

6 Why do some people thrive while others succumb to disease and stagnation? Personality, social relations, and resilience

Margaret L. Kern and Howard S. Friedman

Abstract

This chapter focuses on the role that personality plays in resilience across the lifespan. The concept of personality captures a combination of genetic, familial, social, and cultural elements, and thus is very useful in understanding differential patterns of development. In particular, this chapter highlights findings from our work with the Terman Life Cycle Study, the longest longitudinal study conducted to date, to demonstrate how core aspects of the individual may impact how he or she travels life's pathways and reacts to life's challenges. Our findings suggest that temperamental predispositions, internal stress, coping responses, social relationships, and health behaviors may all be relevant to whether an individual will thrive and stay healthy in the face of challenge or succumb to illness and disease. By identifying the mechanisms involved, we can better understand risk and intervene more effectively, with the goal of increasing resilience as people age.

It is easy to observe striking individual differences in healthy aging. Consider these two cases drawn from our lifespan studies of longevity. Elmer was constantly on the go — involved in everything and friends with everyone. In the morning he raised funds for a benefit concert to support the children's hospital; in the afternoon he bowled with his buddies; in the evening he cared for his wife and enjoyed the company of his children and grandchildren. Although he had to change jobs at the age of 50, was diagnosed with prostate cancer at the age of 67, had a major heart attack at the age of 80, and lived through a series of personal and financial setbacks, he recovered from each challenge and lived a productive, fulfilling life up until the day of his death at the age of 92. In stark contrast, Ida was a reserved, sedentary woman. She loved to read, but as she aged, she developed diabetes at the age of 75, gradually lost her vision, and subsequently slipped into depression. Dementia then appeared, and she slowly detached from life until her death at the age of 93.

Trajectories across adulthood and later life outcomes can look very different, depending on the individual. For some, there are chronic illnesses, frayed relationships, cognitive impairment, or deterioration toward an early death. Others lead a life of personal fulfillment and many productive years. What distinguishes these different patterns and outcomes? A web of factors leads to health and resilience or disease and stagnation; in most cases, there is no simple cause or cure. Understanding the details of this complexity allows for better-informed theories, empirical studies, and interventions.

In this chapter, we focus on the role that personality plays in resilience across the lifespan. Personality captures a combination of genetic, familial, social, and cultural elements, and thus is very useful in understanding different patterns of development. Individual differences matter for resilience, health, and longevity, but not in a simple manner; we are influenced by our histories, present circumstances, and future expectations. Across the life-course, lives unfold and personalities interact with both random and non-random social contexts.

Healthy aging and resilience: a multidimensional process

Over the last century, along with the general demographic of a graying population, notions of health and aging have changed considerably. In the early 1900s, the average life-expectancy in developed countries was from 35 to 55 years, with acute infectious diseases such as tuberculosis and influenza being the primary causes of death. The life-expectancy at birth is now over 77 years, and the average healthy adult will live well into his or her eighties (Centers for Disease Control and Prevention, 2007; US Department of Health and Human Services, 2000). Changes in living conditions and public health – better nutrition, vaccinations, sanitary and less-crowded living environments – had the primary influence; but new and improved pharmaceuticals and medical care also substantially contributed. However, there is now a much higher prevalence of chronic illnesses, with cardiovascular disease and cancer being the overwhelmingly predominant causes of diseases and death in adulthood. At both the individual and societal level, there is increasing focus not only on length of life, but also on aging in a healthy, connected, and productive manner. This is termed *successful or healthy aging*.

Health can be conceptualized as a state or as a process. The former derives from the traditional biomedical model; the latter extends from

the biopsychosocial model (Friedman and Adler, 2007; Ryff and Singer, 1998). In the traditional biomedical perspective, health is defined as a lack of disease, disability, and pathological breakdown. That is, you are healthy until illness strikes, and medicine aims to identify and fix symptoms to re-establish a state of non-illness. From this perspective, aging is a natural, progressive breakdown of physiological systems until death, and successful aging involves accepting and managing this decline (Aguerre and Bouffard, 2003; Anantharaman, 1979; Chapman, 2005; Havighurst, 1961; Siegler, Bosworth, and Elias 2003). The resilient are those who recover – the heart attack victim who survives, the cancer patient who goes into remission. In contrast, the biopsychosocial perspective defines health as a general sense of well-being that evolves over time, and refers not only to physical well-being, but also includes mental, cognitive, social, and functional components (World Health Organization, 1948). Health is more than a singular outcome to achieve; it involves a process of challenge, negotiation, and adaptation that unfolds across the life-course (Aldwin, Spiro, and Park, 2006; Aldwin *et al.*, 2001; Baltes, Lindenberger, and Staudinger, 2006; Baltes, Staudinger, and Lindenberger, 1999; Clipp, Pavalko, and Elder, 1992). The resilient are those who face major challenges across one or more domains and yet find ways to adapt.

From this life-course biopsychosocial perspective, individuals develop specific skills, select situations, build resources across multiple domains of life, and attempt to maneuver challenges that arise. The person must find ways to cope with or adapt to these changes, either through shaping and controlling the surrounding environment, or by adapting and controlling inner thoughts and feelings (Rook, Charles, and Heckhausen, 2007; Schultz and Heckhausen, 1996). Success involves negotiating interdependent challenges across the lifespan. Health continues when balance across multiple life domains is maintained.

Length of life is also important to consider. After death, there is no health. Although such a formulation may seem simplistic at first glance, there are important reasons, both conceptual and analytical, to consider quality-of-life years (Diehr and Patrick, 2003; Kaplan, 1994, 2003). That is, we need to consider both the number of years lived and the health quality of each year. Further, measures of healthy aging are often subjective in nature (e.g., self-rated health, life satisfaction, mental well-being) and share method and definitional variance with psychosocial predictors of interest. Longevity is a valid, distinct, objective outcome that temporally follows other variables.

Resilience can be defined as successful functioning despite serious challenge or chronic stress (Cicchetti and Valentino, 2006; Masten,

2006). It is a dynamic process that unfolds across the life-course and necessarily involves both the individual's trajectory and his or her current psychosocial context. Together, healthy aging and longevity are consequential outcomes that can serve as markers of personal resilience.

Personality: a framework for studying resilience

Who recovers from challenge, remains alive, and ages in a healthy manner? What distinguishes these individuals from other, less resilient individuals? As our models and theories become more complex, nuanced, and representative of actual real-world processes, personality research can capture the biopsychosocial processes that demonstrate both stability and change across time, providing a framework for understanding personal resilience within the individual's social context (Friedman, 2007; MacKinnon and Luecken, 2008; Smith and Spiro, 2002).

Links between the person and health go back thousands of years. The ancient Greeks thought of the body as consisting of four humors, which were extended to personality-type characteristics and health outcomes: phlegmatic (apathetic, associated with rheumatism); choleric (hostile, associated with feverish diseases); melancholic (sad, associated with depression, degenerative diseases, and cancer); and sanguine (ruddy, associated with optimism and health). Hippocrates, Galen, and their followers believed that disease stemmed from an imbalance of these humors. Because the Greeks were such keen observers, it is perhaps not so surprising that modern research efforts have returned to focusing on linking negative traits such as repression, alexithymia, depression, hostility, and negativity with disease outcomes. For example, hostility has been associated with increased risk of heart disease and greater mortality risk (Bunde and Suls, 2006; Caspi, Roberts, and Shiner, 2005; Smith, 2006; Smith *et al.*, 2004). Neuroticism and depression have been associated with poorer health, although there are still unanswered questions concerning the links to objective health outcomes (such as mortality) versus perceived well-being (Charles *et al.*, 2008; Friedman, 2007; Friedman and Booth-Kewley, 1987; Mroczek and Spiro, 2007; Rosmalen *et al.*, 2007; Shipley *et al.*, 2007; Stone and Costa, 1990; Suls and Bunde, 2005).

The dominant model in modern personality research is the Five-Factor Model (or the Big Five). Although the model has limitations, it offers a general framework for structuring studies on personality and health (Carver and Miller, 2006; Caspi *et al.*, 2005; Duberstein *et al.*,

1999; Smith and Williams, 1992). The main factors are typically labeled agreeableness (cooperative, trusting, kind, generous); conscientiousness (orderly, achievement motivated, responsible, planful); extraversion (sociable, assertive, active); neuroticism (anxious, depressive, experiencing the world as distressful); and openness intellect (imaginative, creative, tolerant, intellectual).

In recent years, attention in personality research has shifted from a sole focus on negative traits to positive, sanguine-type traits, such as optimism, extraversion, and conscientiousness (Friedman, 2007; Goodwin and Friedman, 2006; Smith, 2006). A recent meta-analysis found that higher levels of conscientiousness are consistently linked to lower mortality risk (Kern and Friedman, 2008). In fact, the predictive value of a conscientious, dependable personality on health and longevity appears as strong as or stronger than many risk factors, including socioeconomic status and IQ (Batty *et al.*, 2009; Deary *et al.*, 2008; Ozer and Benet-Martinez, 2006; Roberts *et al.*, 2007). Individual differences clearly matter when considering later life outcomes such as health and resilience.

Linking personality and health

By studying differential relations between aspects of personality, the social context, and multiple components of health across long periods of time, we can better identify potential mechanisms involved. Conceptually, personality and health can be linked through various pathways (e.g., Friedman *et al.*, 1993; Smith, 2006). For example, Figure 6.1 presents several likely links – through the behaviors people engage in, physiological reactions to internal and external challenges, underlying biological factors that impact both health and personality, and social influences and relationships that occur over time.

According to the *behavioral model*, personality influences the behaviors that people engage in, which subsequently impact health and well-being. Key health behaviors include preventive behaviors such as nutrition, physical activity, sleeping well, and receiving immunizations and regular medical check-ups; and risky behaviors, such as drug and alcohol abuse, smoking, and risky sex (Gochman, 1997). It is commonly acknowledged that engaging in health-protective behaviors and avoiding risky behaviors link to better health and lower mortality risk, with the strongest association evident for smoking (US Department of Health and Human Services, 2000). There is also ample evidence linking personality to health behaviors (e.g., Caspi *et al.*, 1997; Markey, Markey, and Tinsley, 2003), with conscientiousness being most consistently related to more health-protective behaviors and fewer risky

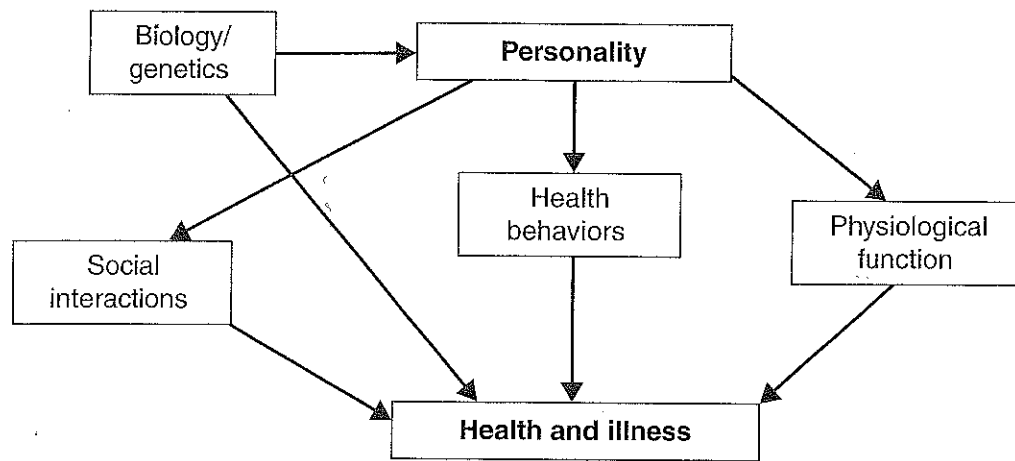


Figure 6.1. Pathways linking personality and health outcomes.
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behaviors (Bogg and Roberts, 2004). Long-term studies have suggested that health behaviors may partially mediate the link between personality and health outcomes, but there remains much unexplained variance, indicating that other pathways are also relevant (Friedman *et al.*, 1995; Hampson *et al.*, 2007).

According to the *internal stress model*, personality influences how people react to stressors encountered in the internal and external environment. People vary tremendously in the amount of objective and subjective stress experienced, perceptions of stressful events, and coping responses; these in turn can affect psychophysiological responses. In particular, high levels of stress can trigger a state in which the heart beats faster, breathing speeds up, cortisol levels increase, inflammation increases, and immune function is depressed – an elaboration of the classic flight-or-fight response first proposed by Walter Cannon in the 1920s (Cannon, 1932; Kemeny, 2007). Although in the short term this reaction may be adaptive, in the long term (i.e., regularly reacting with hostility, anxiety, and depression), such a chronic response pattern becomes detrimental. Over time, negative psycho-emotional reaction patterns disrupt metabolism, immune function, and physiological rhythms, increasing susceptibility to illness, disease, and general breakdown (Kemeny, 2007; McEwen, 2006). Illness in turn further affects psychological functioning, creating a negative cycle toward ill-being.

According to the *genetic or temperamental predisposition model*, relations between personality and health or longevity are spurious, stemming from an underlying tendency to be both maladjusted and unhealthy. For example, there is some evidence that serotonin is linked to higher levels of conscientiousness, lower levels of impulsiveness, and genetic variations

in systems affecting cortisol responses (Carver and Miller, 2006, Wand *et al.*, 2002). Thus, underlying biological differences may drive personality–health associations. More work with animal and behavioral genetic studies, along with advances in neuroscience, may be informative in highlighting such nuanced biological processes (Cavigelli, 2005; Friedman, 2008; Mehta and Gosling, 2008; Weiss, Bates, and Luciano, 2008).

Personality also links to health outcomes through *social interactions* – early socialization factors, the situations that people select, relationships with others, and the overall social, cultural, and historical context. Socialization begins early in life; temperament and early experiences combine to set positive or negative trajectories, and people are subsequently pulled toward situations and experiences that maintain those patterns (Caspi and Bem, 1990; Caspi and Roberts, 1999; Caspi *et al.*, 2005; Friedman, 2000; Rutter, Kim-Cohen, and Maughan, 2006; Sroufe, 1997; Sroufe *et al.*, 1999). For example, happy, securely attached infants are more likely to develop better social skills, self-confidence, and cognitive skills than difficult, insecurely attached infants (Fraley, 2002; Ranson and Urichuk, 2008; Schneider, Atkinson, and Tardif, 2001). In turn, interactions between the person and the social context affect personal trajectories toward health or illness. Importantly, although early relationships can set the stage for later outcomes, personality, socio-environmental factors, and the interaction of the two throughout childhood and beyond can alter trajectories and subsequent outcomes.

Most likely, there is no single pathway involved; rather, multiple biopsychosocial forces interact to drive the relations we see. This key point is often overlooked by more narrowly focused empirical research.

Insight from the Terman Life Cycle Study

To understand how life processes unfold over time, discover mediating mechanisms, and determine moderators of different relationships, it is essential to use long-term longitudinal studies. Yet to truly understand lifelong biopsychosocial processes, collecting appropriate data would involve a lifelong commitment, extending well beyond the lifetime and resources (both in terms of time and funding) of a single individual. Archival studies offer a way to study processes over time. By creatively using and expanding existing resources, we can address lifespan questions that are impossible in shorter-term studies (Block, 1993; Friedman, 2000).

One such study is the Terman Life Cycle Study. The study was begun in 1922 by Lewis M. Terman, initially as a descriptive study of gifted Californian children (Terman *et al.*, 1925). Between 1922 and 1928,

over 1,500 children and adolescents were assessed on a broad array of demographic, familial, psychological, cognitive, health, and social variables. Affectionately known as the "Termites", the participants were followed throughout their lives, completing written assessments every five to ten years, with the last formal assessment in 1999. We have supplemented this information by collecting death certificates and creating new psychosocial measures from the data, presenting a full lifespan picture of most of the participants (see Friedman, 2000 for a more complete description). The Terman study is the longest longitudinal study that has been conducted, and the archived information is an immense resource that offers a unique lifespan portrait of these individuals' lives.

Over the past two decades, our research team has studied the lives of these individuals. Together these studies offer insight into pathways towards resilience or stagnation, as individual lives unfold within the context of broader social contexts. What can we learn from this rather extraordinary sample?

Personality effects on longevity

In the first lifespan study with this sample, Friedman and colleagues (1993) examined the effect of childhood personality on mortality risk. At the initial assessment in 1922, parents and teachers rated the children (average 11 years old) on 25 different personality traits. Using a combination of rational assessment and empirical analyses, six different personality characteristics were identified: sociability, self-esteem/motivation, conscientiousness, cheerfulness, energy/activity, and permanency of moods. We gathered death certificates to ascertain and verify age at death, and the personality traits were used to predict how long people lived. Interestingly enough, children who were rated high on conscientiousness were less likely to die at any given age than those who were rated low on conscientiousness. Thus, personality ratings of conscientiousness were important for a very significant health outcome (longevity) across a seven-decade period.

This intriguing finding has been followed up by other studies, using diverse samples; all have found a certain degree of support for this finding. For example, in a group of chronic renal insufficiency patients, more conscientious individuals lived longer over the course of a two-year period (Christensen *et al.*, 2002). Similar findings were found in a group of elderly clergy members (Wilson *et al.*, 2004) and a group of frail elderly adults (Weiss and Costa, 2005). Even conscientious presidents lived longer (McCann, 2005). Extending from this, we meta-analytically combined the results of 20 studies, and found a significant protective effect of

conscientiousness on mortality risk (Kern and Friedman, 2008), similar in magnitude to the effect of IQ, and stronger than the effect of socioeconomic status (Roberts *et al.*, 2007).

Taking this a step further, in a lifespan analysis, patterns of personality should be examined. For the Termites, we developed a measure of adult personality, representing four of the Big Five factors (conscientiousness, extraversion, neuroticism, and agreeableness), using the 1940 reports (when the participants were about 30 years old) (Martin and Friedman, 2000). Combining child and adult reports, both childhood and adult conscientiousness independently predicted lower mortality risk (Martin, Friedman, and Schwartz, 2007). That is, individuals who were high on conscientiousness as a child or as an adult were at a lower mortality risk throughout their lives. Further, individuals who were consistently high on conscientiousness were at the lowest mortality risk, individuals who were consistently low on conscientiousness were at the highest mortality risk, and others were in the middle. Personality differences are clearly relevant to later life health and longevity, but the question becomes how personality and health are linked (what are the mechanisms involved) and under what conditions a particular relationship holds (for whom and when).

Early experiences: parental divorce in childhood

Cumulative pathways to older-age health and resilience need to be considered by examining the sequelae of personal inclinations, beginning with early influences that set up trajectories toward or away from health. In several early studies with the Terman participants, we examined the impact of experiencing parental divorce as a child on lifelong health and longevity. Other researchers have linked the experience of parental divorce to poor child, adolescent and adult health and well-being outcomes; we extended this approach across the lifespan. For the Termites, experiencing parental divorce prior to age 21 resulted in an almost four-year decrease in average life-expectancy (Schwartz *et al.*, 1995). The increased mortality risk could not be explained by childhood health status, familial socioeconomic status, or childhood personality traits. Further, losing a parent to death was not associated with such dramatic increases in risk, suggesting that it was something about the conflict of the divorce itself that increased risk for poor outcomes, rather than not having a parent available.

In a follow-up study, we examined potential mediators, including education, health behaviors, social relationships, and psychological well-being (Tucker *et al.*, 1997). The risk of parental divorce could partially

be explained by the activities that individuals subsequently engaged in throughout their lives. For example, men who experienced parental divorce were less involved in the community and pursued less education, women were more likely to smoke, and both men and women were more likely to experience conflict and divorce in their own marriages. Supporting developmental theories of the pervasive influence of early experiences, these findings suggest that facing parental divorce as a child may mark the beginning of a trajectory toward ill-being.

Here is where the idea of resilience enters the picture. Although early experiences such as parental divorce increase risk for adverse outcomes, children are not doomed to failure. For the Terman children, many participants who experienced parental divorce did not die prematurely or experience adverse health and well-being consequences. What distinguished these resilient individuals? To examine this matter, we examined pathways leading to health and well-being versus maladjustment and mortality in the face of parental divorce (Martin *et al.*, 2005). Potential predictor variables included positive and negative family attributes, marital stability and satisfaction, life satisfaction and achievement, and risky health behaviors (obesity, smoking, and alcohol abuse). Although parental divorce was related to worse health habits, less marital stability, and adverse health outcomes, this risk was ameliorated among individuals, especially men, who achieved a sense of personal satisfaction by midlife. Figure 6.2 displays this relationship. Despite experiencing early adversity, individuals who managed to get their lives back on track and found a sense of meaning and achievement by midlife tended to avert detrimental outcomes as they aged.

Further, boys from families with more positive family attributes had a slightly higher mortality risk than those with fewer, a finding consistent with the conclusions of other researchers (e.g., Amato, Loomis, and Booth, 1995; Wheaton, 1990) who have found that dismantling a seemingly functional family may be more traumatic than the dissolution of a clearly troubled family. Importantly, although it might be expected that life satisfaction at middle age would be predictive of lower mortality risk for all, we found that it made a difference only for those from divorced homes. That is, it was through challenge that benefit arose; finding meaning in the face of difficult experiences is seemingly relevant for achieving health and well-being in older age.

Social stress: marital history

Modern personality theory suggests that life stresses and events such as marriage and divorce, career outcomes, and health events are not

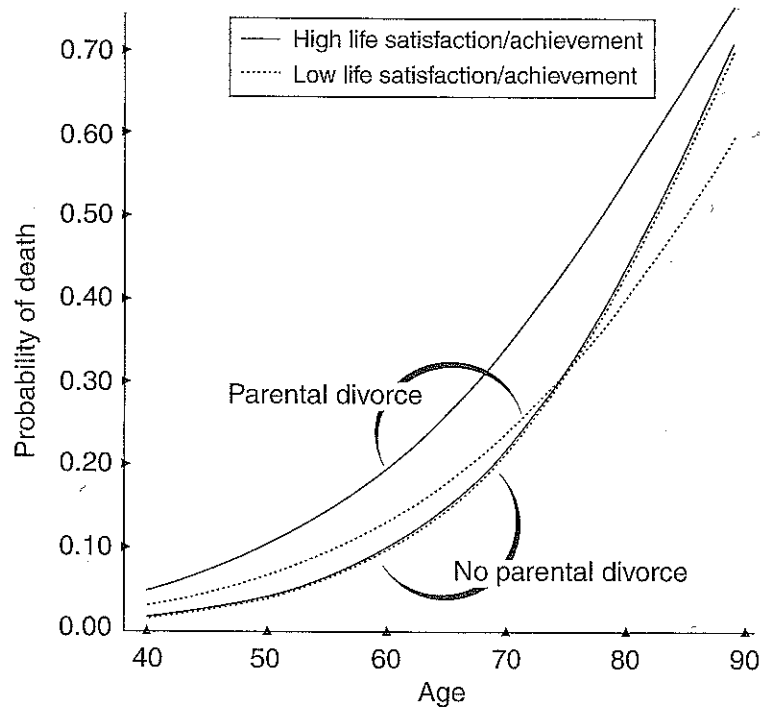


Figure 6.2. Probability of dying at a given age by life satisfaction and parental divorce status. Copyright © Howard S. Friedman.

fully random, but are influenced by personality (Caspi and Roberts, 1999; Caspi *et al.*, 2005). For example, evidence suggests that people self-select into certain marriages that ultimately end in divorce (Johnson *et al.*, 2004; Larson and Holman, 1994). One way that personality and health are linked involves *tropisms* – movements toward or away from suitable environments, situations, and experiences (Friedman, 2000). Early experiences set the individual on a positive or negative trajectory, and then personality-based tropisms pull the individual towards certain environments that subsequently maintain patterned responses and lifestyles over time. Such continuity is likely to continue, unless the internal or external milieu changes enough to override habitual patterns (Caspi and Bem, 1990).

Divorce can be one such change in people's lives, with serious deleterious health effects. It is commonly believed that marriage itself offers important health benefits – there is common advice to “get married to stay healthy.” Although married men do tend to live longer, research suggests a more complicated picture. Personality, health behaviors, the social context, the environment, and marriage impact one another over time. For example, using data from the Mills Longitudinal Study of Women, Roberts and Bogg (2004) examined the interrelations of social responsibility (conscientiousness), health behaviors (drug and alcohol

use), and socio-environmental factors (marriage and work) over a 30-year period. Individuals who were conscientious developed more stable marriages and used fewer substances, consequently decreasing risk of adverse health outcomes. At the same time, improving health behaviors, entering into a stable marital relationship, and increased work responsibility increased levels of conscientiousness over time. Such findings support a sequential interactional perspective, in which an interplay occurs among personality, behaviors, and situations over time.

Again, the Terman participants offer a fascinating insight into the complexity of these lifespan processes. We examined the association between marital status and mortality risk, focusing on whether links are due to the benefits of being married, the detrimental effects of marital breakup, selection effects (i.e., troubled individuals choosing marriages that are bound for trouble), or some combination (Tucker *et al.*, 1996). Mortality risk was compared across the following four groups: consistently married; inconsistently married (currently married but previously divorced); currently separated or divorced; and never married individuals. In addition, several psychosocial factors were included as follows: childhood personality (conscientiousness, cheerfulness, and permanency of moods); midlife self-reported health; and social ties. As expected, individuals, especially men, who were divorced at midlife were at higher mortality risk as they aged and consistently married individuals were at the lowest risk. Interestingly, for never-married individuals, other social ties ameliorated any increased risk due to staying single; that is, as long as unmarried individuals had other significant social relationships in their lives (such as friends and family members), a lack of a spouse was inconsequential. Importantly, the inconsistent group (individuals who were currently married but had experienced marital dissolution in the past) was at significantly higher mortality risk than the consistently married group (despite their current marriage), suggesting that the earlier conflict may have continued to exert a negative influence. Thus, it is not simply the state of being married that is beneficial.

Moreover, personality played a role. Conscientious individuals were both more likely to be consistently married and to live longer. That is, part of the relation between conscientiousness and longevity was driven by a personality-based tendency toward stable relationships, which in turn related to lower mortality risk. This points to the tropisms of personality; individuals are pulled towards certain relationships that are more or less likely to breed conflict, and subsequently lead towards health or ill-being in older age.

Personality and situation interactions: career success

Work and career can be sources of both stress and social integration. Focusing on the male Terman participants, we examined whether personality characteristics moderate health outcomes. Careers are an integral part of life; during early and mid-adulthood years, more time is spent at work than on any other activity. Aside from the obvious function of providing income, careers relate to social roles, self-concept, ambition, and well-being, and may have long-lasting social and health outcomes. Conscientiousness has been linked to better work performance (Barrick and Mount, 1991; Gelissen and de Graaf, 2006; Ozer and Benet-Martinez, 2006; Roberts *et al.*, 2007; Schmidt and Hunter, 1992), and so we investigated the role of conscientiousness in career and health outcomes.

In 1940, Terman and his colleagues rated male participants on vocational success (Terman, 1942). The 150 most successful and 150 least successful men were identified, based on their occupational prestige, job performance, leadership in the workplace, honors received, and annual income. Terman then compared the two groups on a large range of child and young adult variables. By young adulthood, different pathways were evident. Family background, parental marital stability, personality (including drive to achieve), and marriage separated the successful from the unsuccessful.

Extending these early analyses, we examined the relation between childhood conscientiousness, career success, and mortality risk through 2006 (Kern *et al.*, 2009). Again, the tropisms of personality were apparent – more conscientious children were more likely to have successful careers, which in turn predicted lower mortality risk. However, the two factors independently predicted mortality risk. That is, it is not simply the case that some men are more dependable and in control of their impulses and therefore go on to more successful careers and longer lives. Rather, more complex processes appear to influence mortality risk, likely involving biopsychosocial factors across the lifespan.

The story becomes more interesting when we look at the interaction of personality and success. As shown in Figure 6.3, childhood conscientiousness moderated the effect of career on mortality risk. For successful individuals, conscientiousness made little difference – both career success and conscientiousness related to lower mortality risk. For unsuccessful individuals, however, conscientiousness attenuated the negative effects of low success. Again, these findings point to the need to consider characteristic patterns within the context of life events, and to consider both direct and indirect personality-related pathways underlying resilience.

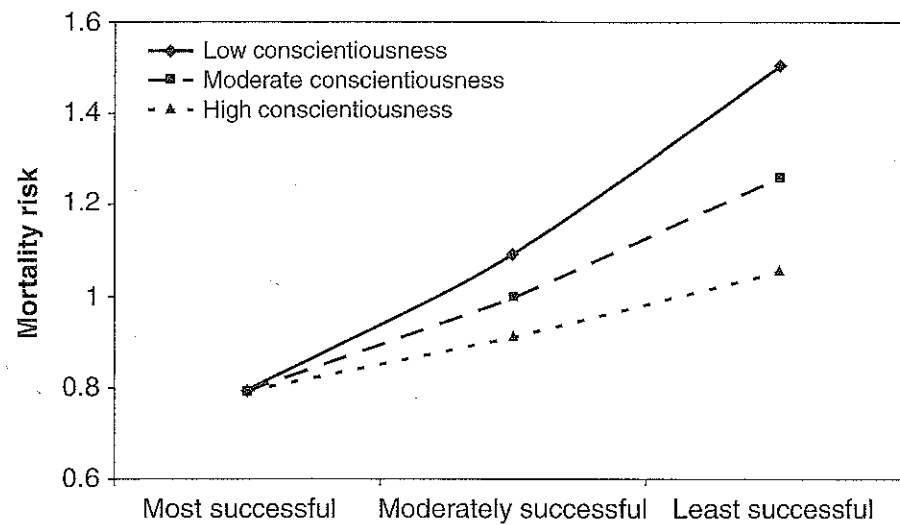


Figure 6.3. Interaction of childhood conscientiousness and adult career success on mortality risk, for men. Copyright © Howard S. Friedman.

Disease-prone versus distress-prone: underlying pathways

There seems little doubt that good mental health is generally associated with good physical health and that neurotic patterns like chronic anxiety and depression are associated with various health problems. Yet the extent to which personal characteristics lead to disease versus simply increasing the report of distress remains unclear.

Two decades ago, Friedman and Booth-Kewley (1987) meta-analytically reviewed the relation between emotional aspects of personality and chronic disease, and suggested a disease-prone personality, in which negative emotions (such as depression, anxiety, and hostility) are generally associated with increased risk of chronic illness. The question remains, however, whether neurotic traits predict actual organic disease, or simply more subjective, distress-prone elements (Stone and Costa, 1990; Watson and Pennebaker, 1989). Increasing evidence suggests that neuroticism indeed predicts increased distress *and* disease, yet pieces of the causal models remain clouded (Charles *et al.*, 2008; DeNeve and Cooper, 1998; Smith and Gallo, 2001; Suls and Bunde, 2005). For example, although personality is generally considered relatively stable, changes in neuroticism may be more important than initial levels in predicting health and well-being outcomes, suggesting the need to consider contextual effects (Mroczek and Spiro; 2007). Similarly, it is unclear whether positive traits predict a lack of disease or simply higher perceptions of health status, especially within the context of lifelong social experiences.

To begin to address these complex conceptual issues, we again turned to the lives of the Termites for insight (Friedman, Kern, and Reynolds, 2010). Using data from the 1986 late-life assessment (when the participants were in their seventies), we empirically developed a multi-component measure of healthy aging that included physical health (absence of serious chronic disease and physical decline), mental well-being (mood, life satisfaction, perceived mental health), social competence (good relations and ties with others), productivity (work, purpose, goals to contribute), and cognitive function (lack of memory and cognitive problems). We also included longevity as an objective and key measure of health. Adult personality (neuroticism, conscientiousness, extraversion, and agreeableness), measured 45 years prior, was used to predict late-life health and longevity.

Importantly, the results suggest that health outcomes differentially related to personality traits measured much earlier in life, and point to some potential underlying pathways linking personality and health. Conscientiousness related to productivity, physical health, and longevity. Combined with the findings from our other studies, this suggests multiple direct and indirect pathways linking conscientiousness to health, likely involving better social relationships, better health habits, and more involvement in life. Extraversion and agreeableness were more relevant to social and subjective outcomes than to physical health or longevity, especially for women. These interpersonal traits have been inconsistently linked to health outcomes and quite possibly work in tangent with other traits and social factors. To the extent that they promote healthy social relationships, good health habits, and interpersonal buffers from stress, they may be helpful, but to the extent that they breed unhealthy habits or dependent relationships, they may be harmful.

Similarly, neuroticism was related more to subjective health outcomes than to longevity. In fact, whereas high levels of neuroticism generally related to poor health outcomes, for the smaller group of men that made it to older age, high neuroticism was protective from mortality risk. Although negative emotionality is often considered detrimental, neuroticism may become beneficial in face of certain life challenges (Taga, Friedman, and Martin, 2009). For example, it may be that distress leads to subsequent beneficial health behaviors, such as better adherence to medical advice and greater avoidance of substances such as alcohol and tobacco when facing the life changes of bereavement. Or, perhaps third variables are relevant; for example, magnified stress and worry experienced by neurotic men when caring for a terminally ill wife may result in a greater degree of emotional relief when the suffering has ended.

Returning to the pathways described earlier in this chapter, it may be that links between conscientiousness, agreeableness, extraversion and later-life health may be more external and socio-behavioral (e.g., staying active, achieving objective success, positive social relationships, and engaging in healthier behaviors), whereas links between neuroticism and later-life health may be more internally based (e.g., negative interpretation of events, increased perceived and actual stress, and negative emotions). Gender also plays a role. Although these data did not allow an explicit tracing of the relevant causal pathways, women were higher on many of the psychosocial dimensions relevant to good health, such as social relationships and health-protective behaviors, whereas pathways were less straightforward for men. Much work remains to be done in this area, but these findings highlight important concepts and pathways that should be pursued in future research.

Conclusion

What does this mean for our understanding of resilience? Resilience is not merely the ability to recover quickly from challenge or misfortune. It involves flexibility and adaptability to stress rather than toughness. Resilience is not a personality trait but rather an emergent attribute – a quality that appears with the appropriate combination of predispositions, behaviors, and socio-environmental circumstances. Further, psychological and physical resilience are not necessarily separate entities, but are often two sides of the same coin. Employing more multifaceted, nuanced, and representative models of real-world processes, we can better understand how individual differences unfold across the lifespan to influence resilience. Core aspects of an individual's personality may affect how he or she travels life's pathways, which in turn impacts later life outcomes, including health and longevity.

What are the practical implications of our findings? Too many interventions are targeted at a single health-relevant behavior or at a single age group. Our studies of personality and health across the lifespan have shown that early experiences carry over and affect later-life challenges and behaviors, and thus important life events should not be ignored. Further, *patterns* of behaviors and reactions, in tangent with consequential experiences and social relationships, need to be considered.

Our findings suggest that temperamental predispositions, internal stress and coping, social relationships, and health behaviors may all be relevant to whether an individual will thrive in the face of challenge or succumb to depression, illness, and disease. In examining why family stability, marital stability, and career success are related to health and

longevity, it would be a mistake to design an intervention to promote *states* (e.g., “get married”) without considering the effects of the intervention on the various complex long-term patterns that people bring to the intervention. Similarly, because personality is so relevant to the effects of life challenge, interventions should take into account the likely multiple effects on a particular individual. For an individual facing career or social setbacks, his or her personality matters a great deal in understanding and affecting later health outcomes.

By identifying lifespan relationships and the underlying mechanisms involved, we can better identify individuals at risk for negative outcomes, determine critical periods of influence, quantify accumulating risk, and intervene more effectively, with the goal of increasing resilience as people age. Although much work remains to be done in this area, differential associations among personality traits, socio-behavioral activities, and health and longevity outcomes across the decades are clearly important, and will be informative to our overall understanding of personality, health, and resilience.

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