B. Interdisciplinary Collaborations

CHAPTER 26

Personality Trait Development in Adulthood

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In the middle part of the 20th century, a healthy dialogue existed between sociology and personality psychology. Leading scholars in sociology actively discussed the relationship between social structure and personality (Neugarten, 1968; Parsons, 1942), and between organizations and personality (Inkeles & Levinson, 1963). In turn, many personality psychologists studied similar phenomena (e.g., Sanford, 1956; Sarbin, 1964). However, over the past several decades the dialogue died out. One reason for the decreased interaction was that personality psychology turned inward as it examined fundamental issues that defined the field, including the scientific viability of core concepts such as stable personality traits (Block, 1968; Mischel, 1968).

Starting in the 1980s, personality psychology began a profound renaissance and has not only answered these basic questions but has become a diverse and intellectually stimulating

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field that encompasses a wide array of topics such as behavior genetics, temperament, motivation, evolutionary psychology, defense mechanisms, emotion, stress and coping, the neural bases of individual differences, and personal narratives (see Pervin & John, 1999). Moreover, the importance of personality traits is no longer in question as research has documented numerous psychological, social, and health-related effects. For example, we now know that childhood temperament not only predicts adult personality (Caspi & Silva, 1995), but it also shapes an individual's accomplishments in work and marriage (Caspi, Elder & Bem, 1987; 1988). Furthermore, personality traits generalize across many different cultures (McCrae & Costa, 1997), and also predict a wide range of outcomes including job performance, status, and satisfaction (Judge, Higgins, Thoreson, & Barrick, 1999), relationship satisfaction (Robins, Caspi, & Moffitt, 2000), divorce (Cramer, 1993), delinquency (Miller & Lynam, 2001), personality disorders (Widiger, Verheul, & van den Brink, 1999), self-esteem (Robins, Tracy, Trzesniewski, Gosling, & Potter, 2002), health (Friedman, 2000), and even longevity (Friedman, Tucker, Tomlinson-Keasey, Schwartz, Wingard & Criqui, 1993).

Since the 1980s numerous longitudinal studies of personality also have been published, providing enough evidence to move personality researchers toward consensus about the degree to which personality traits change over the life course. The emerging story, based on an accumulating body of empirical research, is that personality traits show remarkable levels of continuity given the vast array of experiences that impinge upon a lived life. At the same time, research also reveals that personality traits show important and systematic changes that are meaningfully connected to particular life experiences and contexts.

In this chapter, we will review research on continuity and change in personality traits across the life course. The first section of the chapter describes the debate about whether personality traits can change, and then summarizes longitudinal research on the degree of continuity (i.e., rank-order stability) in personality traits from childhood to old age. The second section summarizes mean-level changes in personality traits from childhood to old age. The third section addresses why personality traits change, and reviews findings from longitudinal studies that have investigated the impact of life experiences on personality change.

RANK-ORDER STABILITY OF PERSONALITY TRAITS FROM CHILDHOOD TO OLD AGE

We first consider the degree to which there is continuity in personality from childhood through adulthood. Continuity can be measured using many different statistical indices, but most often it is indexed by the correlation between personality scores across two points in time (i.e., test–retest correlations). These differential, or rank–order, stability estimates reflect the degree to which the relative ordering of individuals on a given trait is maintained over time. Rank-order stability is influenced by maturational or experiential factors that differentially affect people, as well as by measurement error.

Two contradictory predictions have been proposed about the rank–order stability of personality traits. The *classical trait perspective* argues that personality traits in adulthood are biologically based "temperaments" that are not susceptible to the influence of the environment and thus do not change over time (McCrae et al., 2000). From this "essentialist" perspective, we would expect the test–retest correlations to be high, even in young adulthood. In contrast, the *contextual perspective* emphasizes the importance of life changes and role transitions in personality development and suggests that personality should be fluid, prone to change, and yield low test–retest correlation coefficients, particularly during young adulthood (Lewis, 1999).

Existing longitudinal studies do not support either of these extreme positions. The findings of a recent meta-analysis of the rank–order stability of personality confirmed five major conclusions (Roberts & DelVecchio, 2000): Test–retest correlations over time (a) are moderate in magnitude, even from childhood to early adulthood. Furthermore, rank–order stability (b) increased as the age of the subjects increased. Test–retest correlations (unadjusted for measurement error) increased from 0.41 in childhood to 0.55 at age 30, and then reached a plateau around 0.70 between ages 50 and 70 (see Figure 26-1). Rank-order stability (c) decreased as the time interval between observations increased, (d) did not vary markedly from trait to trait, and (e) did not vary markedly from method to method (i.e., self-reports, observer ratings, and projective tests), or by gender.

Several conclusions can be drawn from this meta-analysis. First, the magnitude of rank–order consistency, although not as high as the essentialists would claim, is still remarkably high. The only psychological constructs more consistent than personality traits are measures of cognitive ability (Conley, 1984). Second, the level of continuity in childhood and adolescence is much higher than originally expected (cf. Lewis, 1999, 2001), especially after age 3. Although childhood character is by no means fate, there are striking continuities that point to the importance of childhood temperament and the effects of cumulative continuity from childhood through adulthood (Caspi, 2000). Even more impressive is the fact that the level of consistency increases in a relatively linear fashion through adolescence and young adulthood. Young adulthood has been described as demographically dense, such that people make more life-changing decisions (to marry, one's career, children, etc.) during this period than at any other time in the life course (Arnett, 2000; Rindfuss, 1991). Yet, despite these dramatic demographic shifts, personality differences remain remarkably consistent. Third, personality continuity in adulthood peaks later than expected. According to one prominent perspective, personality traits are essentially fixed and unchanging after age 30 (McCrae & Costa, 1994). However, the meta-analytic findings show that rank–order stability peaks some

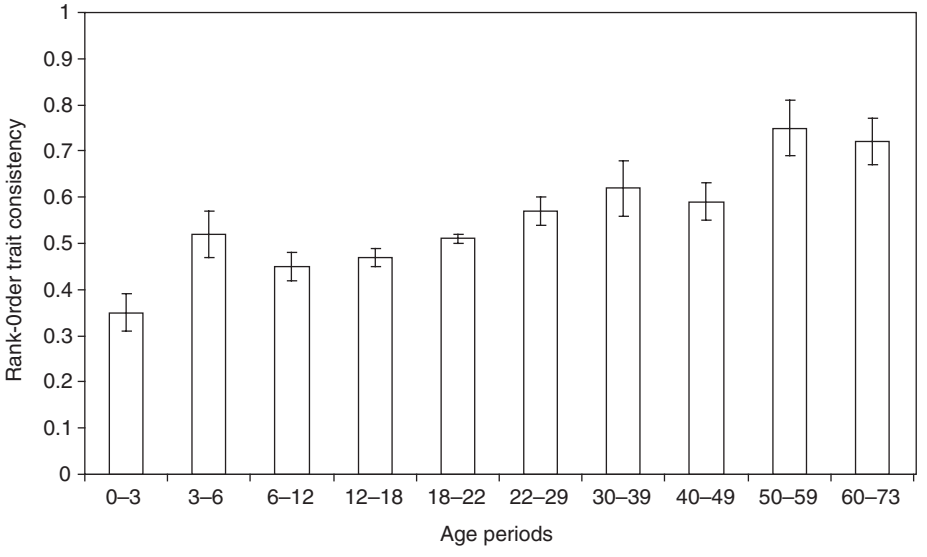

FIGURE 26-1. Population estimates of mean consistency across age categories with 95% confidence level estimates.

time after age 50, but at a level well below unity. Thus, personality traits continue to change throughout adulthood, but only modestly after age 50. Finally, the levels of consistency found in this meta-analysis replicated smaller studies dating back to 1941 (Conley, 1984; Crook, 1943; Schuerger, Zarrella, & Hotz, 1989). Apparently, there have been few if any cohort shifts in the level of rank-order stability in personality traits over the past 60 years.

MEAN-LEVEL CHANGES IN PERSONALITY TRAITS ACROSS THE LIFE COURSE

In the previous section we showed that personality traits show moderate levels of continuity across the lifespan when continuity is defined by rank-order stability. We next turn to mean-level changes in personality. Mean-level change refers to changes in the average trait level of a population. This type of change is thought to result from maturational or historical processes shared by a population (e.g., Helson & Moane, 1987; Roberts & Helson, 1997), and is typically assessed by mean-level differences in specific traits over time, which indicate whether the sample as a whole is increasing or decreasing on a trait. Mean-level stability is theoretically and statistically distinct from rank–order stability. For example, a population could increase substantially on a trait but the rank ordering of individuals would be maintained if everyone increased by the same amount. Similarly, the rank ordering of individuals could change substantially over time but without any aggregate increases or decreases (e.g., if the number of people who decreased offset the number of people who increased).

We will organize our review of mean-level changes in personality traits using the Big Five taxonomy of traits (Goldberg, 1993; John & Srivastava, 1999). The Big Five taxonomy is one of the most significant developments in the field of personality psychology in the last few decades. Many personality researchers now believe that the majority of personality traits can be categorized into five broad superordinate categories: extraversion, agreeableness, conscientiousness, neuroticism (or its opposite emotional stability), and openness to experience. One of the primary advantages of the Big Five framework is its ability to organize previous research findings on the development of personality traits into a manageable number of conceptually coherent domains. So, rather than review the voluminous literature on mean-level change for all possible traits, we can examine the evidence within these five broad domains.*

Studies can be further differentiated into cross-sectional studies of age differences and longitudinal studies of age-related changes. We will review both types of studies in an effort to determine whether there are consistencies across these two approaches to studying personality stability. Cross-sectional studies are often criticized for confounding the effects of age and cohort. That is, the differences found across age groups can be attributed to the culture or climate that an individual was born into and lived through, which is unique to each cohort. Longitudinal studies also are susceptible to cohort effects, but provide a much more direct test of actual change in personality over time. The combination of both types of information affords the most robust test of whether personality traits demonstrate coherent patterns of change with age (Schaie, 1965).

After reviewing the mean-level changes in personality traits demonstrated in each Big Five domain, we will address whether the aggregate pattern of change is consistent with

*Space limitations preclude citing all the relevant articles reporting mean-level changes in personality traits. A comprehensive listing of empirical reports on the topic of personality continuity and change can be obtained from the first author at broberts@s.psych.uiuc.edu

previous descriptions of the mature personality (Allport, 1961). That is, we will pose the question of whether people become more psychologically mature with age.

Mean-Level Changes in Extraversion

Extraversion refers to individual differences in the propensity to be sociable, active, assertive, and to experience positive affect (John & Srivastava, 1999). Interestingly, extraversion does not demonstrate a clear pattern of mean-level change unless one partitions the domain into two constituent elements: Social dominance and social vitality (Helson & Kwan, 2000). Social dominance reflects traits such as dominance, independence, and self-confidence, especially in social contexts. Social vitality corresponds more closely to traits such as sociability, positive affect, gregariousness, and energy level. In many studies, measures described as extraversion reflect more strongly the dimension of social vitality. If one organizes the cross-sectional and longitudinal literature around these two categories then the patterns of development are clear. People increase in measures of social dominance and decrease in measures of social vitality with age.

Cross-sectional aging studies conform closely to this hypothesis. Helson and Kwan (2000) reported a consistent pattern of negative correlations with age across measures of social vitality in six different samples drawn from three different countries. In addition, Goldberg, Sweeney, Merenda, and Hughes (1998) showed that assertiveness was positively correlated with age, while sociability was negatively correlated with age. McCrae et al. (1999) also found decreases in their measure of extraversion which corresponds closely to social vitality. The differentiation between social dominance and social vitality is bolstered by cross-sectional studies of positive affect, which tend to show either no increases or decreases in positive affect with age (see Mroczek & Kolarz, 1998).

Longitudinal studies tracking traits from the domain of extraversion further support the argument that people increase in social dominance and decrease in social vitality during young adulthood. For example, Roberts, Caspi, and Moffitt (2001) reported substantial increases on social potency in a birth cohort followed from ages 18 to 26. In contrast, other studies show declines or no change in extraversion measures that tap social vitality in young adulthood. Viken, Rose, Kaprio, and Koskenvuo (1994) found decreases in extraversion in young adulthood for both male and female twins, and Carmichael and McGue (1994) reported decreases in the EPQ extraversion scale from late adolescence to early adulthood in both women and men. Taken as a whole the evidence points to increases in social dominance and decreases in social vitality in young adulthood.

Longitudinal studies drawn from middle age demonstrate more support for partitioning extraversion into social dominance and social vitality. Four studies have reported increases in traits related to social dominance in the transition from young adulthood to middle age (Cartwright & Wink 1994; Helson & Moane, 1987; Helson & Wink, 1992; Stevens & Truss, 1985). The pattern of development for social vitality in midlife is less clear. Haan, Millsap, and Hartka (1986) reported increases in outgoingness for both men and women between the ages of 30 and 40. In contrast, data from the University of North Carolina Alumni Heart Study showed that three facets of extraversion did not change between the ages of 41 and 50, whereas warmth, activity, and excitement seeking decreased (Costa, Herbst, McCrae, & Siegler, 2000). Although the findings are somewhat inconsistent, the preponderance of evidence points to increases in social dominance and decreases in social vitality in midlife.

Only a few studies have examined change in extraversion-related traits in old age and these have focused exclusively on social vitality. Field and Millsap (1991) found that men and

women decreased in measures of social vitality from ages 69 to 83. In addition, Leon, Gillum, Gillum, and Gouze (1979) found increases in the social-introversion scale of the MMPI in a sample of men from ages 62 to 77, and Pedersen and Reynolds (1998) reported no changes in extraversion in several thousand twins between the ages of 50 and 71. Based on these studies it appears that social vitality decreases in old age, though there is a need for more longitudinal personality studies on this period of the life course.

Taken as a whole, the longitudinal research to date indicates that the differentiation of extraversion into social dominance and social vitality helps to clarify developmental patterns, especially in the period between ages 30 and 60. A clear trend for increases in social dominance can be found through midlife. In addition, decreases in measures of social vitality appear to occur into old age.

Mean-Level Change in Agreeableness

Agreeableness refers to traits that reflect individual differences in the propensity to be altruistic, trusting, modest, and warm (John & Srivastava, 1999). Several cross-sectional studies have demonstrated increases in agreeableness across adulthood. Costa and McCrae (1986) found that a sample of adults between the ages of 35 and 85 scored higher on agreeableness than a college sample. Likewise, Johnson et al. (1983) reported that older people scored higher on agreeableness traits such as kind, warm, and pleasant, and lower on interpersonal abrasiveness (e.g., rude, foolish) than younger people. Most impressively, McCrae and colleagues (1999) showed that scores on the NEO–FFI agreeableness scale increased with age across five out of six cultures.

Longitudinal studies focusing on the transition from adolescence to young adulthood have demonstrated similar findings. Robins, Fraley, Roberts, and Trzesniewski (2001) found that college students increased in agreeableness from ages 18 to 21. Stein, Newcomb, and Bentler, (1986) reported large increases in the traits of congeniality and generosity from adolescence to young adulthood, and McGue, Bacon, and Lykken (1993) reported decreases in aggression from ages 20 to 30.

In middle age, Wink and Helson (1987) found that men showed a significant increase in affiliation between the ages of 27 and 52. Similarly, Haan et al. (1986) reported that both men and women increased in warmth from ages 40 to 54. Dudek and Hall (1991) found a relatively large increase in nurturance from age 40 to 70 in a sample of male architects. Field and Millsap (1991) showed that agreeableness increased for a sample of "old–old" individuals (80 to 90 years old). Although several studies have found little or no change in traits related to agreeableness (e.g., Costa et al., 2000; Stevens & Truss, 1985), the preponderance of evidence points to increases in traits related to agreeableness across the life course.

Mean-Level Change in Conscientiousness

Conscientiousness, which reflects the propensity to be self-controlled, task- and goal-directed, planful, and rule-following (John & Srivastava, 1999), shows changes much like agreeableness. Numerous cross-sectional studies have shown that older people score higher on multiple measures of conscientiousness. Johnson et al. (1983) found a positive correlation between age and traits such as industriousness in samples drawn from Caucasian, Chinese, and Japanese

ancestry. McCrae et al. (1999) showed positive correlations between age and all facets of conscientiousness. Goldberg et al. (1998) found a positive relationship between age and both conscientiousness and restraint. Helson and Kwan (2000) reported almost uniformly positive correlations between age and measures of norm orientation (e.g., responsibility, socialization, self-control) in samples drawn from Great Britain, Baltimore, China, and Detroit.

The findings from longitudinal studies correspond almost perfectly to the cross-sectional data. Stein et al. (1986) reported increases in measures of orderliness, law abidance, and diligence from adolescence to young adulthood. McGue et al. (1993) followed a group of twins for 10 years and showed that they increased on measures of achievement, control, and constraint from ages 20 to 30. Roberts et al. (2001) reported increases in self-control and achievement from ages 18 to 26. Robins et al. (2001) found moderately large increases in conscientiousness from ages 18 to 21 (see also, Haan et al., 1986; Helson & Moane, 1987; Stevens & Truss, 1985).

Conscientiousness appears to either plateau or continue to increase in middle and old age. Costa et al. (2000) reported little or no change in measures of conscientiousness from ages 41 to 50. Likewise, Haan et al. (1986) reported no changes in observer ratings of dependability between ages 30 and 54. In contrast, self-report data drawn from the same sample showed increases in measures of socialization, self-control, and achievement via conformance from ages 33 to 75 (Helson & Kwan, 2000). Also, Helson and Wink (1992) found that women increased on measures of self-control, responsibility, and norm-orientation from ages 43 to 52. Similarly, Cartwright and Wink (1994) found increases in measures of self-control, responsibility, and achievement-via-conformance in a longitudinal study of female doctors from ages 31 to 46. The two studies that have examined changes in conscientiousness beyond middle age provide some evidence that conscientiousness-related traits continue to increase even up to age 75 (Dudek & Hall, 1991; Nilsson & Persson, 1984).

Although there appears to be strong evidence that conscientiousness increases across the life course, there is some contradictory evidence centered mostly in middle age (Cartwright & Wink, 1994; Helson & Moane, 1987). Nonetheless, it appears that the increase in conscientiousness is one of the most robust patterns in personality development, especially in young adulthood.

Mean-Level Changes in Emotional Stability

Emotional stability or its converse, neuroticism, contrasts even-temperedness with the experience of anxiety, worry, anger, and depression (John & Srivastava, 1999). Cross-sectional studies of neuroticism show that there may be slight decreases with age. Johnson et al. (1983) reported a small negative correlation between age and internal discomfort, a dimension marked by traits such as emotional, nervous, and worrying. McCrae et al. (1999) reported a negative relationship between age and neuroticism across six cultures, but the effect was small on average and less consistent than their findings for the other Big Five categories. Goldberg et al. (1998) reported small positive relationships between age and emotional stability and calmness. Carstensen, Pasupathi, Mayr, and Nesselroade (2000) reported that negative emotions declined in frequency up until age 60 and then showed a slight increase after age 60 (see also Costa & McCrae, 1986). Robins, Trzesniewski, Tracy, Gosling, and Potter (2002) examined age differences in self-esteem, which is strongly related to emotional stability (Robins et al., 2002); they found a gradual increase in self-esteem from young adulthood through late midlife, but a decline among individuals aged 70 to 90.

Findings from longitudinal studies are generally consistent with cross-sectional studies. McGue et al. (1993) found decreases in stress reaction and alienation in young adulthood.

Roberts et al. (2001) reported decreases in alienation, but not stress reaction from ages 18 to 26. Robins et al. (2001) reported significant drops in Neuroticism from ages 18 to 21. Viken, Rose, Kaprio, and Koskenvuo (1994) found decreases in Neuroticism in young adulthood. Likewise, Baltes and Nesselroade (1972) found decreases in a measure of guilt proneness and apprehensiveness in college students over a one-year period. Other studies have shown that the transition from adolescence to young adulthood is characterized by increasing self-acceptance (Stein et al., 1986) and decreasing negative emotionality (Carmichael & McGue, 1994; Watson & Walker, 1996). Several studies have found no change in measures of anxiety and well-being during this period (e.g., Roberts & Chapman, 2000). It seems that in young adulthood, people either decrease in neuroticism or do not change at all. There is no evidence for an increase in neuroticism.

The patterns of change on measures of neuroticism in middle age are quite consistent with the patterns found in young adulthood. People either decrease or do not change. For example, Charles, Reynolds, and Gatz (2001) reported decreases in negative affect from adolescence through age 60 in a cross-sequential longitudinal study and no change thereafter. In addition, Costa and McCrae (2000) reported decreases in neuroticism from ages 41 to 50. Several studies have found no changes in measures of neuroticism or its counterpart emotional stability (Costa & McCrae, 1988, 1998; Dudek and Hall, 1991). Studies focusing on old age also have found no change on measures of neuroticism or emotional stability (Field & Millsap, 1991; Nilsson & Persson, 1984; Pedersen & Reynolds, 1998). In contrast, Leon, et al. (1979) reported significant increases in several clinical scales drawn from the MMPI between the ages of 62 and 77 in a longitudinal study of men.

In summary, most studies show either decreases or little change in measures of neuroticism. If these studies were aggregated using meta-analytic procedures, we suspect that we would find that neuroticism decreased at a slow rate with age. Or conversely, we would find that emotional stability increased slowly with age.

Mean-Level Changes in Openness to Experience

Openness to experience refers to individual differences in the propensity to be original, complex, creative, and open to new ideas (John & Srivastava, 1999). Aging studies show either no relationship between openness to experience and age or decreases with age. For example, Goldberg et al. (1998) reported that the correlation between intellect (e.g., openness) and age was zero. Likewise, Helson and Kwan (2000) reported average correlations around zero between CPI measures of complexity and age in samples drawn from five different countries. In contrast, Costa & McCrae (1986) reported small, but statistically significant decreases in openness to experience in samples ranging in age from 35 to 84. Similarly, McCrae et al. (1999) found a negative relationship between openness and age in samples drawn from six different cultures.

Longitudinal studies show a more complex pattern of change in traits related to openness to experience across the life course. Studies based on adolescent and college-aged samples show increases in openness to experience. Baltes and Nesselroade (1972) reported significant increases on the 16PF scale of intelligence in longitudinal studies of college students. Robins et al. (2001) also found increases in the NEO–FFI measure of openness in a 4-year longitudinal study of college students. Unfortunately, the evidence for increases in openness during this age period is confounded by the fact that all of these studies tracked personality change in college students who are ostensibly being socialized to be more open to experience (Sanford, 1956).

Beyond the college years, the evidence is equivocal for mean-level changes in openness to experience with an equal number of studies demonstrating increases, decreases, or no change. For example, women from the Mills Longitudinal Study demonstrated increases in psychological mindedness from ages 21 to 27 (see also Helson and Kwan, 2000). McGue et al. (1993) reported increases on the MPQ Absorption scale in a sample of twins from ages 20 to 30. The Absorption scale measures the tendency to be emotionally responsive to sights and sounds, and to become absorbed in imaginative images and recollections. In contrast, other studies reported no changes in measures of openness to experience over similar age periods (Cartwright & Wink, 1994; Stevens & Truss, 1985). Several studies have even shown decreases in measures of openness to experience in middle and old age (Costa et al., 2000; Field & Millsap, 1991).

With the exception of the longitudinal studies of college students, the picture that emerges is mixed. However, overall, it appears that openness to experience increases in young adulthood and then plateaus thereafter.

Interpreting the Patterns of Mean-Level Change across the Life Course

We have summarized the findings from previous cross-sectional and longitudinal research on personality development in Table 26-1. This table shows that the patterns of personality change replicate across cross-sectional and longitudinal studies. The patterns also appear quite clear. People become more socially dominant, especially in young adulthood. They become more agreeable and conscientious through midlife and into old age. In addition, people show decreases in neuroticism across all age periods, small increases in openness to experience in the early stages of young adulthood and little change thereafter.

Although the patterns of change gleaned from previous research are intrinsically interesting, they beg the question of whether there is a more compelling or evaluative interpretation of the pattern. Specifically, one can ask whether the changes demonstrated across the Big Five conform to what we would expect from definitions of psychological maturity. What is psychological maturity? Maturity entails change in the direction of a desirable endpoint that once reached means a person is closer to being fully developed. This makes maturity an endpoint

TABLE 26-1. Personality Change across the Life Course: A Tabular Summary of Evidence from Cross-sectional and Longitudinal Studies of Mean-Level Personality Change

	Cross-sectional studies of different age groups	Longitudinal studies of people followed over time		
Personality trait domain	Ages 18 to 80	Young adulthood (20–40)	Middle age (40–60)	Midlife to old age (over 60)
Extraversion:				
Social dominance	+	+	+	?
Social vitality	−	−	−	−
Agreeableness	+	+	+	+
Conscientiousness	+	+	+	+
Neuroticism	−	−	−	0
Openness to Experience	−	+	0	0

Note: "+" signifies developmental increase, "−" signifies developmental decrease, "0" signifies no change, and "?" signifies that more research is needed.

with trait-like features, and the study of maturity intrinsically the study of the development of traits. Two distinct definitions of maturity prevail in the developmental literature (see Helson & Wink, 1987; Roberts et al., 2001). The first definition equates maturity with self-actualization and personal growth. For example, Maslow (1954) described the self-actualized individual as creative, concerned with the ultimate nature of reality, and as having the capacity to appreciate art. Similarly, Rogers (1961) described personal growth as the process of becoming less defensive and rigid and more creative and open to feelings. Interestingly, these defining characteristics of self-actualization and personal growth fall unambiguously into the Big Five domain of Openness to Experience.

The second definition of maturity is more functional in nature. Hogan and Roberts (in press) argue that maturity is characterized by those qualities that serve to facilitate functioning in society—mature people are more liked, respected, and admired in their communities, social groups, and interpersonal relationships. This definition is quite similar to Allport's (1961) characterization of the mature person as happy, showing fewer traces of neurotic and abnormal tendencies, and having the capacity for warm and compassionate relationships. From this perspective, maturity is marked by higher levels of emotional stability, conscientiousness, and agreeableness. The interpretation of this definition as functional is bolstered by research demonstrating that people who score higher on these three traits tend to achieve more success in their careers (Judge et al., 1999), perform better on the job according to their supervisors and peers (Tett, Jackson, & Rothstein, 1991), do more for their organizations than their peers (Hogan, Rybicki, Motowidlo, & Borman, 1998), have more stable marriages (Cramer, 1993; Kelly & Conley, 1987), belong to more social organizations in the community (MacDonald, 2000), take fewer health risks (Caspi et al., 1997), and live longer (Friedman et al., 1993).

Assuming that maturity is a state that one achieves with time and experience, one would expect mean-level increases on traits related to maturity. For example, if the humanistic definition of psychological maturity were correct, one would assume a trend for people to increase in measures of openness to experience across the life course. However, the data do not provide strong support for a humanistic interpretation of psychological maturity. After college, people do not grow increasingly open to experience with age (not according to our review of the literature). Future research might profit from differentiating among the facets of openness. For example, it may be that wisdom increases with age (Baltes & Staudinger, 2000), but traits such as creativity and openness to feelings and ideas may decrease. In contrast, it appears that people do become more functionally mature. With age, people become warmer, more considerate, self-controlled, responsible, and emotionally stable.

The implications of the pattern of mean-level changes in personality traits are quite profound. First, it shows that the direction of change in personality traits over the first 40 years of adulthood is quite positive. Once people emerge from adolescence, they become warmer, more responsible, and more emotionally stable as they progress through young adulthood and enter middle age. Second, gains in these traits related to functional maturity might promote even more positive social outcomes than implied by the cross-sectional findings described above.

Finally, these findings show that personality traits, long thought to be immutable, not only change, but also continue to develop later in the life course than most theorists suggested. It appears that development does not end with the advent of adulthood.

WHY DO PERSONALITY TRAITS CHANGE?

If individuals do become more mature with age, then the most relevant question is why? Interestingly, answers to this question tend to fall into two categories described as "ontogenetic"

and "sociogenic" (Aldwin & Levinson, 1994), which are analogous to the essentialist and contextualist positions described earlier. From an ontogenetic perspective, personality develops out of properties intrinsic to the organism, which has been interpreted as meaning that genes guide people to develop in a specific fashion across the life course (McCrae et al, 2000). This is, of course, an overly simplistic position as genes are manifest in contexts and interact with contexts to produce, change, and maintain personality (see Shanahan and Hofer, *this volume*).

In contrast, the sociogenic perspective assumes that the social structure is, in part, responsible for personality development. Specifically, change in personality is thought to result from the way a person interfaces with society through their ongoing participation in social roles (Aldwin & Levinson, 1994; Caspi & Roberts, 1999). For example, individuals are assumed to change their personality as they learn the norms associated with their work roles (Sarbin, 1964). Individuals also may change their personality traits based on feedback they receive in their social roles from peers, which is one of the essential ideas of symbolic interactionism (Stryker & Statham, 1985).

There is now a growing body of research demonstrating nontrivial relationships between changes in personality traits and sociogenic factors. For example, Elder (1969) found a distinct pattern of personality change from junior high school to the early 30s in men whose occupational achievements were greater than their fathers. Compared to men who achieved the same or less than their fathers, upwardly mobile men became more dependable and responsible, independent, and motivated for success. They also became less self-defeating, less susceptible to withdrawal when frustrated, and less likely to lack personal meaning in their life. Bachman and O'Malley (1977) found a small relation between occupational attainment and increases in self-esteem in a 10-year period following high school. Similarly, Mortimer and Lorence (1979) reported increases in competence for men who experienced more occupational autonomy in the 10-year period following graduation from college. Clausen and Gilens (1990) reported that women who had high labor force participation increased in self-confidence from adolescence to midlife. Finally, Roberts (1997) showed that women's participation and success in the paid labor force were associated with increases in measures of conscientiousness (responsibility, norm-orientation) and extraversion (dominance, independence). Furthermore, Roberts and Chapman (2000) showed that work satisfaction was associated with decreases in measures of neuroticism.

Moving beyond the domain of work, Helson and Picano (1990) tracked personality change from ages 20 to 43 in women who occupied either traditional or neo- or non-traditional role configurations. They found that women in a traditional role configuration (e.g., homemaker) demonstrated fewer positive developmental gains in personality traits when compared to women who occupied neo-traditional (e.g., some involvement in the paid labor force) or non-traditional (e.g., working full time for whole career) role configurations. Roberts and Chapman (2000) tested the association between changes in measures of neuroticism and marital experiences. They found that women who reported more marital tensions and lower marital satisfaction showed increases in measures of neuroticism and decreases in measures of dispositional well-being from ages 21 to 52. Roberts, Helson, and Klohnen (2002) reported that divorce was associated with a slower rate of increase in dominance when the divorce was experienced in young adulthood.

Consistent with these findings, Robins, Caspi, and Moffitt (2002) found that relationship experiences during young adulthood could serve as a catalyst for personality change. Young adults in dissatisfying and abusive relationship became more anxious, angry, and alienated over time. In contrast, young adults who remained in a stable relationship during their 20s became more cautious and restrained in their thoughts, feelings, and behaviors. This finding provides a plausible causal account for a particular intraindividual developmental pathway.

Impulse control tends to increase in young adulthood, but the reason for this change is not fully understood (Roberts et al., 2001). Robins et al.'s findings suggest that settling down in an intimate relationship may be a contributory cause. It may be that the norms, expectations, and sex-role stereotypes associated with intimate relationships create an environmental press for a more controlled, cautious, and traditional approach to life. Likewise, the finding that individuals in unhappy relationships tend to become more hostile, anxious, and alienated over time dovetails with recent research on depression. Negative relationship experiences—including dissatisfaction (Whisman & Bruce, 1999) and dissolution (Monroe, Rohde, Seeley, & Lewinsohn, 1999)—increase the risk of depression. However, the mediating mechanism remains to be understood. Repeated acts of aggression, recurrent negative emotional states, and other aversive experiences that chronically occur in maladaptive intimate relationships may increase an individual's disposition toward negative emotionality, which is a risk factor for depression (Krueger, 1999).

One additional sociogenic factor, historical context, has been long identified as a critical influence on personality development (Stewart & Sokel, 1989). Different historical periods bring different opportunities, values, and social roles that are thought to influence the personalities of individuals living through those times (Baltes & Nesselroade, 1972; Twenge, 2001). Elder's (1979) study of the Great Depression is a classic example of how pervasive deprivation had differential developmental influences on the personality development of younger versus older children. More recent research has demonstrated the influence of modern historical phenomena. For example, Agronick and Duncan (1998) investigated the personality changes associated with the perceived importance of the women's movement of the 1960s and 1970s. Women who felt that the women's movement was important showed increases in social poise and self-assurance and decreases in several measures of norm-adherence. Roberts and Helson (1997) explored the antecedents and consequences of changes in culture or climate that occurred in the United States between 1950 and 1985, described as the "culture of narcissism." They found that changes in cultural climate were associated with increases in narcissism and decreases in social responsibility (e.g., decreasing psychological maturity).

These studies demonstrate that changes in personality traits are associated with experiences in careers, marriage, and the culture at large. Several aspects of these studies are worth highlighting. It seems apparent that certain life experiences are associated with increases in traits related to the functional definition of maturity. People who achieve more in work and remain in stable relationships become more conscientious (Elder, 1969; Roberts, 1997; Robins, Caspi, & Moffitt, in press). In addition, people who have satisfying jobs and marriages tend to increase in emotional stability (Roberts & Chapman, 2000; Robins, Caspi, & Moffitt, 2002). It should also be noted that life experiences could counteract the developmental trends toward functional maturity. The culture of narcissism in the United States during the 1960s, 1970s, and 1980s, was associated with decreases in norm adherence—a facet of conscientiousness (Roberts & Helson, 1997). Although the increases associated with functional maturity may be considered normative in that most people will demonstrate increases in agreeableness, conscientiousness, and emotional stability, these countervailing forces lend caution to the notion that maturity is inevitable. Some people, and some populations at certain times in history, may not demonstrate a clear pattern of increasing maturity.

One problematic aspect of most research exploring the relationship between social structures and personality development is the assumption that environments only affect change in personality. We describe this perspective as the "exposure" model of personality development in which it is often assumed that mere exposure to the social structure, role, or context will facilitate change in personality. Exposure models underestimate the complexity of the relationship

between personality and social structure in two ways. First, they ignore the fact that personality and social structure are often reciprocally related (Kohn & Schooler, 1978, 1982; Schooler, Mulatu, & Oates, 1999). For example, as these classic studies have shown, people who possess more ideational flexibility enter and maintain jobs that are more intellectually challenging, which in turn promotes increases ideational flexibility even in old age. Roberts, Caspi, and Moffitt (2002) have recast this as the principle of corresponsiveness. They have proposed that the most likely effect of life experience on personality development is to deepen the characteristics that lead people to those experiences in the first place (Roberts & Caspi, 2003). Thus, individuals drawn to stimulating work because of their own intellectual complexity will become more intellectually complex because of their experiences. The principle of corresponsiveness is important as it highlights the fact that individuals will have their own unique developmental trajectory based in part on their own personality. It also highlights the fact that people are not rudderless ships buffeted by the whims of the social context. Rather, the type of change they demonstrate will often grow out of their individuality and will therefore be somewhat predictable.

The second way in which exposure models are flawed is that they overlook the fact that social contexts may facilitate the more ubiquitous psychological phenomenon of adulthood: consistency. We believe that this more common effect of social context arises from people's attempts to build a personal niche that fits with their values, goals, and personality traits. At its broadest level the personal niche is built around primary social roles found in one's marriage, career, family, and community (e.g., religious, volunteer, and leisure time roles). To the extent that people can build a niche that fits with their psychological profile, then psychological adjustment should be facilitated, as should growth in the direction of the expectations of the social roles selected. In addition, because this niche should successfully reinforce a person's already existing dispositions, there should be less need for change and thus greater levels of consistency (see Roberts & Caspi, in press).

In our most recent research we tested these ideas by examining the relationship between a person's fit with their school environment and their personality development over a 4-year period (Roberts & Robins, in press). Consistent with our expectations, students who fit better with the school environment were more satisfied with school and better adjusted. Also as expected, we found that individuals who fit better with their school environment changed less than others. Finally, although they changed less than others we found that people who fit with the environment tended to change in the direction of the values of the school environment. As this was a highly regarded research university with a competitive and achievement oriented culture, the climate was pulling for students to become more competitive and better able to handle the stress of high achievement standards. Thus, those who fit better with the school environment grew to be more competitive, which was reflected in becoming less agreeable, and also more emotionally stable as they adapted to the demands of the university culture. This is one of the first studies to identify and test an environmental mechanism that is simultaneously associated with both change and continuity in personality over time.

Finally, the fact that change in personality traits is associated with life experiences has important ramifications for how one conceptualizes the field of personality psychology and personality development in particular. If personality changes are due to normative life experiences, then there is the possibility that people can be changed given the right intervention or context. From a theoretical perspective, we must ask why personality would remain an open system that is characterized by both consistency and change? What factors contribute to increasing consistency? What adaptive function, if any, does malleability serve in old age? Answering these questions entails a stark revision of our modal conceptualization of traits

that is intrinsically more dynamic (e.g., Pervin, 1994). Rather than simply assuming that traits are consistent because they are traits, we need to understand the processes that account for continuity and change in personality (Whitbourne, 2001).

CONCLUSION

In closing we would like to make a modest proposal to rekindle the dialogue between sociology and personality psychology. It is clear from our perspective that a complete understanding of personality development cannot happen without explicit attention to sociological ideas and findings. Research on personality development would benefit greatly from the perspectives brought to bear by life-course sociology. In turn, we think that personality psychology today can provide sociologists with a much more conceptually elegant model of psychological functioning than was possible 60 years ago. We hope the invitation is accepted.

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