nonviolent major events and

chronic stressors accessed at Time 1. If a specific stressor had occurred or was present at least once in the respondent's lifetime, they were given a code of 1 on that item. Items included: (a) nonvictimization events such as serious illnesses, accidents, parent imprisonment, and natural disasters; and (b) more chronic adversities, like substance abuse by family members and parental arguing. The full list of traumas/adversities and their exact wording are presented in Appendix A. A summary count of total lifetime exposure to nonviolent traumas and adversities was constructed. Higher scores indicate greater exposure to different forms of adversity.

Child mental health. Depression, anxiety, and anger components of the Trauma Symptom Checklist for Children (TSCC) were administered. Youth were presented with a list of thoughts, feelings, and behaviors and asked to indicate how often each of these things happened to him or her in the last month. Each item was rated on a 4-point scale ranging from 0 (not at all) to 4 (very often). All components of the TSCC have shown very good reliability and validity in both population-based and clinical samples (Briere 1996). All item responses for the three scales were summed to create an aggregate trauma symptom scores. Up to three missing individual item responses were replaced with the case's mean for the remaining nonmissing responses. Replacement affected less than 1% of the respondent's scores**.** The TSCC items were repeated for both Wave 1 and Wave 2, allowing the construction of symptom scores for each of the two years. In the present study, TSCC alpha coefficients are 0.92 for both the Wave I and Wave II.

Socio-demographic factors. All demographic information was obtained in the initial baseline parent interview, including the child's age (in years), race/ethnicity (coded into four groups: white, Black nonHispanic, Hispanic any race, and other race), and current family structure (coded into three groups: child living with two biological or adoptive parents, child living with one biological parent and a step-parent or unmarried partner, and child living with a single parent). Regression analyses also include a measure of socio–economic status (SES), constructed as a composite of household income and highest parental educaton. Household income is total 2002 income, including all wages, public assistance, and child support (10 categories: ranging from $5,000 or less to more than $100,000). Parental education (11 categories: ranging from grade school or less to graduate degree) represents the parent in the household with the highest level of education. The SES composite is based on the sum of the standardized income and standardized parental education scores, which is then re-standardized. In cases where the data for one of the SES indices (most often income) was missing, the SES score is based on the standard score of the remaining index. Community size discriminated among children living in a large city (population over 300,000), a small city (population about 100,000–300,000) or a suburb, and a small town or rural area. In all regression analyses, gender is a dummy variable (female = 1), white is the comparison group for race/ethnicity, living with two biological/adoptive parents is the comparison group for family structure, and small town or rural area is the comparison group for community size.

Results

A series of regression analyses were conducted to assess the independent and relative effects of different categories of victimization and lifetime adversity on symptom levels. To determine whether lifetime adversity explains associations between victimization and mental health, and/or has largely indirect effects by contributing to subsequent victimization (possible stress proliferation), I examined the effect of lifetime adversity both with and without recent victimization in the equation. To increase our confidence that the causal order flows from victimization to mental health, I controlled on T1 symptom levels in considering the impact of recent victimization (past year) on T2 symptoms. Table 12.1 presents these analyses.

Model 1 shows the regression coefficients for all demographic factors and lifetime adversity (measured at T1) on total T2 symptoms. Results indicate significantly higher symptom levels among females and youth living in large cities. As expected, lifetime adversity is also positively related to the level of symptoms.

Four different categories of victimization (maltreatment, sexual victimization, peer victimization, and witness/indirect victimization) were added to the equation in Model 2. Sexual victimization, child maltreatment, and peer-sibling victimization are each independently related to symptoms. Interestingly, witnessing and indirect victimization is unrelated to symptoms level, and with other forms of controlled victimization. Since the bivariate association between witnessing and symptoms is significant and moderately strong (not shown), it appears that it is the tendency for witnessing to co-occur with personal victimization that accounts for its association with mental health. Importantly, when recent victimization was included in the equation, the coefficient for lifetime adversity was reduced by more than half, suggesting that major adversity experienced prior to T1 is partially mediated by subsequent victimization exposure.

In Model 3 of Table 12.1, T1 symptoms were added to the equation. All three forms of victimization remain significant predictors, indicating that exposure to each is independently related to increases in symptoms. Adversity measured at T1 is no longer significant, however, suggesting that lifetime adversity is related to higher *levels* of symptoms at T1, but does contribute to further increases in symptoms. Therefore, it appears that exposure to adversity prior to T1 is associated with elevated T1 symptomatology and subsequent exposure to victimization. Victimization that occurred between T1 and T2, in turn, is related to further increases in symptom levels by T2.

Another primary aim of this study was to assess the potential joint effects of lifetime adversity and victimization exposure. I hypothesized that a history of adversity may affect the context and meaning of recent victimization experiences by either amplifying or reducing their effects on mental health. To this end, I tested for statistical interactions between total lifetime adversity measured at T1 and each of the four summary measures of victimization measured at T2.

Table 12.1 The effects of recent victimization and lifetime adversity on T2 symptoms: b (SE)

	T2 symptoms		
	Model 1	Model 2	Model 3
Gender (male = 1)	–1.69*** (.645)	–1.85*** (.575)	–0.830 (.524)
Age	–0.008 (.143)	–0.003 (.132)	–0.145 (.128)
Black[a]	–1.68 (1.01)	–0.673 (0.901)	–0.331 (0.820)
Hispanic[a]	–0.215 (0.974)	0.717 (0.869)	–0.440 (0.794)
Other race[a]	1.13 (1.70)	–0.003 (1.47)	1.48 (1.34)
Socioeconomic status	–0.408 (0.361)	–0.507 (0.319)	–0.345 (0.292)
Single parent[b]	–0.103 (0.914)	–0.602 (0.810)	–0.469 (0.739)
Step family[b]	0.703 (0.990)	–0.406 (0.880)	–1.12 (0.799)
Large city[c] (300K+)	2.06* (0.935)	2.21* (0.830)	1.67* (0.754)
Small city[c] (1–300K)	0.874 (0.885)	0.466 (0.789)	0.400 (0.719)
Lifetime adversity	1.102*** (0.170)	0.492** (0.160)	–0.092 (0.157)
Sexual victimization		4.23*** (0.606)	3.55*** (0.552)
Child maltreatment		4.39*** (0.740)	3.42*** (0.675)
Witness/indir. victimization		0.107 (0.316)	0.130 (0.286)
Peer-sibling victimization		1.76*** (0.377)	0.977** (0.348)
T1 symptoms			0.418*** (0.032)
Adjusted R^2	*0.071*	*0.276*	*0.423*

$^{+}p<0.10$; $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$ (two-tailed)
[a]Comparison group = white non-Hispanic
[b]Comparison group = two biological/adoptive parents
[c]Comparison group = rural/small town
$N = 731$

Given the potential for multicolinearity, each interaction was considered separately, with all main effects and demographic controls in the model. Table 12.2 presents results of these analyses. Maltreatment ($p<0.001$) and sexual victimization ($p<0.01$) interactions are statistically significant and the interaction for witnessing and indirect victimization is marginally significant ($p<0.07$). All interactions are negative, indicating that the positive effect of victimization is

Table 12.2 Joint effects of recent victimization and lifetime adversity on changes in symptoms: b (SE)[a]

	T2 symptoms			
	Model 1	Model 2	Model 3	Model 4
Sexual victimization	6.36*** (1.23)	3.58*** (0.584)	3.59*** (0.551)	3.68*** (0.558)
Child maltreatment	3.51*** (0.674)	8.44*** (1.66)	3.67*** (0.688)	3.63*** (0.690)
Witness/indirect victimization	0.144 (0.285)	0.262 (0.287)	1.042** (0.578)	0.220 (0.292)
Peer-sibling victimization	0.942** (0.347)	0.902** (0.346)	0.966*** (0.347)	1.622** (0.059)
Lifetime adversity	0.000 (0.160)	0.005 (0.158)	0.093 (0.187)	0.045 (0.082)
Sexual victim. X life adversity	–0.584** (0.076)			
Maltreatment X life adversity		–0.995*** (0.301)		
Witnessing X life adversity			–0.220+ (0.121)	
Peer-sib victim X life adversity				–0.218 (0.147)
Adjusted R^2	*0.415*	*0.418*	*0.412*	*0.411*

$^{+}p<0.10$; $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$ (two-tailed)
[a]All equations control for T1 symptoms and demographic factors (see Table 12.1)

greater when lifetime adversity is low. Thus, recent child maltreatment, sexual victimization, and witnessing or indirect victimization are related to the greatest increases in symptoms among youths who have experienced lower levels adversity throughout their lives.[1]

To help illustrate the nature of the significant interactions, we present regression slopes for victimization types at low, medium, and high levels of adversity (see Fig. 12.1). Since the average number of lifetime adversity events in the sample was 3, we defined low adversity as 0–1 (n = 162), medium adversity as 2–4 (n = 427), and high adversity as 5 or more events (n = 167). As seen in Fig. 12.1, the group with the lowest level of adversity shows the steepest slope for the effect of sexual victimization and witnessing on increases in symptoms, while youth with average levels of adversity appear to be the most affected by maltreatment.

[1] Cook's D and DF Beta diagnostic tests were conducted to determine whether any potential outlier observations were having an unusual influence on the significant interaction coefficients. Only a very small number of observations fell within the recommended size-adjusted cut-offs (Cook and Weisberg 1982; Fox 1991; Hamilton 2005) and when excluded did not change the results.

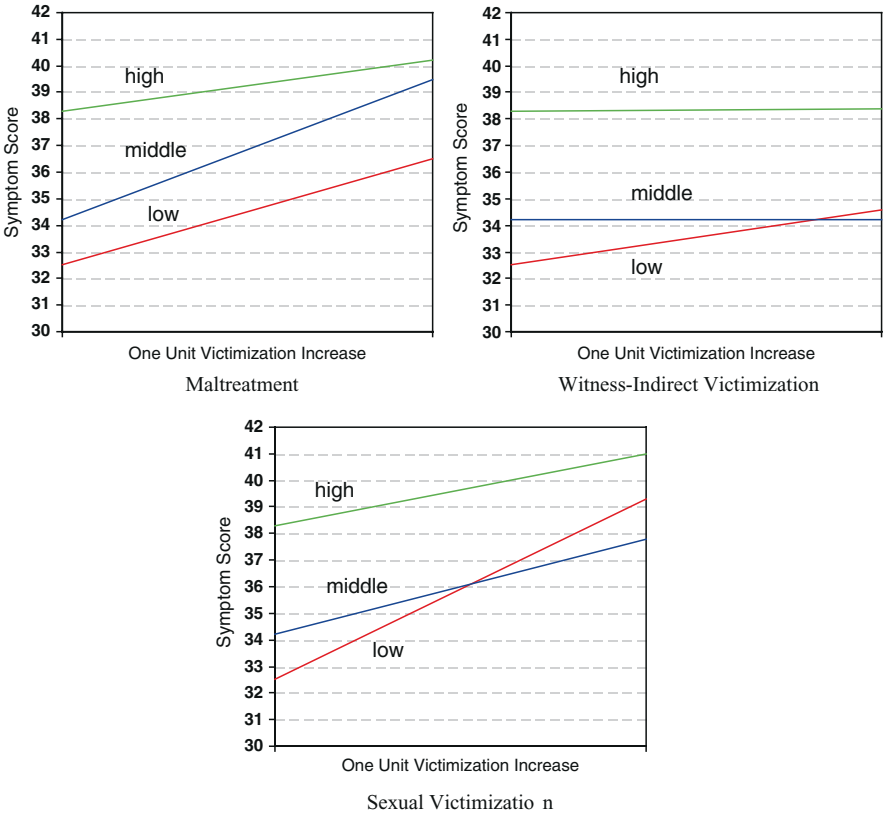

Fig. 12.1 Total symptom score increase for selected victimization types by level of adversity. Symptom scores at *left* of each graph are mean scores for each level of adversity

Discussion

The purpose of this study was to apply the stress process model to child victimization research in ways that consider the potential for stress proliferation within families and how early stress contexts may influence responses to victimization experiences. In doing so, this research also addressed gaps in the child victimization literature by considering the mental health effects of several different forms of victimization, measured more comprehensively than has been typical, and by incorporating the effects of other forms of major adversity. Thus, I was able to (a) more fully capture the burden of victimization on child well-being, (b) assess the relative effects of different forms of victimization, and (c) determine the extent to which lifetime adversity contributes to victimization exposure and/or has independent effects on mental health symptoms. Importantly, I also wished to determine whether different levels of past adversity conditioned the effects of recent victimization on mental health.

Results indicate that, when considered together, the full burden of victimization is substantial and that, despite their frequent co-occurrence, different types of victimization make independent contributions to increases in symptoms. Sexual victimization and child maltreatment showed the largest independent main effects on increase in symptom levels. Peer and sibling victimization was also independently associated with increases in symptoms, while witnessing/indirect victimization was unrelated to negative changes in symptoms, with other forms controlled.

The main effect of lifetime adversity on *levels* of symptoms at Time 2 was significant and moderately strong. However, the association was substantially reduced when accounting for recent victimization exposure. These findings are consistent with the idea of stress proliferation whereby major and potentially traumatic stressors experienced by children (events and conditions that emerge largely out of the family context) generate additional stressors that have their own deleterious effects on child mental health. Although the particular mechanisms that link exposure to adversity with later victimization are not clear, it seems likely that deficits in parenting would be implicated, since many of the major forms of adversity that children experience, are shared by or directly involve the actions of caregivers. Lifetime adversity occurring up until the Time 1 is no longer significantly related to Time 2 symptoms, when Time 1 symptoms are controlled. Consistent with past research on this same data set (Turner et al. 2006), it is evident that lifetime adversity had strong positive effects on the level of symptoms at T1, but was not related to further increases between Time 1 and Time 2. Instead, it was the subsequent victimization occurring between the two time points that was most related to deteriorations in mental health. It is important to note that, while this pattern of results is consistent with stress proliferation processes, it may also simply reflect a stability of dangerous social contexts in children's lives, responsible for both early adversity and recent victimization.

Of particular interest in the present analyses was the role of past adversity in modifying the effects of victimization on mental health. Significant interactions between lifetime adversity and recent victimization indicated more detrimental effects of victimization among respondents whose history of adversity was low. Although stress experiences clearly do accumulate in their impact on mental health, exposure to victimization at the higher end of the stress continuum appears to have smaller effects than experiences at the lower end of the continuum. Although it is unclear why exactly this would be the case, a few potential explanations are plausible.

First, it is possible that children who have experienced very low levels of stress have had little opportunity to develop coping skills, while those who have confronted difficult situations in the past have become better equipped to handle victimization events. Another likely explanation, one consistent with the importance of biographical contexts, is that past stressful events and conditions may change individuals' interpretations (i.e. the meaning) of new experiences. When adversity is more unusual in a child's life, any given event may be more disruptive or take on greater importance, at least in the short-term. In contrast, when stress is more habituated, children may place less significance on any one particular occurrence. Maltreatment

"events," for example, may be perceived as a normal part of family life for children who have been exposed to many other family problems such as parental unemployment, parental conflict, illnesses, and accidents. However, when family contexts have been largely harmonious and free of adversity, children who suddenly experience maltreatment at the hands of caregivers may feel particularly betrayed and threatened by those events. Thus, variations in the meanings or significance attached to recent victimization may reflect the extent to which it is perceived as a "crisis." From the perspective of crisis theory, a crisis is "an event, whether traumatic or developmental, that challenges the individual's assumptive state and forces a change in self concept or view of reality" (Reynolds and Turner 2008; Turner 1966). It seems plausible that victimization would be more detrimental when past adversity is low because there is greater potential for the recent victimization to have this "crisis-like" quality – one that creates a dramatic shift in world view. Those who have experienced major stressors prior to the victimization, in contrast, may have already adjusted their assumptions about the fairness of the world and the benevolence of others, so that new experiences are less likely to have this type of impact.

It is extremely important to emphasize that these findings certainly do not imply any overall benefit of experiencing high levels of adversity in childhood. Lifetime adversity shows strong negative effects on levels of baseline symptomatology, independent of several forms of victimization (Turner et al. 2006). Moreover, as seen in Fig. 12.1, children who experience the highest levels of lifetime adversity also experience the greatest symptoms at *all* levels of victimization. Thus, a high level of adversity is clearly detrimental to children, both by directly affecting mental health (by entrenching kids at high symptom levels) and by likely contributing to subsequent victimization exposure (which further increases symptoms). Nevertheless, the negative interactions between lifetime adversity and different forms of victimization suggest that past stress exposure may change the context and meaning of later victimization events.

A number of areas for future research that incorporate child victimization into stress process models are suggested by the current work. Further elaborations of the model, for example, might attempt to better specify the mechanisms involved in stress proliferation processes that extend from family adversity to different forms of child victimization. For example, adversity that is "shared" within families may increase risk for victimization by affecting the psychological functioning of parents and/or by reducing effective parenting behaviors. Greater understanding of the specific pathways of stress proliferation, both within and across family members, would have both theoretical and practical benefits.

Future research should also attempt to "unpack" adversity history to determine whether different types of stressors are more or less likely to lead to later victimization resiliency. It is unknown if the conditional effects evident in these analyses are specific to recent victimization stressors or if they reflect a more generalized stress process. Thus, it would be useful to test for these effects across a broader array of accumulated stress experiences. It is also unclear whether such effects would remain evident over time. Although children with low levels of past adversity may be more negatively affected by recent victimization in the short term, the impact may dissipate more quickly for them than for those who have accrued more stressors over their

lifetimes. Thus, we need to better understand how the combination of different stress experiences may affect resiliency and vulnerability over longer periods of time.

Important to the stress process framework is its emphasis on the structural arrangements that influence exposure to stress, access to social and personal resources, and the manner in which these factors operate to affect health and well-being (Pearlin 1999; Pearlin et al. 1981; Pearlin et al. 2005). Thus, one extension of the current work would be to examine how stress proliferation processes and/or conditional effects involving family adversity and child victimization may differ across social statuses. For example, stress proliferation stemming from family adversity may occur more readily among lower class respondents who have fewer resources to help deflect additional troubles. Parents with more education and financial assets may be better able to keep stressful events, like divorce or job loss, from negatively affecting parental supervision, parent–child interactions, or other problems that can increase risks for child victimization. In addition to considering stress history as a biographical context that conditions responses to child victimization, future research might also consider the potential moderating effects of social contexts, such as neighborhood, school settings, and peer networks. These broader contemporaneous contexts may further shape the meaning of victimization events by influencing the social norms and expectations associated with their occurrence.

Conclusion

The stress process framework, developed by Leonard Pearlin, has made an extraordinary contribution to research on the social determinants of human health and well-being, guiding numerous areas of study for over 25 years. Although stress and resiliency have been implicit in child victimization research, I have argued that more explicit applications of stress process concepts would be beneficial. By considering sequences of stressors over time and the ways that victimization experiences are situated within and shaped by social and biographical contexts, the stress process framework represents a valuable model for approaching the study of child victimization. The findings of this study highlight the importance of accounting for a broad range of victimizations, in addition to other forms of adversity, when assessing mental health outcomes. In doing so, it is clear that the burden of victimization on youth is substantial. However, findings also indicate that victimization exposure likely emerges out of earlier stressful contexts and that the effects of child victimization are conditioned by such contexts. Greater specification of the links between family adversity and youth victimization, as well as the mechanisms underlying these mediating and moderating processes, represent important objectives for future research.

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Appendix A. Juvenile Victimization Questionnaire: Basic Screen Questions

Child Maltreatment

Next, we ask about grown-ups who take care of you. This means parents, babysitters, adults who live with you or others who watch you.

(M1) *Physical Abuse by Caregiver*
Not including spanking on your bottom, in the last year, did a grown-up in your life hit, beat, kick, or physically hurt you in any way?
(M2) *Psychological/Emotional Abuse*
In the last year, did you get scared or feel really bad because grown-ups in your life called you names, said mean things to you, or said they didn't want you?

(M3) *Neglect*
When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. In the last year, did you get neglected?

(M4) *Custodial Interference/Family Abduction*
Sometimes a family fights over where a child should live. In the last year, did a parent take, keep, or hide you to stop you from being with another parent?

Peer and Sibling Victimization

(P1) *Gang or Group Assault*
Sometimes groups of kids or gangs attack people. In the last year, did a group of kids or a gang hit, jump, or attack you?

(P2) *Peer or Sibling Assault*
(If yes to P1, say: "Other than what you just told me about…..") In the last year, did any kid, even a brother or sister, hit you? Somewhere like at home, at school, out playing, in a store, or anywhere else?

(P3) *Nonsexual Genital Assault*
In the last year, did any kid try to hurt your private parts on purpose by hitting or kicking you there?

(P4) *Bullying*
In the last year, did any kid, even a brother or sister, pick on you by chasing you or grabbing your hair or clothes or by making you do something you didn't want to do?

(P5) *Emotional Bullying*
In the last year, did you get scared or feel really bad because kids were calling you names, saying mean things to you, or saying they didn't want you around?

(P6) *Dating Violence*
In the last year, did a boyfriend or girlfriend or anyone you went on a date with slap or hit you?

Sexual Victimizations

(S1) *Sexual Assault by Known Adult*
In the last year, did a grown-up YOU KNOW touch your private parts when you didn't want it or make you touch their private parts? Or did a grown-up YOU KNOW force you to have sex?

(S2) *Nonspecific Sexual Assault*
In the last year, did a grown-up you did NOT KNOW touch your private parts when you didn't want it, make you touch their private parts or force you to have sex?

(S3) *Sexual Assault by Peer*
Now think about kids your age, like from school, a boy friend or girl friend, or even a brother or sister. In the last year, did another child or teen make you do sexual things?

(S4) *Rape: Attempted or Completed*
In the last year, did anyone TRY to force you to have sex; that is, sexual intercourse of any kind, even if it didn't happen?

(S5) *Flashing/Sexual Exposure*
In the last year, did anyone make you look at their private parts by using force or surprise, or by "flashing" you?

(S6) *Verbal Sexual Harassment*
In the last year, did anyone hurt your feelings by saying or writing something sexual about you or your body?

(S7) *Statutory Rape and Sexual Misconduct*
In the last year, did you do sexual things with anyone 18 or older, even things you both wanted?

Witnessing and Indirect Victimization

Sometimes these things don't happen to you but you see them happen to other people. This means to other people in real life. Not people on TV, video games, movies, or that you just heard about.

(W1) *Witness to Domestic Violence*
In the last year, did you SEE one of your parents get hit by another parent, or their boyfriend or girlfriend? How about slapped, punched, or beat up?

(W2) *Witness to Parent Assault of Sibling*

In the last year, did you SEE your parent hit, beat, kick, or physically hurt your brothers or sisters, not including a spanking on the bottom?

(W3) *Witness to Assault with Weapon*
In the last year, in real life, did you SEE anyone get attacked on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like at home, at school, at a store, in a car, on the street, or anywhere else?

(W4) *Witness to Assault without Weapon*
In the last year, in real life, did you SEE anyone get attacked or hit on purpose WITHOUT using a stick, rock, gun, knife, or something that would hurt?

(W5) *Burglary of Family Household*
In the last year, did anyone steal something from your house that belongs to your family or someone you live with? Things like a TV, stereo, car, or anything else?

(W6) *Murder of Family Member or Friend*
When a person is murdered, it means someone killed them on purpose. In the last year, was anyone close to you murdered, like a friend, neighbor or someone in your family?

(W7) *Witness to Murder*
In the last year, did you SEE someone murdered in real life? This means not on TV, video games, or in the movies?

(W8) *Exposure to Random Shootings, Terrorism, or Riots*
In the last year, were you in any place in real life where you could see or hear people being shot, bombs going off, or street riots?

(W9) *Exposure to War or Ethnic Conflict*
In the last year, were you in the middle of a war where you could hear real fighting with guns or bombs?

Lifetime Adversity

(KA1) In your whole life, were you ever in a VERY BAD fire, explosion, flood, tornado, hurricane, earthquake or other disaster?

(KA2) Were you ever in a VERY BAD accident (at home, school, or in a car) where you had to be in the hospital for many days? This would be a time that you were very hurt and needed to spend a long time in the hospital. Has that ever happened?

(KA3) Did you ever have a VERY BAD illness when you had to be in the hospital for many days? This could be a time when you were so sick that you had to be in the hospital a lot? Has that ever happened?

(KA4) Has *someone you were really close to* ever had a VERY BAD accident where he or she had to be in the hospital for many days? This would be someone important to you, like a parent, brother or sister, or best friend.

(KA5) Has *someone you were really close to* ever had a VERY BAD illness where he or she had to be in the hospital a lot? Again, this would be someone important to you, like a parent, brother or sister, or best friend.

(KA6) Was there ever a time in your life when your family had to live on the street or in a shelter because they had no other place to stay?

(KA7) Did you ever have to do a school year over again?

(KA8) Have there ever been times when your mother, father, or guardian lost a job or couldn't find work?

(KA9) Were you ever sent away or taken away from your family for any reason?

(KA10) At any time in your life did either of your parents, a stepparent, or guardian ever have to go to prison?

(KA11) Have you ever seen a dead body in someone's house, on the street, or somewhere in your neighborhood (other than at a funeral)?

(KA12) Has there ever been a time that a family member drank or used drugs so often that it caused problems?

(KA13) Has there ever been a time when your parents or stepparents were ALWAYS arguing, yelling, and angry at one another most of the time?

(KA14) Has anyone really close to you ever died?

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Chapter 13
The Stress Process as a Successful Paradigm

Blair Wheaton

The Invisible Hand of Philosophy

The philosophy of science invisibly guides much of our work, how we think, what we assume. Although social science is fundamentally empirical, the dictates of philosophy still tell us what we are supposed to achieve and how to behave in our work. We generally accept the dictum known as Occam's Razor – that the simplest explanation is usually the best one. We still take our reference points in discussions of causation from the voluminous work in philosophy – discussions driven by the issue of causality in a physical, not social, world – and wonder how we can approximate the ideal set by this discourse.

Kuhn (1967) famously argued that scientific paradigms are qualitatively distinct eras in the history of science, involving major re-organizations of the assumptive universe, rather than a simple cumulative progression of findings. This argument has had a major influence on how we think about science – perhaps too much of an influence relative to the actual situation on the ground in the more data-infused sciences and social sciences at the beginning of the twenty-first century.

According to Kuhn, paradigms have a core set of defining characteristics:

1. They introduce a fundamental re-organization of subject matter.
2. They are able to explain more empirical cases under one rubric.
3. Their achievements are treated as unprecedented, sufficiently original, and comprehensive to attract "an enduring group of adherents."
4. The new framework is sufficiently open-ended to leave all sorts of problems for practitioners to resolve.

We can see from this definition that the Stress Process is in every respect a paradigm. In this chapter, I consider the specific features of the Stress Process paradigm that make it a successful case, with surprising longevity. In doing so, I re-consider

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the assumption that paradigms have a defined natural life history that ends in a sudden succession by a more general and competing paradigm. I suggest that at this point in history, in the social sciences, this is not a necessity, or even typical, scenario. Rather, some paradigms are able to morph into other forms as data accumulates, while still maintaining the integrity of their original claims.

It is helpful to remember, especially over a quarter century later, that the original article on the Stress Process in 1981 (Pearlin et al. 1981) introduced a number of timely and, for the day, radical notions, including:

- The Stress Process model collected different independent strains of work on stress and coping into a single model, rather than working on discrete pieces, such as life events and social support.
- The model differentiated the conceptual landscape at the time, by distinguishing between types of stress, between types of coping resources, and between coping resources and coping behaviors. Thus, life change events did ***not*** equal stress, which included more stable sources of stress, such as role strains (or more generally, chronic stressors) as well; social support did not equal coping, and specific coping behaviors did not equal coping in total. In sum, the model introduced the fundamentally important notion of capturing the complexity of a complex process.
- The model revealed possibilities that had not yet been considered, spelling out multiple roles for resources as both moderators and mediators, as well as the notion of causal chains of stress proliferation and the idea that each stressor potentially acts as part of the context for further stressors, both conditionally changing the meaning of later stress and changing the probability of later stress exposures.
- The model explicitly argued about the twin significance of the multiple outcomes and the multiple foundations of stress, by pointing *both* to the importance of social origins in social structure and to the shotgun spread of consequences of stress across life domains.
- By creating a general organizational scheme, the model made a statement, intentionally or not, about the misspecification of the study of pieces of the model on their own.

The impact of this last feature has not been entirely articulated in the voluminous literature on the Stress Process. By isolating and focusing on life events and one form of coping, or, as in Brown and Harris (1978), focusing on the specifiers of the impact of life events as the planets revolving around the sun, much may be hidden, because some of those specifiers are adjunct chronic conditions which we would also designate as stressors. By elaborating a model that was meant to be inclusive, we immediately see the possibilities of alternative hypotheses that would question the validity of the piece by piece approach. No, we do not learn more by focusing on one type of stress, or one stressor, and one resource, or one form of coping, at a time – in fact we learn less. For example, the Stress Process raises this question: is it social support, or is it personal dispositions such as mastery that are fundamental to the buffering of stress? Or: what preexisting chronic stressors condition and change the meaning, and therefore the course, of life

transition events when they occur, and what kinds of secondary stressors are set in motion by these events?

The Stress Process has always engaged in complexity and attempted to represent this complexity, while allowing for change that would capture even more complexity. Thus, even though we are now very used to various facets of the Stress Process model, it is important to see how much of a leap into complexity it was at the time. My sense is that its very success depended on this complexity.

Returning to the philosophical origins of what we do, this discussion raises questions about the underpinnings of how we make choices in the work we do, and what counts as the most influential. The Stress Process, from the perspective of the complexity and causal possibilities and the potential for growth it represents, seemingly bucks some of the trends. If parsimony had been the prime directive, many of the questions posed by the Stress Process framework would never have been asked. The fact is that we do not need to accept Occam's Razor as a given, in fact, it is a mystery as to why we do so. Parsimony is as much a cultural value as a scientific norm for choosing successful explanations. There is a built-in tension between the natural and necessary elaboration and modifications of a paradigm and the norm of parsimony as preferable. In reality, this tension can be expressed as a choice between explaining more with more, or less with less, although in a true paradigm shift towards more inclusive explanation with fewer parameters, we keep wishing for more with less. Does this actually happen in the social sciences? My answer, explained further below, is no, not at this point in the history of social science.

Complexity Misunderstood

If the Stress Process model always embraced complexity and invited elaborations along the way that added to this complexity, the question is why is this a strength, given that parsimony is the norm. Consider this quote about the "problem" of parsimony:

> Occam's Razor – the dictum that the simplest explanation is most likely to be correct – may be a form of oppression. The essential problem is that parsimony becomes a tyranny that prevents searching for and capturing the greater complexity that could be there and simply will not go away. Occam's Razor is often cited too early and too often in the history of a research question, preventing a full consideration of alternatives. Ultimately, we do not know whether the best explanation *should* be the simplest, but we do know it should be the one that applies most generally (Wheaton 2003, p. 545).

In other words, the value norm of parsimony often has the unintended consequence of suppressing new but more complex explanations. In the historical context of the 1970s, where the typical approach involved the fine-tuning of how to weight or code life events, a claim that parsimony was misleading would have been helpful.

The problem here may derive from the fact that parsimony is an invention of the experimental sciences, and the higher prioritizing of internal validity over external validity. Experimentation encourages the notion of isolating a single cause while others are held constant in the design. Unless explicitly built into the design, this

approach is a misspecification of even the role of that single cause in at least two senses: (1) its effects are averaged across other unmeasured factors, some of which may interact with the focal variable in question, thus changing its impact under some conditions, and (2) the circumstantial nature of the experimental population begs generalization problems, and further problems of interactions of the focal variable with hidden variables, which differ across these populations.

The valuation of parsimony thus indirectly leads to a generalized preference for piece by piece consideration of parts of a whole process, more abstracted overarching single-cause theories, and simpler linear and unconditional explanation relative to variations from that standard.

The value of the Stress Process model both starts at and proceeds from its status as a complex model. Figures 13.1–13.3 represent the elaboration of the

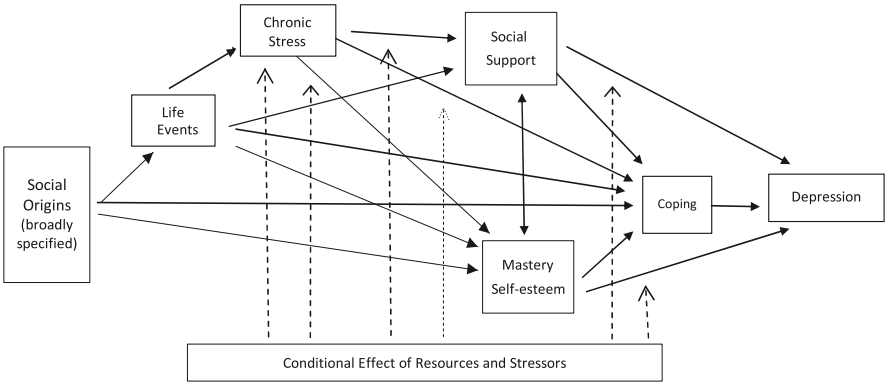

Fig. 13.1 Components of the original Stress Process model

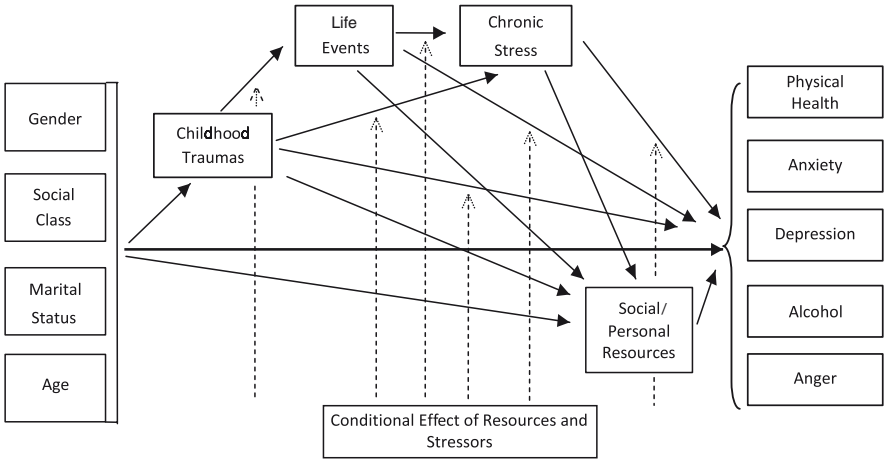

Fig. 13.2 An elaboration of the Stress Process model, middle-stage

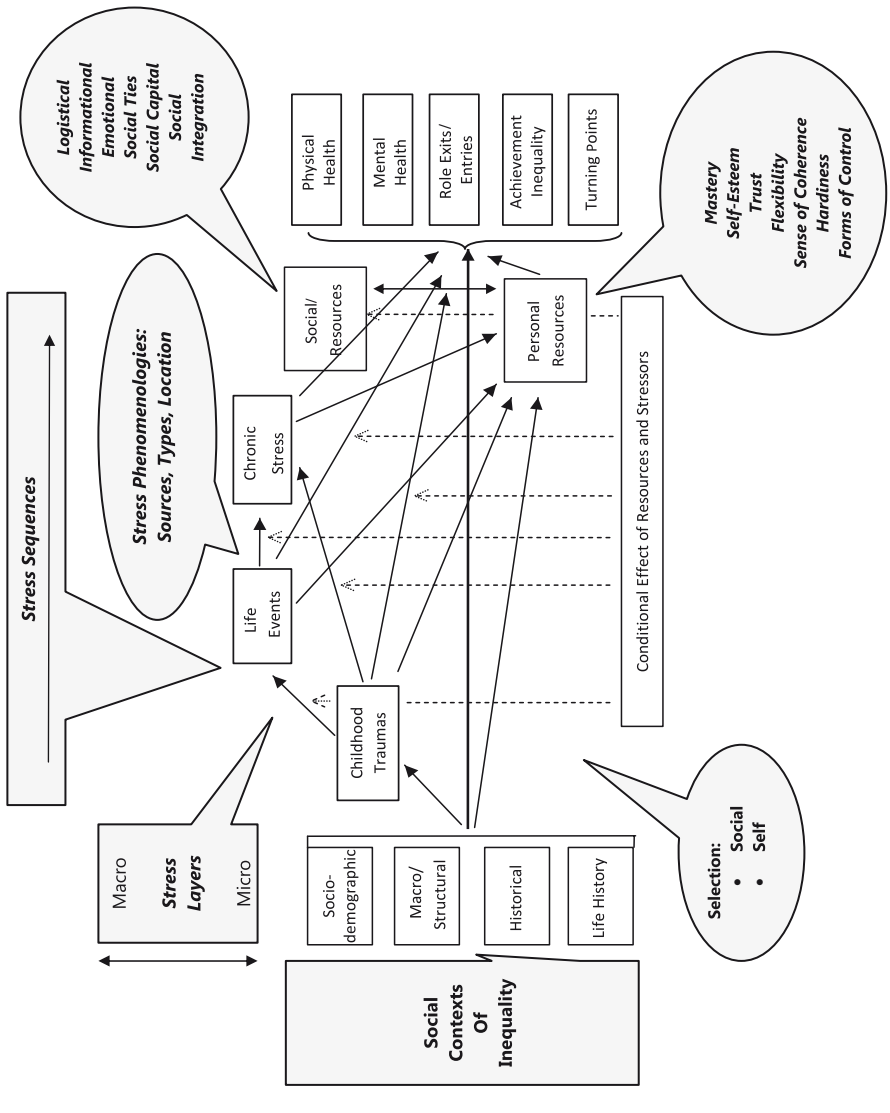

Fig. 13.3 The current Stress Process

Stress Process model through time: Figure 13.1 is an approximate equivalent of the original model in 1981, Fig. 13.2 is a middle-stage version as typically studied in the 1990s, and Fig. 13.3 is where we are now – in all its robust glory.

While the model started by distinguishing two forms of stress, events and chronic (Fig. 13.1), which was a major innovation at the time, we now think of stress along at least three intersecting dimensions (Fig. 13.3): their eventness, from highly discrete to highly continuous, the level of social reality at which they occur, from individual to the entire social system, and the seriousness of the threat or challenge they pose (from relatively universal, as in the case of highly traumatic events or long-term traumatic exposures, to relatively specialized stressors that are much more likely to occur and be threatening to some groups, to the seemingly banal in individual manifestation but with a threshold of threat when prevalent – as in the accumulation of small but regular irritations in daily hassles). If we cross-classify these distinctions, we could end up with at least eight distinctions about the way in which stress presents as a problem.

As seen in Fig. 13.1, the original Stress Process focused on social support, mastery, self-esteem, and coping behavior on the coping side, implicitly distinguishing social from personal resources — a distinction articulated in Wheaton (1980) — and resources from actual behavior. Now, as illustrated in Fig. 13.3, we must also consider various forms of personal control and social support, including informational, logistical, and emotional received and perceived support, the social capital of network ties, social participation, voluntarism, and access to and integration in social institutions, and other personal resources such as sense of coherence, optimism, trust, flexibility, and hardiness, as well as mattering, which, in my view, is a concept that sits at the juncture of the distinction between social and personal resources and may express the inputs of both in total.

Although the original Stress Process model dealt explicitly only with depression as an outcome, the conceptual discussion pointed to the breadth of possible stress consequences. As a result, in later elaborations (Aneshensel et al. 1991), we see strong conceptual arguments for the *proper* specification of stress consequences as an array of alternative manifestations (see Fig. 13.2), some acting as qualitatively distinct (and possibly functionally equivalent) mental health and physical health responses and some quite beyond the realm of health per se (dropping out of school, teenage pregnancy, crime, work performance). The list of nonhealth outcomes continues to generalize, to include: (1) indicators of inequality in life outcomes, including socioeconomic outcomes, (2) indicators of differential risk for role exits and entries (marriage, divorce), and (3) differential access to desired statuses (Fig. 13.3).

The Stress Process emphasized the importance of the social foundations of stress – an important contribution that marked this model as uniquely sociological and distinguished it from psychological approaches which started with the stress as the beginning of the process, treating stress as if it occurred randomly as distinct from being rooted in the conditions of life signified by social statuses and roles. But the specification of these social foundations grew with time and are much more explicit

by the middle-stage version of the Stress Process model in Fig. 13.2 (Mirowsky and Ross 1989; Pearlin 1989). These origins have grown beyond the standard sociodemographic differences in mental health to the multilevel impacts of social contexts over time and place and the direct impacts of meso-social structures that produce differential risk of individual stress exposure (Aneshensel and Sucoff 1996; Ross and Mirowsky 2001; Wheaton and Clarke 2003), and chains of stress proliferation (Pearlin et al. 1997).

The elaboration of the model over time also involves a progressive disaggregation of the process to consider the micro-details of strings of stress accumulation or decay, the conditional effects of earlier exposure on later exposure, and includes the reversal of direction in the process by focusing on the implications of resources for the probability of stress accumulation (Thoits 2006).

While Fig. 13.1 provides essential distinctions that changed the direction of sociological research on mental health, the potential generality of the model is more apparent in the middle-stage Fig. 13.2, where we have more distinct forms of stress, more outcomes, and more explicit and distinct social origins of stress. By Fig. 13.3, it is difficult to express the possibilities of the Stress Process within the confines of a single graphical representation. The callouts in this figure are intended to indicate where alternative elaborations, distinctions, conditions, and causal directions are possible. The variations in stress phenomenologies include not only differences in the type and source (chronic or discrete, individual or contextual), but also the *typical* seriousness of the stressor in question. Stressors are shown in a given sequence, but in fact, different sequences may be set off by the occurrence of different primary stressors. The differentiation of both social and personal resources suggests a number of options that can be invoked to fully specify each hypothesis. This is important: the impact of resources will also depend on the degree to which variants are considered. The possibility of selection into different histories of stress exposure is noted, and distinguishes purely social from self-selection (Thoits 2006). Finally, the social origins of stress are stated in extremely general terms, rather than only at the individual level.

In the end, what we have is actually much more complex than what we started with, but has this complexity discernibly discouraged the use of the model? As we shall see, it has not. The Stress Process was intended to capture complexity in the first place, but it also has proven to be flexible in the face of change, adapting to innovations and additions comfortably. This has happened, I believe, because it was intended to be an inclusive system in the first place.

What, then, is the problem with complexity? There seem to be two related problems. First, complexity is associated with ambiguity – the more elaborate the model, the more uncertainties are introduced into the model. This is due to the fact that complex models are complex *because* they specify multiple roles for every piece of a larger system. The virtue of simplicity is that it hides uncertainty, conditionality, scope, misspecification, and misleading findings. If we pretend in this model that the causal issues are straightforward, we tend to get carried along by the flow and power of the reasoning, until we realize that many of the posited relations in the model could also go in the other direction. For example, we commonly treat

stress as prior to, and the basis of, depression, but depressive states may also generate conditions of stress.

But complexity is quite distinct from ambiguity. Complexity can co-exist with clarity. In fact, one could argue that it is the complexity of a model that is constituted by the process of making explicit what is implicit in the simpler model, and thereby seeing the alternative possibilities not considered. From this perspective, simplicity is often just hidden complexity. The elaboration of simplicity that comes with *additions* to the model may make the overall model much more complex, but it is that very complexity which is the clarification.

Second, the complexity of a model may make it more difficult to communicate the gestalt reflecting the overall process. As complexity grows, the burden on the individual presenting the model and its results grows correspondingly. But it is possible, and attempts to render the process in its most general form continue to inform the literature (Turner and Lloyd 1999; Wheaton and Hall 1996).

It is a mistake to think that one can carve away pieces of the model and deal with them separately. We all do it, pushed by the need for clarity, focus, and parsimony. But every time we do so, we risk communicating a convenient untruth that the rest of the model somehow does not matter to this subsection – it does not intrude in any way. And according to the terms of the Stress Process model, it does.

The Stress Process has grown gracefully in part because it is an open source model – to use the computer language metaphor. An open source program accepts input from a general audience. Unlike some theories and some paradigms – which typically do not survive – it is designed for elaboration and further specification. It is a Wiki-paradigm – but with authors.

The Survival of Paradigms

One of the basic Kuhnian propositions about paradigms is that they have a natural course, an intellectual time, a shelf-life. What is imagined in this approach is a very nonlinear model of change and progress in science. New and original ideas play out in further research, until evidence accumulates about shortcomings, failures to explain, and cases outside the paradigm. During this "normal science" phase, progress is referred to as "puzzle-solving" – a phrase which belies the level of innovation of the contributions made. When the level of disconfirming evidence grows to a fatal crisis stage, it is likely that a more inclusive and sufficient paradigm will emerge to replace the previous one – not a supplement, not an update, but a fundamental reconstruction of the whole area of inquiry.

In this approach, science proceeds in fits and starts, and most of the time, people tinker with details of the paradigm. In thinking about the Stress Process model, I wondered whether it's time had come over the last decade – whether the academic universe we operate in was still listening.

The Status Attainment Model

To distinguish the specific course of the Stress Process paradigm from more general historical processes occurring in social science over the last quarter century, I compared this paradigm to the fortunes of another significant and successful social science paradigm – the Status Attainment model.

I was in graduate school at the University of Wisconsin in the early 1970s during the formative phases of the Status Attainment paradigm, and witnessed firsthand, the rise of its influence and the generalization of its core claims and content beyond the original version (Blau and Duncan 1967). This model purported to set out a causal process of status transmission, and therefore maintained inequality, due to status, not class, and not money. It was a distinctly sociological model, riding on top of the economic explanation of power and in opposition to the nineteenth century renderings of how status inequality worked. The model imagined status differences as continuous and therefore subtler to detect than in the two-class models of the nineteenth century or even the earlier twentieth century's elaborations of class into three or five categories, usually emphasizing the middle class as a counterpoint to the class system of the Industrial Revolution. It was interpreted as a functionalist model, though too easily and at times dismissively, with the charge that it emphasized consensus processes and not conflict, as if the observed processes were a natural state.

The original Blau and Duncan model was a simple five variable model of status background translating into eventual socioeconomic achievement via the bestowed advantages in the educational system. It was analyzed using the rules of path analysis, to trace the more versus less important pathways of transmission of status.

Of course, the complexity of the model grew. In 1972, Jencks and colleagues published the now famous book on inequality (Jencks et al. 1972) that managed to incorporate both genetic and environmental influences on attainment in one model. This was a landmark book, but it also signalled a turn in fortunes for the Status Attainment paradigm early in its development. In a review, Miller (1973) refers to the book as a paradigm-breaker, presumably because of the number of findings of the paradigm that come into question under different modeling assumptions. Ironically, I think, the Status Attainment model got to the incorporation of the biological as a necessary elaboration faster and with less conflict than the Stress Process model, which was itself derived from a biological stress model.

By the 1980s the criticism had started to grow, including powerful alternative rhetorics about the nature of social inequality, most obviously, in the work of Erik Olin Wright. Wright (1980), for example, re-invigorates the Marxian foundation of distinguishing social classes to argue that gradational distinctions between classes, including quantitative distinctions of status, did not map to *relational* definitions of class that emphasized social location within social relations of domination and subordination. The area began to debate the relevance of status dimensions versus class itself, i.e., the continuous versus categorical representation of inequality, much in

the same way there is a debate in the sociology of mental health about the relative salience and meaning of distress versus mental disorder. Although not represented this way, the issues are quite similar under the surface: does the phenomenon at issue exist most naturally as a gradient of differences, or as a set of qualitatively distinct categories?

Colclough and Horan (1983) explicitly refer to the Status Attainment perspective as a Kuhnian paradigm, and thus, intentionally or not, predict its eventual death. They make an important and telling point about this perspective: while the Status Attainment tradition produced ground-breaking evidence about the disadvantages of women and blacks in status attainment, by demonstrating their net negative impacts over and above the rest of the usual explanation, the results in this tradition also could not easily *explain* these effects. It was said that the causes of those inequalities occurred at another level of analysis – macro causes that sorted women and blacks into occupational sectors, and the effects of high proportions of disadvantaged groups in occupations on the payoff of those occupations. What were seemingly missing was the structural influences that drove inequality.

The Status Attainment tradition was closely tied to the rise of causal modeling in the discipline, and in a basic sense, that made the tradition both more resistant to outside influence and more daunting to address. These models raised a myriad of possibilities beyond the simple results, and actually helped point to potential problems. As I have said elsewhere about the explicitness of causal models, "it is more important to be clear than correct" (Wheaton 2003). The rise of log-linear models also encouraged a re-direction away from the causal modeling of the Status Attainment perspective, since it included the possibility of category by category analysis in understanding mobility and status transmission while also allowing for analysis of associations in both directions without the need for causal reasoning.

Thus, powerful independent forces seemed to suggest that the Status Attainment perspective was on the wane. But is this the case? Does this paradigm provide a useful test case for comparison to the Stress Process paradigm? To investigate the historical trajectory of these paradigms, I tracked the number of articles, book chapters, and books published each year that mentions either "the stress process" or "status attainment" as a keyword, in its abstract, or in its introductory sections, starting in 1970 for Status Attainment, and 1981 for the Stress Process. The comparison is not fair in one respect: the status attainment model had a few equivalent labels, so that adding "socioeconomic achievement" would have greatly expanded the qualifying publications, whereas the Stress Process was a clear and monopolistic brand name.

The Recent Trajectories of Paradigms

Figure 13.4 shows the trends in explicit application of the Atress Process since 1981 using the Scholar's Portal – results are no different using the Web of Science or Google Scholar. According to the Kuhnian prediction, and the sensed situation among some scholars in the stress tradition, we might expect a rise and decline in the fortunes of this paradigm over time with a decline after the millennium in attention and

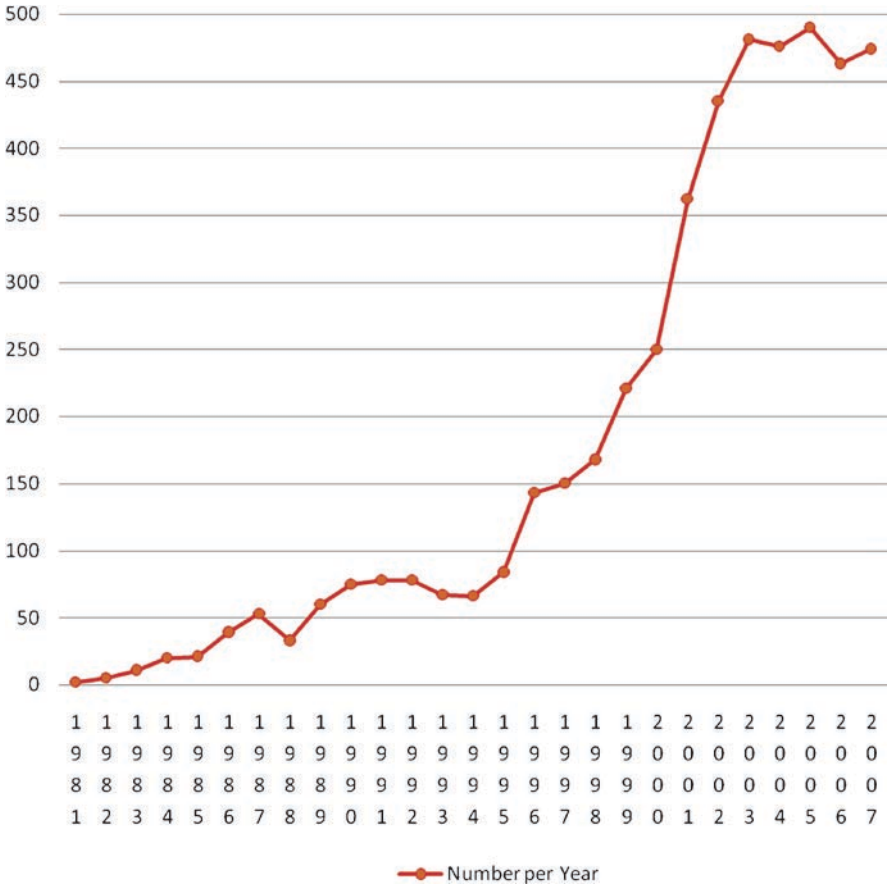

Fig. 13.4 Published papers using the Stress Process, 1981–2007

application. Interestingly, this is far from the case. In fact, the rise in interest and use of the Stress Process since 2000 exceeds its growth over the previous two decades.

This is not what I expected at all. I had expected a natural life cycle to the history of a framework, such that, even without empirical or theoretical challenge, the cumulative history of the concepts involved would lead to a desire to move beyond the terms of this model, and the need to create a new foundation. I expected that invocation of the term "stress" might decline as it became more generalized, more complex, and more differentiated. After all, as we move from a specific meaning of stress as change to a system of related meanings that include generalized notions of threat, pressure, and demand applied to the organism from without (Wheaton 1999), we risk failure to gain attention while also risking the integrity of the model. The notion that stress is not a specific and targeted situation, but a generic reality, is already a common belief. This thought has in fact plagued the paradigm since the beginning of social research on stress.

Instead, what I see is a very healthy paradigm, still expanding, and therefore still incorporating new forms of complexity. How is this possible? Is this a unique case? The same analysis for the Status Attainment paradigm in Fig. 13.5 reveals a similar, though less certain, trajectory. I expected again a picture of the shelf life of an idea. Instead, what I see is a still vital paradigm, and apparently one that has revived itself after attacks in the 1980s and the 1990s. The Status Attainment paradigm has apparently been subjected to many more critical attacks than the Stress Process, and this fact shows in the difference between the trajectories.

This comparison suggests that the stress process has survived relatively unscathed, but it also suggests this is not unique to this particular paradigm. I suggest that the Kuhnian hypothesis about paradigms is no longer as relevant now as it was in the nineteenth and earlier twentieth century, and that the core concept of a "paradigm shift" never applied as clearly to the social sciences as to the physical sciences in the first place.

A close look at Kuhn's examples in *The Structure of Scientific Revolutions* provides clues as to what may not apply at this point in history. First, Kuhn is analyzing examples in the physical sciences during a historical period when data were scarce. Thus small changes in available data had massive impacts on the apparent viability of previous theory. Today, data are plentiful, in fact, and change in knowledge is decidedly incremental. It should not be called "puzzle-solving" – a derogatory term

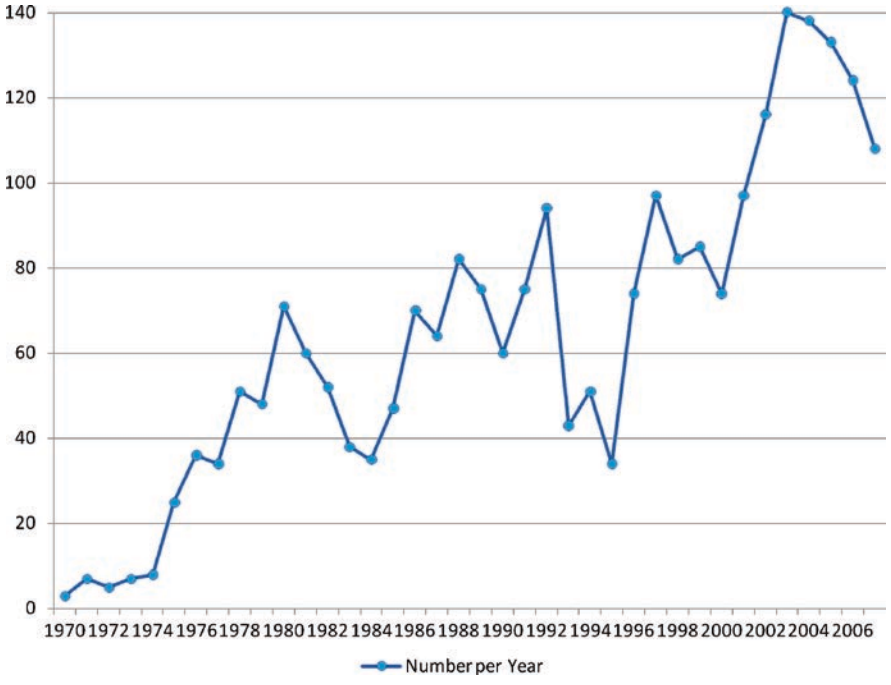

Fig. 13.5 Published papers using the Status Attainment paradigm, 1970–2007

– when the framework at issue is highly adaptable to changes and innovation. This is the second point which has promoted the longevity of the Stress Process: this is a very open system, and thus there is little necessity to start over from scratch with a new set of concepts, to reach a more inclusive and sufficient explanation of the social world. Third, the social sciences are not experimental sciences, and the notion that a definitive experiment can overturn a whole paradigm is implausible. Rather, we proceed in relative baby steps towards clarification, and the process itself thus allows for revision of paradigms in increments. Finally, the fact that both the Stress Process and the Status Attainment paradigms are still growing suggests that part of the reason for the change in the trajectory in paradigms is historical. One factor involved may be the growth of published evidence, both in books and journals, so that everything is growing in prevalence over this historical period. The fact that the number of available places to publish is expanding means more ideas can co-exist simultaneously without threat or competition.

The more qualitative network-based evidence about the survival of these paradigms would proclaim that the stress process is beyond its golden era, but surviving, and the Status Attainment paradigm is more clearly in the past. But reputational and presumed truths are often wrong. Both systems are more flexible and adaptable than they originally may have seemed.

The differences between the trajectories in Figs 13.4 and 13.5 do reflect some fundamental differences between these paradigms. First, the Status Attainment paradigm precipitated a strong opposition relatively quickly, and sometimes from younger scholars trained in the tradition. It is clear that the models published under this approach appeared, in retrospect, to be deceptively simple, and an array of alternative hypotheses and approaches developed. Second, this paradigm came with a driving concern about misspecification of the causal models that expressed its main relationships. This, both allowed micro-attention to the details of these models and narrowed the field of discussion. Adding complexity to these models was difficult because of the basic concern about misspecification: as every variable is added, at least k relationships with other existing variables in the model must be considered simultaneously. The demands on innovation become increasingly daunting. Third, when Jencks brought genetics into the model, this put the whole paradigm in the realm of a relatively exclusive endeavor that required very unusual data. Finally, as pointed out in multiple critiques, the Status Attainment model demonstrated inequalities it could not entirely explain. On the other hand, the comprehensive *empirical* explanation of observed inequality is also not a citable feature of any later general approach, and thus the Status Attainment paradigm may have survived because it performs at least as well as the alternatives.

Stressors at the Core

The core of the Stress Process – the pivotal element of the model – is still and always will be the occurrence of stressors. It was the concept of stressors, both as starting points and as the fallout of structured inequalities, that always formed the

essential linkages between social structure, or social inequality, or social organization, or social context, on the one hand, and differences in psychosocial functioning in the population on the other.

Contributors to the overall model have focused on different elements at different times in its history. I have pointed out before (Wheaton 1999) that four paradigmatic hypotheses emerged from the early work on the stress process, hypotheses that organized the research agenda of the stress process for the next quarter century. These four hypotheses included: (1) *The Trait Hypothesis*, focusing on the variability in the generalizable characteristics of stressors per se (controllability, predictability, undesirability, etc.); (2) *The Differential Vulnerability Hypothesis*, focusing on the relative roles of stress exposure versus vulnerability to stress at the same levels of exposure, especially manifested as differences in access to coping with resources to buffer the impacts of stressors; (3) *The Context Hypothesis*, focusing on the role of social contexts in shaping the exposure patterns, meaning and therefore threat value of stressors when they occur, and thus differentiating stressors on a case by case basis as potentially more or less harmful, or even beneficial, with the added implication that a subclass of all potential stressors must be screened first for meaning before the issue of differential vulnerability even becomes relevant; and (4) *The Stress Domain Hypothesis*, focusing on the elaboration of types and sources of stress to more fully specify the stress universe (and thus better approximate the full impact of stressors in the model), and distinguishing current and recent events from chronic stress, and earlier traumatic stressful events and chronic conditions from current "operant burden" (Turner et al. 1995).

This last hypothesis has played a major role in encouraging the study of the interdependencies of stressors through time as a natural feature of the model, focusing on stress proliferation (Pearlin et al. 1997), and the cumulative role of stressors over the life course (Turner et al. 1995). But the elaboration of the stress universe also adds to the problem of complexity, and also risks the dilution of the basic message. In fact, as one expands the borders of the stress universe to include not only life change events, but also chronic stress, past traumas, nonevents, daily hassles, and contextual stressors (itself a large realm of stressors that are defined by the fact that they do not occur at the individual level, but at the level of a wide array of social contexts, including neighbourhoods, workplaces, schools, families, communities, and even nations on the whole), the question is whether the term "stressor" is capable of grouping these variants into a single class.

Some years ago, Kaplan (1996) concluded that "in the last analysis, the term stress may be unnecessary to accomplish analyses that are executed under the rubric of stress research" (p. 374). In fact, much research on stress goes on without specific reference to the term stress. When we study disasters such as Hurricane Katrina (Kessler et al. 2008), or the impact of 9/11 (Knudsen et al. 2005), or the mental health consequences of sexual abuse or violence (Turner et al. 2006), or the impact of perceived discrimination (Brown et al. 2000), we are studying the impact of various kinds of stressors – whether the word is used or not.

Is there any point in calling these diverse situations and events "stressors"? Wheaton (1999) argues there is a core theme to this diverse set of stress concepts, by defining

stress as referring to *conditions of threat, challenge, demands, or structural constraints that, by the very fact of their occurrence or existence, call into question the operating integrity of the organism.* Use of the term "stress" becomes an enfranchisement that gains access to the terms of the Stress Process model. If the elaboration of the stress universe risks a loss in the core message, it should be evident in a decline in the use of the term "stress" explicitly in articles or the absence of an expansion of the usage of the distinct stress concepts involved in the Stress Domain hypothesis.

Have these distinctions taken root in the literature on stress? In Fig. 13.6, I show article counts from 1981 to 2007 that explicitly address life events, chronic stress, traumatic stress, and contextual stressors as separate entities and as a type of stress (using a variety of synonymous search terms, but all including "stress"). Because of the differences in the scale of the growth of research on these different types of stressors, I include life events and chronic stress in Fig. 13.6a and contextual stress and traumatic stressors in Fig. 13.6b.

The trends in these article counts clearly show a rise in the explicit use of *all* of the four types of stressors counted. If it were the case that life events still dominated the discussion, we would not see results as shown in this figure. And if researchers had not found the distinctions among types of stressors in the stress domain necessary or useful, we would not expect such a growth over time in the use of *all* of these stressors in research.

Research on different types of stressors has grown at different rates. Figure 13.6a shows that in 1981 life events began ahead of other types of stressors. This emphasis continues through 1995, where there is a sudden increase in the study of life events, but after that point, the steady linear increase in the study of chronic stress continues, while the study of life events levels off, so that by 2004, chronic stress catches up with life events as a focus of stress research.

The situation for the other two types is quite different. In 1990, all four types of stress were addressed about equally in the literature. The situation had changed by 1995, when research on both traumatic stress and life events increased suddenly, and stayed at these higher levels over time. Research on contextual stress increased very slowly, until 2003 and after 9/11 and the Iraq War had begun, after which it increased rapidly over the four following years. This may in part be due to the diffusion of interest in neighborhood stress over this same period (Ross and Mirowsky 2001; Wheaton and Clarke 2003; Schieman et al. 2006).

By 2007, research on contextual stress was reported in at least twice the number of articles compared to both life events and chronic stress, and research on traumatic stress is now occurring at ***six*** times the rate of research on life events and chronic stress. These changes reflect important trends overall in stress research that started decades ago, but have come to fruition recently. Three of these changes can be highlighted. First, the life course perspective provided a clear rationale for the study of the long-term impacts of stress across stages of life, from early childhood to later adulthood. The interest in the longer term impacts of stress led naturally to increased attention to childhood traumatic experiences and connections among stressors over time, and apparently, an increased emphasis on major stressors that were capable of long-term impacts. Second, the multilayer approach to stress defined by

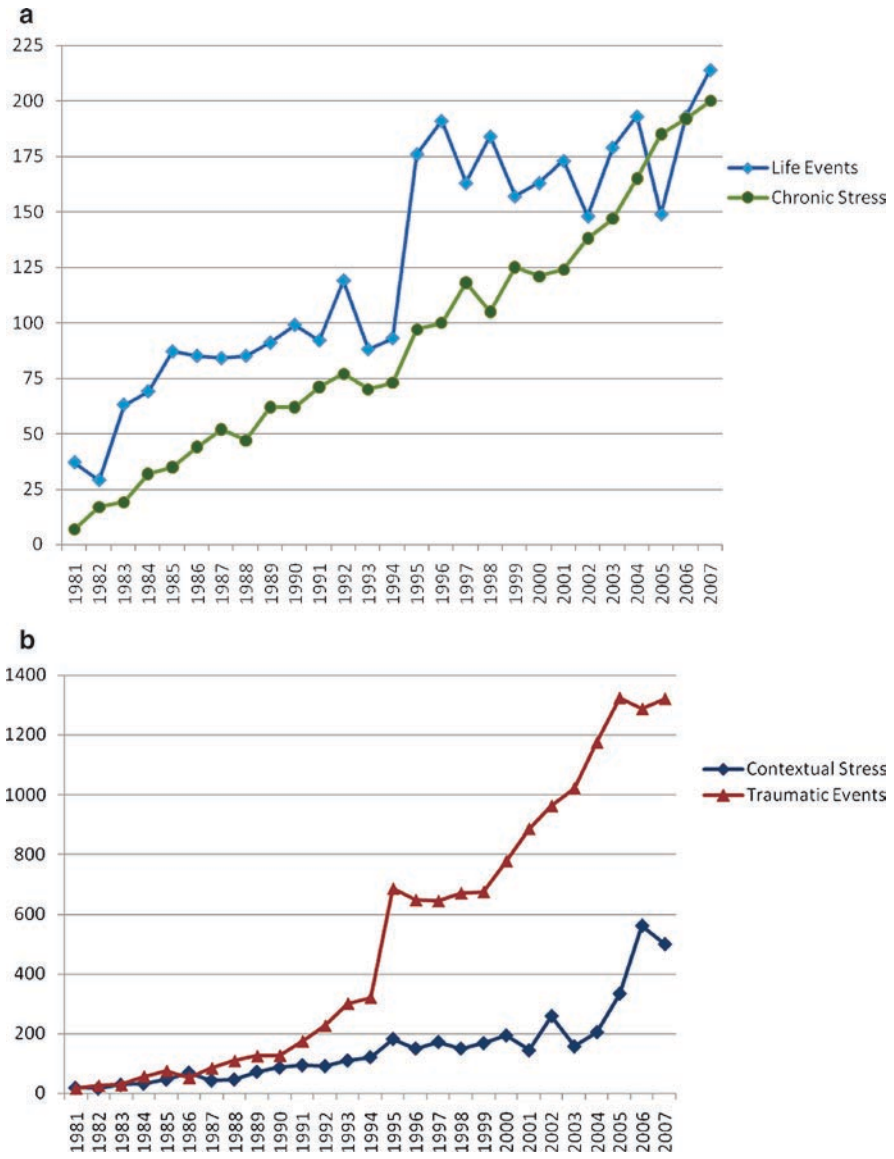

Fig. 13.6 Counts of articles citing specific types of stressors, 1981–2007. (**a**) Life events and chronic stress. (**b**) Contextual stress and traumatic events

distinguishing contextual stressors from other kinds was encouraged by the co-incidence of a number of events – crucial methodological advances in the form of the hierarchical linear model (Raudenbush and Bryk 2002), the natural affinity of sociology for studying stress emanating from and defined by social contexts and not just in individual lives, the obvious importance of studying combinations of stressors across

social levels, and the unfortunate increased visibility of major macroevents that brought national attention to stress at the system level, including the Oklahoma City bombing, 9/11, Hurricane Katrina, and the Columbine shootings in 1999.

Third, and most importantly, even though Fig. 13.6 shows that the study of *classes* of stress is increasing, the basic impact of increased attention to how stressors combine, how layers of stress co-exist and cumulate, and how stress sequences proceed, has been a progressive *disaggregation of stressors,* especially in studies since 2000. Disaggregation here refers to the study of individual stressors – such as sexual abuse, or job loss, or an act of terrorism, or work–family conflict – rather than the entire class of stressors to which they belong. Between 1999 and 2008, there were a total of 116 articles published in the *Journal of Health and Social Behavior* alone on stress. A review of those articles will show that a major portion address specific subclasses or individual stressors, including *economic* or *financial stress, crowding stress, work–to –home conflict, parental stress, stress due to racial/ethnic discrimination,* specific work stressors such as *token stress*, *social rejection stress*, stress regarding *debt, acculturative stress* among immigrants, *role captivity* and *role overload, neighborhood structural disadvantage, neighborhood disorder, communal bereavement, and childhood victimization* (Wheaton and Montazer, forthcoming). These examples make clear that as we consider both the longer view of stressors occurring over lives, and the more inclusive approach combining stress at the individual level with stressors in embedded social contexts, we naturally evolve to a focus on individual stressors as cases of more general types.

The evidence in Fig. 13.6 about the expansion in the study of a range of types of stress gives some clues to the continued health of the Stress Process paradigm: as new distinctions are introduced, or new ideas are offered, they have taken root, and proceeded *without* interfering with the importance of original core elements of the model. Instead of the replacement of concepts, Fig. 13.6 argues for incorporation, accommodation, and continued expansion of the terms of reference of the basic model.

The Stress Process as a Successful Paradigm Exemplar

What explains the continued impact of the stress process over a quarter century after it was introduced? There are a number of possible answers to this question.

First, as noted above, it is an open system, by which I mean that innovations and improvements to the model are welcome. Here I must mention that this is in no small way due to the particular beliefs and academic leadership of its founder, Len Pearlin. Len Pearlin supported and nurtured the new ideas that expanded the stress process, both in its early stages and over time. There is a fundamental dividing line between frameworks that grow and those that do not: they actually reward new ideas, rather than defend the state of the model as it is. Many a theory has begged inattention by insisting on its original formulation, and Len has never done this.

Second, there is also the issue of networks to consider – the people in this volume and the huge network of researchers who find this model useful. Perhaps because

of the subject matter of the model, and the selection factors that precipitate interest in the issue, there was a sense of common enterprise about building and re-shaping the stress process, as opposed to a market competition to see who could be the cleverest person left standing – a problem which has marred the development of some areas of this and other disciplines.

When the life course approach came along, and argued persuasively for the long ripples in people's lives of early events, this perfectly suited the stress process. When the multilevel model afforded the opportunity to argue for the contextual effects of common stressors at levels of social reality beyond the individual, and thus opened a route to discussion of workplace environments, neighborhoods and places in general, macroevents, history, and social networks, the stress process, like a good empire, expanded appropriately and comfortably. In fact, these other approaches with rising influence seemed to open up opportunities to specify fundamental hypotheses of the stress process, if not sociology in general: if we want to demonstrate that social structure truly matters, for example, we knew that we would have to find it beyond the individual level.

Third, the stress process is successful because it works. By the late 1980s, there were at least four reliably demonstrated socio-demographic differences in mental health, involving age, sex, SES, and marital status. Even if each one of these differences is not an obvious marker of social inequality, the fact of their effects on mental health, the social mirror of inequality, is a statement of the potential for inequality inherent in these statuses. Table 13.1 shows results typical of applications of the stress process, using the National Population Health Survey in Canada in 1994, with an N close to 18,000 (Wheaton and Hall 1996). The standard observed relationships for gender, age, income, and the nonmarried versus the married with distress obtain. When we add the rather comprehensive list of stressors and both the social and personal resources measured in this survey to the equation for each, in three of four cases the original effects are entirely explained, and close to 45% of the gender effect is explained. In fact, this gender effect is very close to nonsignificance ($p=0.048$). These equations typically explain over 40% of the variance in distress, not the standard 10–20% that accompanies so many findings across different areas of sociology. In other words, the stress process is typically able to explain what it claims to explain.

Fourth, the stress process has not been widely critiqued outside of its own network. Explicit critiques of the stress process are, on the one hand, rare, and on the other hand, pose difficulties that are shared weak links in most theories, most paradigms, and most methodologies.

Finally, besides the obvious fact of an open-source system and its resulting flexibility, there is a further side-effect of the proclivities of the originator and the networks engaged with the Stress Process model. Whether intentional or not, there has been no attempts in the history of the stress process research to devise definitive tests of "this" versus "that" hypotheses, there has been little taste or time taken in *disproving* others; rather, the basic approach has been to add, to expand, and to create further possibilities. Whatever the genesis of this fact, it has helped support the integrity of the model as a whole: the focus of research has not been to replace and re-direct, but to *alter and specify* the roles of basic concepts in the model as more features of the process are considered.

Table 13.1 Changes in the net effect of sociodemographic factors on distress controlling for successive components of the stress process model, National Population Health Survey of Canada

	Controlling for						
	Bivariate	With controls[a]	Stress exposure	Resource deficits	Stress and resources	Stress by	
						Stress	Resources
Net effects:							
Female							
b	0.191[b]	0.203[b]	0.129[b]	0.143[b]	0.119[b]	0.116[b]	0.114[b]
% change	*(–)*	*(–)*	*(-36%)*	*(-30%)*	*(-41%)*	*(-43%)*	*(-44%)*
Income							
b	–0.137[b]	–0.120[b]	–0.070[b]	–0.052	–0.040	–0.039	–0.037
% change	*(–)*	*(–)*	*(–42%)*	*(–57%)*	*(–67%)*	*(–68%)*	*(–69%)*
Age							
b	–0.110[b]	–0.111[b]	–0.057[b]	–0.058[b]	–0.043	–0.044	–0.047
% change	*(–)*	*(–)*	*(–49%)*	*(–48%)*	*(–61%)*	*(–60%)*	*(–58%)*
Never married[c]							
b	0.312[b]	0.171[b]	0.104	–0.002	–0.003	–0.002	0.008
% change	*(–)*	*(–)*	*(–39%)*	*(–100%)*	*(–100%)*	*(–100%)*	*(–95%)*
Prev. married[c]							
b	0.219[b]	0.232[b]	0.118[b]	0.076	0.054	0.053	0.054
% change	*(–)*	*(–)*	*(–49%)*	*(–67%)*	*(–77%)*	*(–77%)*	*(–77%)*
Model R^2	0.01–0.03	0.03–0.09	0.24–0.25	0.38–0.39	0.41–0.42	0.41–0.42	0.42–0.43

[a]Female controls include age and age squared. Age controls include female. Married controls include female, age, age squared, and trauma exposure. Income controls all of this plus marital status

[b]Effects designated as "significant" using a BIC adjustment for large samples.

[c]Reference group includes currently married, common-law, and with partner.

A Stress Process Without Borders?

Has the Stress Process model expanded so much over time that it has become a "borderless paradigm"? Of course, this cannot be the case. There are, and must be, borders, in order to claim there ***are*** unique features of the Stress Process. At the same time, the successive elaborations of the model, marking its openness and flexibility, suggest that the permeability of borders is a condition for the growth of paradigms. We should remember that at one time stress was equated exclusively with change, that actuated, not perceived, social support was the naturally most potent form, that consequences ranged all the way from distress to depression, that social structure was represented in terms of individual social locations and statuses exclusively, that time and space were independent streams of influence, that stressors combined additively. Paradigms organize these independent streams of research and demonstrate why each is too simplistic. The Stress Process has done that. A good paradigm points to borders that exist, argues why they should not exist, and then expands, but does not remove borders.

At the outer edges of the process imagined by the current Stress Process, there ***are*** borders. Those borders are formed by the interpretive limits of the inner logic of the original paradigm, played out in multiple phases of re-imaginings of multiple contributors. But the borders must operate as relatively invisible – electrically charged invisible fences – for work to proceed.

Final Comments

If you are a deconstructionist in your interpretation of cultural products, you believe that the original producer can be and should be separated from the worth of that product. I am not a deconstructionist in that sense.

Sometimes, it is relevant to make a clear linkage between the impact of an idea and its producer(s). I think there is general consensus that the impact of the Stress Process derives in part from the intellectual authority and credibility of Len Pearlin himself, and his eye and taste for new ideas, intellectual ambition, and original thinking. If we investigate the natural history of ideas, we will often see these components: a framework that embodies others ideas without replacing them, a promoter and producer who influences and supports others personally in their work, and a set of ideas that gains from elaboration and change rather than require new "paradigms." That is a fair description of the Stress Process.

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A Few Afterthoughts

It is an understatement to say that I am deeply honored by this *Festschrift*. To be recognized in this way is a profoundly moving experience, largely because of the individuals who have contributed to the volume. They are former students, colleagues, and others whose work I have admired and from whom I have benefited over the years. I owe them a large debt of gratitude for what they present here and for what I have learned from them in the course of my career. Special thanks are due those who have organized the *Festschrift* and patiently and skillfully shepherded it through to its publication. I am keenly, aware, too, of the timing of this volume. On two occasions I have contributed to similar efforts to honor the work of esteemed fellow sociologists, in each case following their demise. To be very much alive and able to appreciate the thoughtful effort behind this book is a special treat. I plan on enjoying it for many more years.

Looking at the array of chapters has led me to reflect on the stress process and what it represents and how it is used. Essentially, I regard it as a conceptual framework that can serve as a useful guide to much of the work conducted under the large umbrella of research into social stress. In one sense, it contains little that is new, being mainly constructed from a large body of findings produced under the aegis of several research specialties, including social epidemiology, social stratification, medical sociology, social psychology, and aging and the life course. Standing as it does at the juncture of several specialties, it has flourished from a richness of theoretical orientations and empirically based knowledge. Among the many things that have been learned is that stressors come in many shapes and sizes, that there are things that people can do, beliefs they can hold, and relationships they can have that are capable of reducing the effects of stressors on various dimensions of health and well being, and, finally, that status inequalities may underlie all of these components.

Bringing these components and their multiple indicators together within a single framework has helped to create an appreciation of the many social, economic, and experiential factors that potentially exert an influence on health, as well as providing a clearer view of the web of interrelationships among these factors. Moreover, the stress process framework considers stressors, the psychosocial conditions that regulate the health impact of the stressors, and the interrelationships among them

as evolving over time. Thus it moves research beyond treating stress simply as a response to an arousing stimulus, looking at it instead as a dynamic process that takes place over time. I believe that it is partly the breadth and variety of its components and their interrelationships that have led the stress process to be a prominently used paradigm in social stress research.

There is another feature that also contributes to the use of the framework. Namely, it can be thought of as highly flexible, capable of accommodating a broad range of research questions, data, and methods. Thus, the paradigm imposes no constraints on the stressors that are under examination, the social and institutional contexts in which the stressors are located, or the psychosocial resources brought into play. Indeed, the health indicators it employs may range across the domains of mental and physical well being. Ample evidence of this flexibility can be found within this volume. Some bring added refinement to conceptual and methodological issues and others focus on contexts of the stress process – neighborhood, family, occupation, and economic. Still others emphasize psychosocial factors having the potential to perform protective functions. Each of these chapters helps independently and distinctively to amplify the stress process and the stress process, in turn, helps to create some unity among these separate scholarly efforts.

It is entirely predictable that the more that is learned about social stress, the more change there will be in what and how it is studied. In intellectually maturing fields, the theories and concepts on which we rely at one stage of growth may be less valuable at another stage. New questions always arise as old ones are answered and these new questions may require different ways of thinking, leading to different kinds of data. These kinds of changes, I believe, are a sign of vitality and should be sought after. It is also what helps to make the sociology of stress an exciting field of study. Ultimately, of course, the exciting changes are produced by people like those who have participated in this Festschrift. My hat is off to them.

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