# Personality Development: Continuity and Change Over the Life Course

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# **Key Words**

personality traits, temperament, motives and goals, narrative identity, lifespan development

### **Abstract**

The development of personality across the human life course may be observed from three different standpoints: the person as actor (behaving), agent (striving), and author (narrating). Evident even in infancy, broad differences in social action patterns foreshadow the long-term developmental elaboration of early temperament into adult dispositional traits. Research on personal strivings and other motivational constructs provides a second perspective on personality, one that becomes psychologically salient in childhood with the consolidation of an agentic self and the articulation of more-or-less stable goals. Layered over traits and goals, internalized life stories begin to emerge in adolescence and young adulthood, as the person authors a narrative identity to make meaning out of life. The review traces the development of traits, goals, and life stories from infancy through late adulthood and ends by considering their interplay at five developmental milestones: age 2, the transition to adolescence, emerging adulthood, midlife, and old age.

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Nomothetic research: the study of numerous individuals in personality psychology, with the goal of testing hypotheses and deriving laws about people in general

# INTRODUCTION: PERSONALITY PSYCHOLOGY AND THE WHOLE PERSON

Ever since Allport (1937) and Murray (1938) envisioned personality psychology as the scientific study of psychological individuality, personality psychologists have focused their investigations on those most important differences

in social and emotional functioning that distinguish one whole person from the next. Every human life is a variation on a general evolutionary design, developing over time and in culture (McAdams & Pals 2006). For a cognitively gifted and exquisitely social species like ours, what are those broad psychological variations on the general design that are of most consequence for adaptation to group life? And how does the scientific exploration of those most consequential individual differences help us understand the whole life of an individual person as that life develops over time? Whereas personality psychologists have historically struggled to reconcile the competing agendas of what Allport called nomothetic research and the idiographic case study, their efforts to measure and validate the most socially consequential variations in overall psychological functioning aim ultimately to provide an overall framework for understanding the individual human life. At the end of the day, personality psychology must provide a conception of the person that is full and rich enough to shed scientific light on the single case.

Over the past two decades, personality psychologists have made significant advances in identifying many of the most socially consequential features of psychological individuality. A substantial scientific literature supports the construct validity of a wide range of personality variables, from dispositional traits subsumed within the well-known Big Five taxonomy (McCrae & Costa 2008) to motives, goals, values, and the specific self-schemata featured in social-cognitive theories on personality (Mischel 2004). It is now abundantly clear that personality variables are robust predictors of behavior, especially when behavior is aggregated across different situations and over time. Moreover, personality predicts important life outcomes, such as the quality of personal relationships, adaptation to life challenges, occupational success, societal involvement, happiness, health, and mortality (Lodi-Smith & Roberts 2007, Ozer & Benet-Martinez 2006). Illustrating the power of personality, a recent review of longitudinal studies demonstrated that personality traits perform as well as measures of IQ and social class in predicting mortality, divorce, and occupational attainment (Roberts et al. 2007).

In taking a life-course developmental perspective on personality, the current review traces temporal continuity and change in a broad range of features comprising psychological individuality, from the temperament traits that arise in the first months of life to the self-narratives that adults construct to make meaning out of their lives. Building on an integrative framework that has gained considerable currency in personality psychology over the past decade (McAdams & Pals 2006. Sheldon 2004, Singer 2005), the review first organizes recent research findings in terms of three developmental layers of psychological individuality—dispositional traits (the person as actor), characteristic adaptations (the person as agent), and integrative life narratives (the person as author). Personality traits sketch a dispositional outline of psychological individuality; adaptations fill in the motivational and social-cognitive details; and life stories speak to the full meaning of the individual life. Then, the review considers what these three kinds of personality constructs—traits, adaptations, and narratives-look like in the individual life at each of five developmental milestones—around age 2, the transition to adolescence, emerging adulthood, midlife, and old age.

# THE PERSON AS ACTOR: THE DISPOSITIONAL PERSPECTIVE

Dispositional traits are broad, internal, and comparative features of psychological individuality that account for consistencies in behavior, thought, and feeling across situations and over time. Typically assessed via self-report questionnaires or observer ratings, dispositional traits position an individual on a series of bipolar, linear continua that describe the most basic and general dimensions upon which persons are typically perceived to differ. Amid a number of well-validated factor-analytic approaches to sorting through the vast universe of trait

concepts, the most popular trait taxonomy on the scene today is the Big Five model of personality traits (John et al. 2008a). Following the program established by McCrae & Costa (2008), the five factors have been named extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience. Each of the five factors, furthermore, encompasses a range of more specific traits, or what McCrae & Costa (2008) call facets. For example, their version of extraversion includes dimensions of warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotionality. The first two factors in the five-factor scheme extraversion and neuroticism—roughly parallel the trait factors of positive emotionality and negative emotionality respectively, as articulated in what is now often called the Big Three model (Clark & Watson 2008). The third dimension of the Big Three is a factor of constraint (versus disinhibition), or the tendency to act in an overcontrolled versus undercontrolled manner.

Whether they subscribe to some variation of the Big Five, the Big Three, or none of the above, most personality psychologists today see the personality trait as the bedrock, basic unit of psychological individuality. Dispositional traits are "basic" in at least two ways. First, traits like extraversion and agreeableness describe the most fundamental and least contingent differences between actors that are most readily detected as researchers observe different people's overt actions across situations and over time. So basic are traits in this sense that some of the same individual-difference dimensions may be consistently observed among nonhuman animals, even well beyond primates (Weinstein et al. 2008). Second, dispositional traits speak to broad differences and consistencies that appear even at the very beginning of the human life span. As soon as human beings begin to act in a social arena (e.g., the infant with a caregiver), basic differences in their performance as social actors may be observed. Some actors seem generally cheerful; others distressed. Some actors consistently approach opportunities for social rewards; others show marked inhibition.

Idiographic case study: the study of the individual case in personality psychology, with the goal of understanding a particular life in depth

#### Dispositional traits:

broad internal dimensions of personality thought to account for general consistencies in behavior, thought, and feeling observed across situations

**Big Five:** five broad factors repeatedly derived from factor-analytic studies of traits: extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness

Characteristic adaptations: goals, plans, projects, values, possible selves, and other contextualized features of personality capturing individual differences in motivation

# Emerging adulthood: the developmental

the developmental period in the life course spanning the late teens through the mid-twenties Although it is probably not right to suggest that newborn infants possess full-fledged personality traits, the broad differences in temperament that may be observed in the early months of life signal the eventual emergence of a dispositional signature for personality.

### From Temperament to Traits

Temperament is the "early-in-life framework" out of which personality traits develop (Saucier & Simonds 2006, p. 118). Tracing that development, however, is one of the great challenges facing personality science today. As a first step, an increasing number of researchers and theorists have sought to line up the most well established temperament dimensions, based largely on maternal ratings and laboratory observations, with self-report adult personality traits subsumed within the Big Five and related taxonomies (Hampson et al. 2007, Shiner 2006). In their authoritative review of the literature on child and adult personality, for example, Caspi et al. (2005) proposed that (a) a surgency factor in child temperament (encompassing positive affectivity and positive approach) may herald the development of adult traits traditionally subsumed within the extraversion and positive emotionality domain, (b) temperament dimensions of anxious/fearful distress and irritable distress (Rothbart et al. 2000) may foreshadow the development of neuroticism or negative emotionality in adulthood (with irritable distress perhaps also a precursor to low agreeableness), and (c) childhood capacities for focused attention and effortful control (Kochanska et al. 2000), as well as aspects of behavioral inhibition in children (Fox et al. 2005), may underlie the development of the adult traits of conscientiousness, constraint, and aspects of agreeableness.

Longitudinal data supporting clear linkages between child temperament and adult personality traits are relatively scarce to date, but some instructive findings have appeared. The landmark longitudinal study of 1000 children born in Dunedin, New Zealand documented statistically significant associations between age-3

temperaments and personality traits at age 26 (Caspi et al. 2003a). Undercontrolled 3-yearolds (impulsive, negativistic, and distractible) tended to show high levels of self-report and peer-report neuroticism and low levels of agreeableness and conscientiousness as young adults, whereas children described as especially inhibited at age 3 (socially reticent and fearful) grew up to show significantly higher levels of constraint and low levels of extraversion. In a 19year longitudinal study, Asendorpf et al. (2008) found that boys and girls who at ages 4-6 were rated by their parents as especially inhibited were more likely in young adulthood (mid-20s) to rate themselves as highly inhibited, to show internalizing problems, and to be delayed in assuming adult roles regarding work and intimate relationships. In addition, boys rated by their parents as especially aggressive showed higher levels of young-adult delinquency.

As broad dimensions of emotional expression and behavioral style apparent at or near the beginning of the human lifespan, temperament is assumed to reflect the person's native endowment. To the extent, then, that basic temperament dimensions like positive affectivity and anxious/fearful distress resemble stripped down, less-cognitively elaborated adult traits like extraversion and neuroticism, it is tempting to assume that the former gradually morph over time into the latter via a process of genetically driven unfolding. Nonetheless, a simple story of genetic determinism does not work (Krueger & Johnson 2008, Roberts et al. 2008). Studies of identical and fraternal twins have repeatedly demonstrated that adult personality traits show substantial heritability quotients (around 50%, and sometimes higher), that shared environments like overall parenting styles and family income typically account for little of the variance observed in traits (but for a notable exception, see Borkenau et al. 2001), and that nonshared environments, therefore, appear to exert a substantial effect on the development of traits, though the precise mechanisms of that effect remain unknown. In their review of research on trait genetics, Krueger et al. (2006) conclude that the primary source for

stability in temperament across time is genetics, with unique environmental influences (nonshared environments) accounting for change. Yet research on molecular genetics has found it very difficult to identify reliable associations between single candidate genes and dispositional traits (Munafo et al. 2003). It appears that any given dispositional trait is probably influenced by a multitude of genes and that genes interact with environments, at multiple levels and in complex ways, in the development of personality traits.

Phenotypic temperament differences, rooted as they are in genetic differences between people, partly drive the effects of environments themselves. The temperamentally smiley and approachable infant may tend to evoke warm and friendly responses from others, which over time become the "environments" that help to reinforce and elaborate initial temperamental tendencies, sending that smiley child, it would seem, down the road toward high extraversion (and perhaps high agreeableness) in adulthood. Genetically driven differences in behavioral style may eventually determine the kinds of environments that the individual chooses to be in. At school and in the neighborhood, little extraverts-to-be may select highly social, lively settings in which to interact, reinforcing the high-extraversion tendencies that, in a sense, were there all along. Caspi et al. (2005) and Roberts et al. (2008) list a number of mechanisms like these-tendencies to react to, interpret, select, manipulate, or reject environments in accord with one's initial temperament/trait tendencies—to suggest that genes and environments conspire, with genes taking the lead role, in the gradual elaboration of childhood temperament into dispositional traits in adulthood.

Gene-environment interactions are demonstrated when genetic differences are viewed as moderating the influence of environments on traits or when environmental differences are viewed as moderating the influence of genes on traits. For example, Caspi et al. (2003b) showed that the effects of a functional polymorphism

in the promoter region of the serotonin transporter (5-HTT) gene on depressive tendencies in young adults depend on one's history of stressful life events. Those individuals who carried at least one short allele of the 5-HTT gene (indicating a less efficient reuptake of serotonin in the synaptic cleft) and who had experienced at least four major stressful events in their lives tended to show higher levels of depression and suicidality than other young adults in the study. Employing a similar logic, Kaufman et al. (2004) found that children carrying at least one short allele of the 5-HTT gene and who had a history of parental abuse were more likely to evidence depression compared to other maltreated children, if and only if their caregivers themselves reported that they were under high stress. Haeffel et al. (2008) focused on the dopamine transporter gene. They found that male adolescents who carried a particular polymorphism in this gene were more likely to exhibit depression if and only if they also reported severe maternal rejection.

# **Differential Continuity of Traits**

Differential continuity refers to the extent to which individual differences in a given trait hold steady over time. Do people retain their relative positions in a distribution of trait scores upon successive assessments? Over a period of days or weeks, differential continuity is essentially synonymous with the test-retest reliability of the trait measures employed (Watson 2004). Over longer periods of time, however, successive assessments of traits speak to the continuity of individual differences (temporal stability) in personality.

Differential continuity tends to increase with age. In a comprehensive meta-analysis of longitudinal studies, Roberts & DelVecchio (2000) determined that stability coefficients for dispositional traits were lowest in studies of children (averaging 0.41), rose to higher levels among young adults (around 0.55), and then reached a plateau for adults between the ages of 50 and 70 (averaging 0.70). Their overall findings held for each of the Big Five trait

# Gene-environment interactions:

instances wherein genetic differences may moderate the influence of environments on development of traits (or environmental differences moderate the influence of genes on traits)

Differential continuity: temporal stability of individual differences in personality construct scores

# Mean-level change:

the extent to which personality construct scores rise or fall (on average) over developmental time dimensions, for both males and females, and for different measurement methods. Terraciano et al. (2006) reviewed longitudinal data to suggest that differential continuity may plateau at an earlier age, perhaps in the 30s or 40s. Personality traits in children (often viewed as aspects of temperament) are typically assessed via parental reports or laboratory observations (Durbin et al. 2007), whereas adult traits are typically indexed by self-report. It is generally acknowledged that young children do not have the requisite self-reflective skills to rate themselves on temperament/trait dimensions. Interestingly, there is evidence to suggest that the same may hold true for some adolescents. In a large Internet sample ranging in age from 10 to 20 years, Soto et al. (2008) found that self-ratings of personality traits were more structurally inconsistent and less coherent among the younger participants. Lockenhoff et al. (2008) found that differential continuity for self-report scales was lower among African Americans, compared to whites, and among individuals with less education. They speculated that the lower temporal stability could be a function of either (a) poorer test-taking skills or less motivation among African Americans and less-educated participants (rendering their assessments less reliable) or (b) greater instability in the lives of disadvantaged groups, which itself might make for less differential continuity

How strong is the case for the temporal stability of individual differences in dispositional traits? Personality psychologists appear to differ in their answers to this question, even as they look at the same empirical findings. The high stability coefficients observed for adults have convinced some observers that individual differences in personality traits are pretty well set once people reach a certain age, say about age 40 (McCrae & Costa 2008). Adding more credence to that point of view are the findings from some studies of children's traits showing dramatically higher indices of differential continuity than those observed by Roberts & DelVecchio (2000) (e.g., De Fruyt et al. 2006). On the other side are arguments that underscore the extent

to which people may gradually shift their relative positions in trait distributions over time, especially in the first half of the life course. For example, Fraley & Roberts (2005) show that test-retest correlations tend to decay as the time intervals between assessments get longer, typically approaching an asymptote in the range of 0.20 to 0.30.

Showing just how difficult it is to document strong differential continuity over the very long haul from childhood to middle age, especially in the face of very different assessment strategies employed at different points in time, are the results from a 40-year longitudinal study assessing Big Five traits from teacher ratings in elementary school and self-reports at midlife for 799 participants (Hampson & Goldberg 2006). Although statistically significant in most cases, the correlations of temporal stability proved to be surprisingly low: 0.29 for extraversion, 0.25 for conscientiousness, 0.16 for openness to experience, 0.08 for agreeableness, and 0.00 for neuroticism. It is important to note that the relatively modest reliabilities for the elementaryschool teacher ratings in this study were surely instrumental in lowering the correlations found for long-term temporal stability. Nevertheless, the vanishingly small coefficients obtained for agreeableness and neuroticism caution against blithe assumptions regarding long-term differential continuity. The developmental path from childhood dimensions to adult traits is not a straightforward and easy-to-predict thing.

## Developmental Trends for Traits Across the Life Course

The extent to which persons hold their relative positions in a trait distribution over time (differential continuity) is conceptually and statistically distinct from the extent to which the average values (mean levels) of scores on any given trait within a group rise or fall over the life course. Typically referred to as mean-level change, the latter issue speaks to developmental trends in trait levels: Are 40-year-olds more conscientious on the average than

20-year-olds? Do people tend to become more neurotic as they age?

Although exceptions to the rule can be found, data from both cross-sectional and longitudinal studies of dispositional traits suggest that as people move into and through their early-to-middle-adult years, they appear to become more comfortable with themselves as adults, less inclined to moodiness and negative emotions, more responsible and caring, more focused on long-term tasks and plans, and less susceptible to extreme risk-taking and the expression of unbridled internal impulses. What Caspi et al. (2005) deem the maturity principle in personality dispositions states that people become more dominant, agreeable, conscientious, and emotionally stable over the course of adult life, or at least up through late middle age. In terms of the Big Five, mean-level scores for traits subsumed within the broad domains of conscientiousness (especially facets emphasizing industriousness and impulse control) and agreeableness appear to increase from adolescence through late midlife, and scores subsumed within neuroticism tend to decrease over that period (e.g., Donnellan & Lucas 2008, Helson & Soto 2005, Jackson et al. 2009, Lonnqvist et al. 2008, McCrae et al. 1999, Srivastava et al. 2003).

Roberts et al. (2006) conducted a metaanalysis of 92 longitudinal studies, analyzing mean scores on traits by age decades, from age 10 to age 70. Most of the studies were from North American samples of participants, with largely white and middle-class samples. Conscientiousness scores showed mainly a gradual and steady increase across the age span, but the increase in agreeableness was less smooth. Average agreeableness scores crept up slowly (and nonsignificantly) to age 50, showed a sharp increase from 50 to 60, and then leveled off again. Neuroticism decreased through age 40 and then leveled off. Extraversion showed a mixed picture. Extraversion-spectrum traits related to social dominance tended to show increases through age 30, whereas extraversionspectrum traits related to social vitality tended to decrease after age 50. Openness to experience showed a curvilinear trend: an increase up to age 20 and then a decrease after age 50.

Roberts et al. (2006) argued that increases in conscientiousness and agreeableness and decreases in neuroticism from adolescence through midlife reflect the developing adult's increasing investment in normative social roles related to family, work, and civic involvement. By contrast, Costa & McCrae (2006) explained the same trends as a product of biological maturation, suggesting that human beings may be genetically programmed to mature in the directions shown by research on dispositional traits. In the view of Costa & McCrae (2006), increases in agreeableness and conscientiousness may be correlated with increasing investment in certain social roles, but both developmental trends—changes in traits and roles—are a function of an unfolding biological program that helps to assure that adults care for the next generation and take on the social responsibilities that group life among human beings demands.

Studies of mean-level changes in dispositional traits mask individual differences in just how much particular people change. Not all individuals follow, for example, the normative increase in conscientiousness scores with age. Some people change more than others, and some change in ways that are contrary to general population trends, a phenomenon that is sometimes referred to as interindividual differences in intraindividual change (Mroczek et al. 2006). An interesting finding in this regard appears to be a variation on the maturity principle. Those individuals who tend to change the least over time are often those who already show the dispositional signature associated with maturity-low neuroticism and high agreeableness, conscientiousness, and extraversion (Donnellan et al. 2007, Johnson et al. 2007, Lonnqvist et al. 2008). The finding suggests that people who have already attained maturity with respect to dispositional traits do not "need to" change any further, whereas those who have yet to reach maturity have a longer way to go. Differences in intraindividual change may also be a function of family and social experiences. Young adults who settle into

### Maturity principle:

the normative tendency for people to show increases on conscientiousness and agreeableness traits and decreases on neuroticism as they move from adolescence through late middle age serious-partner relationships (e.g., marriage) tend to show decreases in neuroticism and increases in conscientiousness that are stronger than normative trends (Neyer & Lehnart 2007). Increases in occupational success and satisfaction may cause increases in extraversion (Scollon & Diener 2006). Certain nonnormative changes in traits can also signal trouble ahead. For instance, Mroczek & Spiro (2007) found that high levels of neuroticism and increases in neuroticism over time tended to predict higher levels of mortality for older men.

# THE PERSON AS AGENT: THE MOTIVATIONAL PERSPECTIVE

Despite the fact that the dispositional trait is a bedrock concept for the study of psychological individuality, personality psychologists have never been fully satisfied with traits. Allport (1937) deemed the trait to be the central unit of analysis in personality studies, but Murray (1938) cast his lot with the rival concept of need, or motive. Many of the most prominent personality theorists of the first half of the twentieth century made but passing reference to dispositional traits. Freud, Adler, Horney, Fromm, Erikson, Rogers, Maslow, Kelly, Rotter, and Bandura all placed motivational or social-cognitive constructs at the center of their theories, emphasizing the dynamics of human behavior, social learning and cognitive schemata, strategies and coping mechanisms, developmental challenges and stages, and the ever-changing details of individual adaptation to the social world. In the 1970s, more empirically minded critics took trait theories to task for neglecting the role of environments and social-learning constructs in the prediction of behavior (Mischel 2004). Even as researchers today pile up impressive findings speaking to the differential continuity and mean-level developmental trends for dispositional traits, a wide assortment of research programs in personality psychology continue to flourish outside the trait mainstream, as if their primary allegiance were to Murray over Allport (Deci & Ryan 1991, Little 1999, Schultheiss & Pang

2007). Rather than dispositional traits, many of these alternative perspectives in personality psychology focus on what McAdams & Pals (2006) call characteristic adaptations.

More particularized and contextualized than dispositional traits, characteristic adaptations include motives, goals, plans, strivings, strategies, values, virtues, schemas, and a range of other personality constructs that speak mainly to the motivational aspects of human life. What do people want? What do they value? How do people seek out what they want and avoid what they fear? How do people develop plans, goals, and programs for their lives? How do people think about and cope with the conflicts and challenges they face? What psychological and social tasks await people at particular stages or times in their lives? Conceptions of personality that directly address questions like these tend to place human agency at the center of personality inquiry. In Mischel's (2004) language, personality is an "organized, dynamic, agentic system functioning in the social world" (p. 2). Many personality psychologists proclaim that human beings are self-determining and self-regulating agents who organize their lives around goal pursuit. Life is about choice, goals, and hope—the hope that individuals can achieve their most desired goals (Deci & Ryan 1991, Freund & Riediger 2006). As agentic, self-determining beings, people do more than merely act in more-or-less consistent ways across situations and over time. As agents, people make choices; they plan their lives; they will their very identity into being.

# The Agentic Self: Intentionality and the Articulation of Goals

Whereas features of temperament may be apparent in the first few days of life, a sense of personal agency emerges gradually over the early years of personality development (Walls & Kollat 2006). It begins with a dawning appreciation of human intentionality (Tomasello 1999). By the time they reach their first birthday, infants will behave in ways to suggest that they understand what others are trying to do.

They will imitate and improvise upon intentional behaviors shown by adults at much higher rates than random behaviors. They will attend to objects and events toward which adults express interest and positive emotions, as if to suggest that they, too, may want what others want. By age four, children have consolidated a "theory of mind" (Wellman et al. 2001)—a folkpsychological understanding that says people's behavior is motivated by their desires and their beliefs. In the early school years, children begin to formulate and assess their own goal-directed efforts in specific domains of experience. They develop specific beliefs and expectancies about what kinds of desired goals they can and cannot achieve, what sorts of things they need to do to achieve certain goals, what kinds of thoughts and plans they should develop to promote goal attainment, what they should hope for, and when they should give up.

By age 7 or 8, children have readily identifiable and well-articulated goals, and they see themselves as more-or-less self-determining, goal-directed agents whose aspirations take up increasing space in consciousness and show increasing influence on daily behavior (Walls & Kollat 2006). Some of the goals developed by school-aged children may be expressions or derivatives of the three basic needs identified by McClelland (1985)-motives for achievement, power, and intimacy/affiliation (Winter et al. 1998). Goals may also flow from basic. self-determining needs for autonomy, competence, and relatedness (Sheldon et al. 2001). Others may be more idiosyncratic and reflective of family, school, neighborhood, and other social influences. Goals may relate to developing temperament dimensions in complex ways. But the goals themselves, and the social-cognitive superstructure built around them, are not the same thing as the temperament traits. By age 7 or 8, a second layer of personality has begun to form. As basic dispositions continue to shape the actor's unique emotional and behavioral style, the agentic self articulates a personalized psychology of motivation, spelling out its own intentions, plans, desires, goals, values, programs, expectancies, and goal-related

strategies. Layered over the actor's developing dispositional profile, then, is a motivational agenda that will come to encompass the personality's most salient characteristic adaptations.

Roberts et al. (2004) discovered positive relations between goals and dispositional traits in a four-year longitudinal study of 298 college students. For example, the researchers found that, compared to introverts, extraverts expressed high levels of enthusiasm for a greater number and variety of personal goals. Agreeableness was positively related with social and relationship goals and negatively related to aesthetic goals. Openness was related to valuing aesthetic, social, and hedonistic goals and rating economic and religious goals as less important. Roberts et al. (2004) concluded that the correlations between certain trait dimensions and ratings of goal importance were not so high as to suggest that traits subsume goals, or vice versa. Over the four-year span, moreover, ratings on goals showed levels of differential continuity (0.56) that were comparable to those shown for traits (0.61), though (unlike traits) the mean-level values of goal ratings tended to be lower at the end of the study than they were at the beginning. The authors suggested that goals follow a different developmental sequence than traits follow. Over the course of college, the students may have winnowed down their enthusiasm for the full range of goals and by their senior years focused on those goals most consistent with their long-term aims in life.

#### Goals Over the Life Course

Goals may be conceived at many different levels. They may range from short-term tasks, such as getting my car fixed today or finishing this paper by the end of the month, to such lifelong aims as attaining financial security. They include approach goals such as training for a marathon and avoidance goals such as staying away from men who remind me of my first husband (Elliot et al. 2001). Goals vary with respect to level of abstraction, breadth, difficulty, realism, strength, and a range of other factors that spell out their salience and function in the

social ecology of an individual life. Personality researchers tend to focus on mid-range goals with some staying power—goals that are broad enough and stable enough to organize people's future selves while still concrete and immediate enough to be reflected in current behavior. To that end, they have formulated such goal constructs as personal strivings (Emmons 1986), personal projects (Little 1999), and life longings (Scheibe et al. 2007).

Freund & Riediger (2006) describe goal constructs like these as "the building blocks of adult personality" (p. 353). Goals speak directly to how general themes in an adult's life, including dispositional traits, may be played out in particular and contextually nuanced patterns of behavior. Although goals sometimes connect thematically to traits, often they do not. People's goals may even contradict their traits. An introverted 40-something man may decide that his new, number-one goal in life is to find a mate. To launch the project, he may need to engage in many behaviors and move through many states and situations that do not seem especially "introverted." He resolves to do it. The developmental project trumps his dispositional traits. Should he achieve the goal, he may settle back into his day-to-day dispositional routine.

Developmental studies of goal constructs in personality examine changes in the content and structure of goals over time and changes in the particular ways people think about, draw upon, pursue, and relinquish goals. Research conducted in modern societies suggests that among young adults, goals related to education, intimacy, friendships, and careers are likely to be especially salient; middle-aged adults focus their goals on the future of their children, securing what they have already established, and property-related concerns; and older adults show more goals related to health, retirement, leisure, and understanding current events in the world (Freund & Riediger 2006). Goals indicative of prosocial societal engagement—generativity, civic involvement, improving one's community-become more pronounced as people move into midlife and remain relatively strong for many adults well

into their retirement years (McAdams et al. 1993, Peterson & Duncan 2007). Goals in early adulthood often focus on expanding the self and gaining new information, whereas goals in later adulthood may focus more on the emotional quality of ongoing relationships (Carstensen et al. 2000).

The ways in which people manage multiple and conflicting goals may change over time. Young adults seem better able to tolerate high levels of conflict among different life goals, but midlife and older adults manage goals in ways to minimize conflict (Riediger & Freund 2008). In trying to reconcile their goals to environmental constraints, young adults are more likely to engage in what Wrosch et al. (2006) call "primary control strategies," which means that they try actively to change the environment to fit their goal pursuits. By contrast, midlife and older adults are more likely to employ secondary control strategies, which involve changing the self to adjust to limitations and constraints in the environment. With some exceptions, older adults seem to approach goals in a more realistic and prudent manner, realizing their limitations and conserving their resources to focus on those few goals in life they consider to be most important (Ogilvie et al. 2001). Compared to young adults, they are often better able to disengage from blocked goals and to rescale personal expectations in the face of lost goals. As adults move into and through their midlife years, they become more adept at selecting goals that offer the best chances for reward, optimizing their efforts to attain the best payoffs from their projects and strivings, and compensating for their own limitations and losses in goal pursuit (Baltes 1997).

# THE PERSON AS AUTHOR: THE SELF-NARRATIVE PERSPECTIVE

Beginning in the 1980s, psychologists developed new theories of personality that explicitly conceived of the developing person as a storyteller who draws upon the images, plots, characters, and themes in the sociocultural world to author a life (Hermans et al. 1992, McAdams 1985, Singer & Salovey 1993, Tomkins 1987).

Layered on top of dispositional traits and characteristic adaptations is an internalized and evolving story of the self—a narrative identity that aims to provide a person's life with some semblance of unity, purpose, and meaning (McAdams 2008, McLean et al. 2007). Narrative identity is the storied understanding that a person develops regarding how he or she came to be and where he or she is going in life. It is a narrative reconstruction of the autobiographical past and imagined rendering of the anticipated future, complete with demarcated chapters, key scenes (high points, low points, turning points), main characters, and intersecting plot lines (Conway & Pleydell-Pearce 2000, McAdams 1985). In modern societies, people begin to work on their narrative identities in late adolescence and young adulthood, when individuals are challenged to explore the many adult roles, ideologies, and occupations society offers so as to commit themselves eventually to a psychosocial niche in the adult world and a unifying configuration of the self (Erikson 1963). By the time a person reaches the 20s, therefore, his or her personality has likely expanded and deepened to encompass dispositional traits, characteristic motives and goals, and the first draft of an internalized narrative of the self.

If dispositional traits sketch an outline and characteristic adaptations fill in the details of psychological individuality, narrative identity gives individual lives their unique and culturally anchored meanings. The complex interplay between culture and psychological individuality is especially evident in narrative identity. In constructing self-narratives, people draw on the stories that they learn as active participants in culture; stories about childhood, adolescence, adulthood, and aging; stories distinguishing between what culture glorifies as good characters and vilifies as bad characters; stories dramatizing full and fragmented lives that may strike the reader/viewer as exciting, frightening, infuriating, enlightening, admirable, heroic, dignified, ignoble, disgusting, wise, foolish, or boring (Bruner 1990). Culture, therefore, provides each person with an extensive anthology of stories from which the person may draw in the authoring of narrative identity. Self-authorship involves fashioning the raw materials of a life-in-culture into a suitable narrative form. The author must creatively appropriate the resources at hand while, knowingly or not, working within the bounds set by social, political, ideological, and economic realities; by family background and educational experiences; by gender and role expectations; and by the person's own dispositional traits and characteristic adaptations.

# The Developmental Emergence of Narrative Identity

Human beings begin life as social actors. By mid-childhood, they have become social agents. It is not until adolescence or young adulthood, however, that they become self-authors in society. To be sure, young children can tell stories about the self. As autobiographical memory consolidates itself in the preschool years, young children begin to share accounts of personal events with others. Parents typically encourage children to talk about their personal experiences as soon as they are verbally able to do so (Fivush & Nelson 2004). By the time they reach kindergarten, children typically know that such narrative accounts should follow a canonical story grammar, involving a character/agent who moves in a goal-directed fashion over time, typically confronting obstacles of some kind, reacting to those obstacles to push the plot forward toward a concluding resolution. Cultural factors may loom large for self-storytelling in childhood. For example, studies of conversations between mothers and their young children show that East Asian parents tend to discourage children from touting their own actions in the telling of past events while framing these narrative accounts as opportunities for teaching lessons about life (Wang 2006). By contrast, North American parents are more likely to encourage the child's exploration of thoughts and feelings and to see narrative accounts of events as opportunities for self-expression.

Self-authorship, however, requires more than merely telling stories about what happened

### Narrative identity:

an internalized and evolving life story that a person begins to develop in late adolescence to provide life with meaning and purpose yesterday or last year. To construct a narrative identity, the person must envision his or her entire life—the past reconstructed and the future imagined—as a story that portrays a meaningful sequence of life events to explain how the person has developed into who he or she is now and may develop into who he or she may be in the future. In an influential review, Habermas & Bluck (2000) demonstrated how some of the requisite cognitive skills for self-authorship do not typically come online until adolescence. To construct an integrative life story, the person must first know how a typical life is structured when, for example, a person leaves home, how schooling and work are sequenced, the expected progression of marriage and family formation, what people do when they retire, when people typically die, and so on. These kinds of normative expectations, shaped as they are by both biology and culture, are what Habermas & Bluck (2000) call the "cultural concept of biography." Children begin to internalize the cultural concept of biography in elementary school, but considerable learning in this domain will also occur in adolescence.

Critical to the ability to explain the development of a person over time is what Habermas & Bluck (2000) call "causal coherence." With increasing age, adolescents are better able to provide narrative accounts that explain how one event caused, led up to, transformed, or in some way was/is meaningfully related to subsequent events in one's life. An adolescent girl may explain, for example, why she rejects her parent's liberal political values—or why she feels shy around boys, or how it came to be that her junior year in high school represented a turning point in her understanding of herself—in terms of personal experiences from the past that she has selected and reconstructed to make a coherent personal narrative. She will explain how one event led to another, which led to another, and so on. She will likely share her account with others and monitor the feedback she receives in order to determine whether her attempt at causal coherence makes sense (Thorne 2000). Furthermore, she may now identify an overarching theme, value, or principle that integrates

many different episodes in her life and conveys the gist of who she is and what her biography is all about—a cognitive operation that Habermas & Bluck (2000) call "thematic coherence." In their analyses of life narratives constructed between the ages of 8 and 20, Habermas & de Silveira (2008) show that causal and thematic coherence are relatively rare in autobiographical accounts from late childhood and early adolescence but increase substantially through the teenage years and into early adulthood.

#### Self-Narrative Over the Life Course

The lion's share of empirical research on selfnarratives has examined (a) relations between particular themes and forms in life narratives on the one hand and other personality variables (such as traits and motives) on the other, (b) life-narrative predictors of psychological well-being and mental health, (c) variations in the ways that people make narrative sense of suffering and negative events in life, (d) the interpersonal and social functions of and effects on life storytelling, (e) uses of narrative in therapy, and (f) the cultural shaping of narrative identity (McAdams 2008). To date, there exist few longitudinal studies of life stories, and no long-term efforts, of the sort found in the trait literature, to trace continuity and change in narrative identity over decades of adult development. Nonetheless, the fact that researchers have tended to collect life-narrative data from adults of many different ages, rather than focusing on the proverbial college student, provides an opportunity to consider a few suggestive developmental trends.

Because a person's life is always a work in progress and because narrative identity, therefore, may incorporate new experiences over time, theorists have typically proposed that life stories should change markedly over time. Yet, if narrative identity is to be conceived as a layer of personality itself, then a modicum of differential continuity should be expected. But how should it be assessed? By determining the extent to which a person "tells the same story" from Time 1 to Time 2? If yes, does

the "same story" mean identifying the same key events in a life? Showing the same kinds of narrative themes? Exhibiting the same sorts of causal or thematic connections? In a threeyear longitudinal study that asked college students to recall and describe 10 key scenes in their life stories on three different occasions, McAdams et al. (2006) found that only 28% of the episodic memories described at Time 1 were repeated three months later (Time 2), and 22% of the original (Time 1) memories were chosen and described again three years after the original assessment (Time 3). Despite change in manifest content of stories, however, McAdams et al. (2006) also documented noteworthy longitudinal consistencies (in the correlation range of 0.35 to 0.60) in certain emotional and motivational qualities in the stories (such as positive emotional tone and strivings for power/achievement) and in the level of narrative complexity. Furthermore, over the three-year period, students' life-narrative accounts became more complex, and they incorporated a greater number of themes suggesting personal growth and integration. Other lifenarrative studies have linked themes of personal growth and integration to measures of psychosocial maturity (e.g., Bauer et al. 2005, King & Hicks 2006).

Cross-sectional studies suggest that up through middle age, older adults tend to construct more complex and coherent life narratives than do younger adults and adolescents (Baddeley & Singer 2007). One process through which this developmental difference is shown is autobiographical reasoning, which is the tendency to draw summary conclusions about the self from autobiographical episodes (McLean et al. 2007). Autobiographical reasoning tends to give a life narrative greater causal and thematic coherence (Habermas & Bluck 2000). Pasupathi & Mansour (2006) found that autobiographical reasoning in narrative accounts of life turning points increases with age up to midlife. Middle-aged adults showed a more interpretive and psychologically sophisticated approach to life storytelling, compared to younger people. Bluck & Gluck (2004) asked adolescents (age 15-20), younger adults (age 30-40), and older adults (age 60 and over) to recount personal experiences in which they demonstrated wisdom. Younger and older adults were more likely than the adolescents to narrate wisdom scenes in ways that connected the experiences to larger life themes or philosophies, yet another manifestation of autobiographical reasoning. Singer et al. (2007) found that adults over the age of 50 narrated self-defining memories that expressed a more positive narrative tone and greater integrative meaning compared to those of college students. Findings like these dovetail with Pennebaker & Stone's (2003) demonstration. based on laboratory studies of language use and analyses of published fiction, that adults use more positive and fewer negative affect words, and demonstrate greater levels of cognitive complexity, as they age. The findings are also consistent with a broader research literature in lifespan developmental psychology showing that middle-aged adults tend to express the most complex, individuated, and integrated self-conceptions (e.g., Diehl et al. 2001), and with research on autobiographical recollections showing a positivity memory bias among older adults (e.g., Kennedy et al. 2004).

# PUTTING IT TOGETHER: DEVELOPMENTAL MILESTONES

The idea that the individual moves through a series of clearly demarcated stages of personality development is no longer a fashionable notion in the study of psychological individuality (see sidebar, Culture and the Three Layers of Personality). Temperament and trait models suggest a rather more continuous course of development, with few predictable epochs of transition or moments of sudden change. Life-narrative studies show that people readily think of their own lives as dividing into stages, chapters, and transitional scenes, but each person does this in a different way. Lifecourse perspectives in the social sciences (Levy et al. 2005) emphasize the unpredictable effects of off-time events, serendipity, and societal

Autobiographical reasoning: the tendency to draw summary (semantic) conclusions about the self from autobiographical episodes

# **CULTURE AND THE THREE LAYERS OF PERSONALITY**

The complex relationships between culture and personality may play out somewhat differently for each of the three layers of personality described in this review (McAdams & Pals 2006). From the first perspective of the person as actor, cultures provide different display rules and norms for the expression of trait-based behavior. For example, Japanese extraverts growing up in Kyoto may express their high levels of sociability and positive affectivity in ways that differ dramatically from how their equally extraverted middle-American counterparts express the same tendencies in Columbus, Ohio. High neuroticism may translate into eating disorders and cutting behavior among upper-middle-class American teenaged girls, whereas the same levels of emotional instability may manifest itself as magical thinking and an extreme fear of enemies among teenaged girls in Ghana (Adams 2005). Whether different cultures promote the development of particular dispositional traits over others, however, is a tricky issue. Some studies report mean-level differences in trait scores across cultures (Schmitt et al. 2007), but skeptics argue that these differences are difficult to interpret because people may use local, socialcomparison norms when making trait judgments about themselves and others (Heine et al. 2008). To put it simply, if Japanese participants implicitly compare themselves to other Japanese (because these are the people they know) in making trait judgments about themselves and, likewise, Canadians compare themselves to Canadians, then how might we interpret a finding suggesting that Canadians tend to score higher than Japanese on, say, the trait of agreeableness?

From the second perspective of the person as agent, cultures may show clearer influences on the content and importance of different motives and goals. For example, the well-known distinction between cultural individualism and collectivism and the corresponding emphasis upon independent and interdependent self-construals, respectively (Markus & Kitayama 1991), appears to map much more clearly onto layer-2 personality constructs—such as goals, motives, and values—than onto layer-1 traits. A large and growing body of research suggests that whereas individualist Western cultures may encourage the development of personal goals that privilege the expansion and actualization of the self, collectivist East Asian cultures may more strongly encourage the development of personal goals that aim to promote social harmony and the well-being of one's self-defining

(Continued)

change while still suggesting that development is structured by biological constraints, age-graded norms and role expectations, and by a succession of culturally informed developmental tasks. Whereas personality development may be too gradual and too culturally contingent to follow a lock-step progression of discrete stages, it does nonetheless show enough structure and direction such that developmental milestones may be identified to mark progressive change as well as continuity. A milestone is a marker along the developmental road. The placement of markers is somewhat arbitrary in personality development, but at each point marked the viewer may get an overall sense of what the whole of personality looks like and how far along it has come.

The current review conceives of dispositional traits, characteristic adaptations, and life narratives as three layers of personality, each following its own developmental course. Traits emerge first, as broad individual differences in temperament exhibited by social actors. As temperament dispositions continue to develop and consolidate in childhood, characteristic motives and goals begin to appear, revealing the person's newfound status as a striving agent. In adolescence and young adulthood, a third layer begins to emerge, even as traits and goals continue to evolve. For reasons that are cognitive, social, cultural, and existential, the person eventually becomes an author of his or her own life. constructing and living within a narrative identity that spells out who he or she was, is, and will be in time and culture. Stories are layered over goals, which are layered over traits. It is expected, nonetheless, that dispositional traits, characteristic adaptations, and narrative identity should relate to each other in complex, meaningful, and perhaps predictable ways; for after all, this is all about the development of a whole person. What traits, adaptations, and stories may look like, therefore, and how they may relate to each other may be examined at five particular developmental milestones: age 2, the transition to adolescence, emerging adulthood, midlife, and old age.

# Age 2: Self and Other

The rudiments of psychological individuality appear in the first few weeks of life. Temperament differences in characteristic mood, soothability, attention, response intensity, and inhibition provide early hints of a personality yet to come. Parents react to their infant's temperament, and those responses are assumed to have some impact on the development of personality over the long haul. Genotypically driven differences interact with environments in complex ways and on multiple levels as early differences gradually elaborate into more-orless consistent, trait-like trends in the quality of social action and emotional experience. Temperament differences likely have more immediate impacts on the development of the caregiver-infant attachment bond. Irritable babies (and their caregivers) may have an especially difficult time establishing the smooth, goal-corrected partnership that is so characteristic of securely attached infants and toddlers (Saarni 2006). Secure attachment may be easier to achieve with temperamentally easy babies.

The establishment of a secure attachment bond may be seen as the first great psychosocial goal in personality development (Mikulincer & Shaver 2007). But it is not a goal that the infant self-consciously sets out to achieve. In a general sense, social behavior is goal-directed from the beginning of life, and indeed intentional, goal-directed behavior begins to capture the infant's attention by age one (Tomasello 1999). But it is not until the second and third years of life that the hints of an agentic, goaldirected self begin to show themselves, and then only haltingly. Around 18 months of age, infants/toddlers begin to recognize themselves in mirrors and show a range of other behaviors suggesting that they now have a sense of themselves as selves. The onset of self-recognition behavior roughly coincides with the emergence of social/moral emotions such as pride, embarrassment, shame, and eventually guilt (Tangney et al. 2007). Around the time of the child's second birthday, a sense of what William James conceived as a reflexive, duplex self-an I who groups. Some evidence also suggests that collectivist cultures may stress avoidance goals suggestive of a prevention focus in motivation, whereas more individualistic cultures may stress approach goals suggestive of a promotion focus (Elliot et al. 2001). Of course, cultural differences in goals are matters of degree rather than either/or, and not all studies find large cultural differences (Oyserman et al. 2002). Nonetheless, it would appear that culture's impact on personality may be more readily apparent with respect to goals than traits.

Finally, culture may exert its most profound influences at the level of life narratives (Hammack 2008, McAdams 2006). Stories capture and elaborate metaphors and images that are especially resonant in a given culture. Stories distinguish what culture glorifies as good characters and vilifies as bad characters, and they present the many varieties that fall between. Culture, therefore, may provide each person with a menu of stories about how to live, and each person chooses from the menu. For example, McAdams (2006) showed how highly generative American adults tend to construct their own life stories by drawing upon inspiring American narratives such as rags-to-riches stories and redemptive tales of emancipation and self-fulfillment. Identity choices are constrained and shaped by the unique circumstances of persons' social, political, and economic worlds; by their family backgrounds and educational experiences; and by their dispositional traits and characteristic motives, values, and goals. A person authors a narrative identity by selectively appropriating and personalizing the stories provided by culture.

observes the Me—is beginning to emerge. A social actor from day one, the 2-year-old is now a self-conscious social actor who keenly observes his or her own actions and those of the other actors in the social environment.

At the milestone marker of age 2, the toddler reveals broad and more-or-less consistent individual differences in temperament. The outlines of a dispositional profile can be clearly seen, even though considerable elaboration and change will surely follow (Durbin et al. 2007). Whereas the social actor is beginning to come into profile, the social agent and author are still waiting in the wings. Nonetheless, the age-2 milestone does afford a glimpse of what is to come. The emergence of an I/Me self in the second and third years of life lays the groundwork

for both agency and authorship. What parents describe as "the terrible twos" refers mainly to the child's willful nature, its budding autonomy and egocentric desire to do what it wants to do, no matter what. As a willful, intentional agent, the 2-year-old pushes hard an agenda of desire. Desires make for immediate goals. In a few years, more stable goals will begin to crystallize and a clearer outline of personality's second layer will become visible. Similarly, selfrecognition behaviors signal the emergence of what Howe & Courage (1997) call an "autobiographical self." The child begins to remember, own, and tell autobiographical memories around the age of 2, "my" little stories about things that happened to "me," and about things "I" intended (wanted, desired) to do. The increasingly autonomous 2-year-old self takes the first steps toward becoming a goal-directed striver and autobiographical narrator, foreshadowing the expressions of both agency and authorship in personality.

#### The Transition to Adolescence

Whether viewed as a period of storm and stress or an uncertain limbo sandwiched between two well-defined developmental epochs, adolescence has traditionally been conceived as a transitional phase, identified roughly as the teenaged years. Yet marking its beginning and end has become increasingly problematic. On the front edge of things, hormonal and psychological shifts heralding a transition to come seem to occur years before the advent of puberty's most obvious signs—as early as age 8 or 9. On the back end, surveys of Americans and Europeans show that an increasing number of individuals in their mid-20s still do not consider themselves adults and have not as yet assumed those roles traditionally associated with adulthood-stable jobs, marriage, parenthood (Arnett 2000). Furthermore, the psychosocial issues facing individuals in their early teens (e.g., peer pressure, delinquency) appear to be dramatically different from those facing college freshmen and sophomores (e.g., vocation, intimacy). In that it seems to begin earlier and end

later than once expected and in that its beginning looks nothing like its ending, adolescence is not what it used to be, if it ever was. In that light, it is instructive to identify two different milestones in personality development—one marking the end of childhood itself (roughly age 8–12) and another marking what Arnett (2000) describes as emerging adulthood.

The preteen period, marking the end of childhood and the beginning of adolescence, reveals a rich and newly complexified portrait of psychological individuality. Factor analytic studies of personality ratings suggest that it is around this time that a clear five-factor structure begins to appear for dispositional traits (Roberts et al. 2008). There is a sense, then, in which the structure of dispositional traits is beginning to stabilize, on the eve of adolescence. At the same time, individual differences in self-esteem have begun to emerge. According to Harter (2006), children's self-esteem scores tend to be fairly high and not especially differentiated before the age of 7 or 8. But thereafter self-esteem drops for many children and begins to show more-or-less consistent individual differences. Harter (2006) considers a wide range of explanations for these striking findings, including (a) rising expectations from parents and teachers regarding children's achievement and (b) children's newfound tendency, rooted in cognitive development, to compare themselves to one another in systematic ways. During the same developmental period, researchers typically note the first clear signs of depression (especially in girls) and increases in antisocial behavior (especially in boys). Scores on openness to experience also begin to rise in the preteen years.

By the time they are on the verge of adolescence, children have developed clear goals and motives that structure their consciousness and shape their behavior from one situation to the next and over time. They are now also able to evaluate the worth and progress of their own goal pursuits and projects as they play out across situations and over time. They begin to see what they need to do to achieve those goals on which their self-esteem depends, be they

in the realm of athletics, friendship, schoolwork, or values. They also begin to withdraw investment in goals that seem fruitless—goals for which their own skills and traits, or environmental contingencies and affordances, may be poorly suited. At the same time, older children and young adolescents may hold grandiose fantasies about accomplishment, fame, or notoriety in the future. What Elkind (1981) described as the "personal fable" begins to emerge around this time—a fantastical first draft of narrative identity. The same cognitive skills and developments that enable preteens to evaluate themselves and their goal pursuits (positively or negatively) vis-à-vis their peers may also help launch their first full autobiographical projects, as evidenced in early adolescent diaries, fantasies, and conversations (McAdams 2008). It is during the transition to adolescence, revealed Habermas & Bluck (2000), that individuals begin to see in full what makes up an entire life, from birth through childhood, career, marriage, parenting, and so on, to death. Their first efforts at imagining their own life stories may be unrealistic, grandiose, and somewhat incoherent. But authors have to begin somewhere.

### **Emerging Adulthood**

Arnett (2000) has argued that the period running from about age 17 up through the mid-20s constitutes an integral developmental epoch in and of itself, which he calls emerging adulthood. This demarcation makes good sense in modern postindustrial societies wherein schooling and the preparation for adult work extend well into the 20s and even beyond. The betwixtand-between nature of what was once called adolescence appears to be extending for almost a decade beyond the teenage years for many young men and women today, who are putting off marriage and parenthood until their late 20s and 30s. The movement through this developmental period is strongly shaped by class and education. Less-educated, working-class men and women may find it especially difficult to sustain steady and gainful employment during this period. Some get married and/or begin families anyway, but others may drift for many years without the economic security required to become a full stakeholder in society. Those more privileged men and women headed for middle-class professions may require many years of schooling and/or training and a great deal of role experimentation before they feel they are able to settle down and assume the full responsibilities of adulthood. Many social and cultural factors in modern societies have come together to make emerging adulthood the prime time in the life course for the exploration and development of what Erikson (1963) described as ego identity.

Emerging adulthood marks the beginning of a gradual upward swing for dispositional traits associated with conscientiousness and agreeableness and a decline in neuroticism. As emerging adults eventually come to take on the roles of spouse, parent, citizen, and stakeholder, their traits may shift upward in the direction of greater warmth and care for others, higher levels of social responsibility, and greater dedication to being productive, hard-working, and reliable. Even as temporal stability in individual differences increases, significant mean-level changes in personality traits are to be expected in the 20s and 30s (Roberts et al. 2008). And individual differences in traits combine with many other factors, including gender, to shape life trajectories during this time. For example, longitudinal data from the Berkelev Guidance Study showed that shy (low-extraversion) women in the middle years of the twentieth century were more likely to follow gender-conventional patterns of marriage, homemaking, and motherhood, whereas shy men were more likely to delay marriage, parenthood, and stable careers, and attained less achievement in their careers (Fox et al. 2005).

For the second and third layers of personality, emerging adulthood marks the exploration of and eventual commitment to new life goals and the articulation of a new and ideally integrative understanding of one's life story. Emerging adults begin to see life as a complex and multifaceted challenge in role performance and goal pursuit. At the same time, they seek to

integrate the many different roles, goals, and selves they are managing within an organized identity pattern that provides life with some semblance of unity, purpose, and meaning. Narrative theories of identity describe this effort as a process of orchestrating different voices of the self within an ongoing narrative conversation (Hermans et al. 1992) or integrating different personifications of the self within a single self-defining life story (McAdams 1985). In any case, the main psychosocial task of emerging adulthood is to author a narrative identity. By the time young people have finally "emerged" from emerging adulthood, they have ideally articulated and internalized a more-or-less coherent story of who they were, are, and will be. The story affirms their former and ongoing explorations and their newly established commitments, and it sets them up, psychosocially speaking, for the daunting challenges of generative adulthood in the modern world.

# **Midlife Tipping Points**

In many lives, personality development reaches something of a crescendo in middle adulthood. Against the backdrop of ever-increasing differential continuity in dispositional traits, conscientiousness and agreeableness rise to their apex and neuroticism may bottom out (Roberts et al. 2006). Generativity strivings may peak as midlife adults invest heavily in their families and communities (Peterson & Duncan 2007). Personal agency may be distributed across a broad spectrum of goals and responsibilities, as midlife adults negotiate the roles of parent, grandparent, child of aging parents, aunt and uncle, provider and breadwinner, colleague, neighbor, lifelong friend, citizen, leader, and so on. For the most active and generative adults, this is the prime of life, even as role demands and conflicting goals threaten to overwhelm them. Their life stories express the psychologically energizing themes of agency, communion, integration, and growth (Bauer et al. 2005). For many others, however, it is a time of tremendous disappointment, mounting frustration, and what Erikson (1963) described as midlife stagnation. The long-awaited maturation expected for dispositional traits never really happens; goals are repeatedly nipped in the bud; narrative identity reveals an impoverished psychological life in which positive scenes are often contaminated by bad endings and long-term aspirations are repeatedly quashed.

Two decades of research on life stories shows that American adults in their 40s and 50s demonstrate dramatic individual differences in narrative identity (McAdams 2006). Those reporting low levels of generativity, high levels of depression, and depleted psychological resources construct life stories that fail to affirm progress and growth. Plots go round and round in vicious circles, and positive-affect scenes are often spoiled by negative outcomes. By contrast, those who score high on self-report measures of generativity and overall mental health tend to construct redemptive self-narratives wherein protagonists repeatedly overcome obstacles and transform suffering into personal enhancement and prosocial engagement. These stories often begin with the juxtaposition of emotionally positive scenes, wherein the child is made to feel blessed or special, with emotionally negative scenes, wherein he or she learns early on that other people are not so fortunate and that the world is a dangerous place. As the gifted protagonist journeys forth into an unredeemed world, he or she encounters all manner of adversity, but throughout the narrative bad things usually turn good, giving the plot a clear upward trajectory. The redemptive life stories constructed by psychologically healthy and generative American adults in their midlife years draw upon the quintessentially American discourses of atonement, emancipation, recovery, and upward social mobility (McAdams 2006). Illustrating the complex interplay of personal authorship and cultural influence, the stories reprise cultural themes—both cherished and contested—that may be traced back to such canonical American sources as the spiritual testimonials of Puritans and the autobiography of Benjamin Franklin, and forward to today's Hollywood movies, the self-help industry, and Oprah.

Nonetheless, scattered research findings on personality development across the life course show how the crescendo of midlife eventually subsides. There may be psychological tipping points in midlife when development changes direction, in a sense, or flattens out into a plateau. For example, cognitive and affective complexity appears to peak out for many people in their 50s and then declines (Diehl et al. 2001, Helson & Soto 2005). At some point, midlife adults may begin to scale back goal pursuits and focus their energies on those areas, typically family related, wherein they have made their strongest investments. As they begin to experience the physical and information-processing declines that begin even in early midlife, adults may select goals and strategies for accomplishing goals that optimize their best skills and compensate for areas of weakness (Freund & Riediger 2006). Strategies of primary control (changing the environment to fit one's needs and goals) may gradually give way to strategies of secondary control (changing the self to fit the environment) (Wrosch et al. 2006). At some point in the midlife years, adults appear to shift their perspective on life from one emphasizing expansion, activation, primary control, and information seeking to one emphasizing contraction, protection, secondary control, and the quality of emotional life. The shift is not likely to be sudden, may occur in some domains before others, and is sure to play out in different ways and according to different timetables for different people. But however and whenever it happens, the shift marks a tipping from a life narrative of ascent to one of maintenance and eventual decline.

# On Endings: The Incomplete Architecture of Personality Development

In a classic paper, Baltes (1997) argued that human ontogeny manifests an "incomplete architecture" (p. 366) with increasing age. The bad news, in Baltes's view, is that evolutionary selection pressures make for decreasing genomebased plasticity and biological potential

after early adulthood. The good news is that culture-based resources help to compensate and maintain a favorable gain/loss ratio for many modern adults well into middle age and the early retirement years. Eventually, however, losses outstrip gains and the structure of a life begins to unravel. At the end of the developmental course, cultural resources fail to ameliorate biological constraints. Adjustment breaks down in very old age. In sharp contrast, then, to romantic notions about an enlightened and transcendent final stage of personality development (e.g., Jung 1961), Baltes characterized the psychology of advanced aging in terms of deterioration, breakdown, and entropy.

Personality researchers have not devoted considerable resources as yet to the study of old age. Yet some findings appear to support the picture of an incomplete architecture for personality in old age. Over the age span of 74 to 103, for example, Smith & Baltes (1999) found increasingly negative affective states with age. Martin et al. (2002) observed decreasing differential continuity in traits among the very old and increasing scores on fatigue, depression, and suspiciousness. Teachman (2006) observed that the trend toward lower neuroticism with age appears to reverse itself in the mid-70s. Mroczek & Almeida (2004) observed an increase with age in the kindling effects of stress, such that small stresses seem more likely to add up to ignite debilitating negative reactions among older adults.

Continuing a trend from midlife, old age necessitates the increasing use of secondary control strategies for goals, including goal disengagement. As losses begin to overwhelm gains, older adults must conserve dwindling resources to invest in only the most essential goals. With advanced aging, goals may center largely on health concerns. With respect to narrative identity, elderly adults may draw increasingly on reminiscences as they review the life they have lived (Serrano et al. 2004). Positive memory biases among older people may give life stories a softer glow, while the tendency to recall fewer specific and more generalized memories

with age may simplify life stories (Singer et al. 2007). In the wake of memory loss and increasing frailty, however, the oldest adults may no longer be psychologically involved in the construction of narrative identity. Should serious dementia follow, authorship may fade away, and so too, strong agency, as the oldest old return instead to those most basic issues of living day to day as social actors, conserving energy to focus on the moments left in life, surviving and holding on as well as possible, before death closes the door.

### **CONCLUSION**

The development of personality across the human life course is a complex and multilayered affair. The guiding framework for this review suggests that personality develops as a dynamic constellation of dispositional traits (the person as actor), characteristic goals and motives (the person as agent), and integrative life stories (the person as author). Recent research has examined continuity and change with respect to these three layers of personality. For example, recent research on dispositional traits shows

(a) increasing temporal stability with age and (b) predictable development trends in mean levels of traits over the adult lifespan, while examining the potential effects of gene-by-environment interactions, social roles and social investments, and overall maturational trends to explain patterns of continuity and change in traits. Studies focused on motivational constructs have documented changes in the content and structuring of goals across the life course and developmental trends in the way people think about, draw upon, pursue, control, cope with, and relinquish goals. For the third layer of personality, recent research demonstrates that life narratives increase in complexity and coherence up through midlife while reflecting a range of psychological content whose meanings often reflect cultural themes. Recent empirical findings and theoretical advances suggest that the future is bright for the study of personality development over the full span of life, from birth through old age. Researchers will continue to explore the biological underpinnings and social/cultural contexts of the developing whole person as he or she moves through the life course in the guises of actor, agent, and author.

### **SUMMARY POINTS**

- 1. As it develops over the human life course, personality may be viewed as a constellation of dispositional traits (the person as actor), characteristic adaptations (the person as agent), and integrative life stories (the person as author) situated in time and culture.
- 2. Early temperament dimensions gradually develop into the dispositional traits observed in adulthood through complex, dynamic, and multileveled interactions between genes and environments over time.
- 3. Whereas it is difficult to show especially strong associations between personality ratings in childhood and corresponding dispositional trait scores in adulthood (though some longitudinal associations have been documented), temporal stability for individual differences in traits increases over the life course, reaching impressively high levels in the middle-adult years.
- 4. Cross-sectional and longitudinal studies show that mean-level scores for most traits subsumed within the broad categories of conscientiousness and agreeableness increase, and neuroticism decreases, from adolescence through late middle age.

- 5. Motives, goals, and related characteristic adaptations emerge as salient features of personality in middle childhood. Over the life course, the content, structure, organization, and pursuit of goals may change to reflect normative and idiosyncratic shifts in the social ecology of daily life.
- 6. In late adolescence and young adulthood, individuals typically begin to reconstruct the autobiographical past and imagine the future to develop an internalized life story, or narrative identity, that provides their life with a modicum of meaning and purpose. In personality development, life stories are layered over goals and motives, which are layered over dispositional traits.
- 7. As dispositional traits show normative trends toward greater maturity from adolescence to middle adulthood, goals and narratives show an increasing concern with commitments to family, civic involvement, and productive activities aimed at promoting the next generation. In midlife, redemptive life narratives tend to support generativity and psychosocial adaptation.
- 8. From late midlife through old age, personality development may reveal a plateau and eventual descent, as trait scores show some negative reversals, goals focus more on maintenance of the self and coping with loss, and life narratives express an inexorable decline in the power of self-authorship.

### **DISCLOSURE STATEMENT**

The authors are not aware of any biases that might be perceived as affecting the objectivity of this review.

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### LITERATURE CITED

Adams G. 2005. The cultural grounding of personal relationship: enemyship in North American and West African worlds. 7. Personal. Soc. Psychol. 88:948–68

Allport GW. 1937. Personality: A Psychological Interpretation. New York: Holt, Rinehart & Winston

Arnett JJ. 2000. Emerging adulthood: a theory of development from the late teens through the twenties. *Am. Psychol.* 55:469–80

Asendorpf JB, Denissen JJA, van Aken MAG. 2008. Inhibited and aggressive preschool children at 23 years of age: personality and social transitions into adulthood. *Dev. Psychol.* 44:997–1011

Baddeley J, Singer JA. 2007. Charting the life story's path: narrative identity across the life span. In *Handbook of Narrative Research Methods*, ed. J Clandinin, pp. 177–202. Thousand Oaks, CA: Sage

Baltes PB. 1997. On the incomplete architecture of human ontogeny: selection, optimization, and compensation as foundation of developmental theory. *Am. Psychol.* 52:366–80

Bauer JJ, McAdams DP, Sakaeda AR. 2005. Interpreting the good life: growth memories in the lives of mature, happy people. *J. Personal. Soc. Psychol.* 88:203–17

Bluck S, Gluck J. 2004. Making things better and learning a lesson: experiencing wisdom across the lifespan.

Borkenau P, Riemann R, Spinath FM, Angleitner A. 2001. Genetic and environmental influences on observed personality: evidence from the German Observational Study of Adult Twins. 7. Personal. Soc. Psychol. 80:655-68

Bruner JS. 1990. Acts of Mind. Cambridge, MA: Harvard Univ. Press

Carstensen LL, Pasupathi M, Mayr U, Nesselroade JR. 2000. Emotional experience in everyday life across the adult life span. J. Personal. Soc. Psychol. 79:644-55

# Caspi A, Harrington HL, Milne B, Amell JW, Theodore RF, Moffitt TE. 2003a. Children's behavioral styles at age 3 are linked to their adult personality traits at age 26. 7. Personal. 71:495-513

Caspi A, Roberts BW, Shiner RL. 2005. Personality development: stability and change. Annu. Rev. Psychol.

Caspi A, Sugden K, Moffitt TE, Taylor A, Craig I, et al. 2003b. Influence of life stress on depression: moderation of a polymorphism in the 5-HTT gene. Science 301:386-89

Clark LA, Watson D. 2008. Temperament: an organizing paradigm for trait psychology. See John et al. 2008b, pp. 265–86

Conway MA, Pleydell-Pearce CW. 2000. The construction of autobiographical memories in the self memory system. Psychol. Rev. 107:261-88

Costa PT, McCrae RR. 2006. Age changes in personality and their origins: comment on Roberts, Walton, and Viechtbauer (2006). Psychol. Bull. 132:26-28

De Fruyt F, Bartels M, Van Leeuwen KG, De Clercq B, Decuyper M, Mervielde I. 2006. Five types of personality continuity in childhood and adolescence. F. Personal. Soc. Psychol. 91:538-52

Deci E, Ryan RM. 1991. A motivational approach to self: integration in personality. In Nebraska Symposium on Motivation: 1990, ed. R Dienstbier, RM Ryan, pp. 237-88. Lincoln: Univ. Nebraska Press

Diehl M, Hastings CT, Stanton JM. 2001. Self-concept differentiation across the adult life span. Psychol. Aging 16:643-54

Donnellan MB, Conger RD, Burzette RG. 2007. Personality development from late adolescence to young adulthood: differential stability, normative maturity, and evidence for maturity-stability hypothesis. J. Personal. 75:237-63

Donnellan MB, Lucas RE. 2008. Age differences in the Big Five across the life span: evidence from two national samples. Psychol. Aging 23:558-66

Durbin CE, Hayden EP, Klein DN, Olino TM. 2007. Stability of laboratory-assessed temperament emotionality traits from ages 3 to 7. Emotion 7:388-99

Elkind D. 1981. Children and Adolescents. New York: Oxford Univ. Press. 3rd ed.

Elliot AJ, Chirkov VI, Kim Y, Sheldon KM. 2001. A cross-cultural analysis of avoidance (relative to approach) personal goals. Psychol. Sci. 12:505-10

Emmons RA. 1986. Personal strivings: an approach to personality and subjective well-being. J. Personal. Soc. Psychol. 51:1058-68

Erikson EH. 1963. Childhood and Society. New York: Norton. 2nd ed.

Fivush R, Nelson C. 2004. Culture and language in the emergence of autobiographical memory. Psychol. Sci.

Fox NA, Henderson HA, Marshall PJ, Nichols KE, Ghera MM. 2005. Behavioral inhibition: linking biology and behavior within a developmental framework. Annu. Rev. Psychol. 56:235-62

Fraley RC, Roberts BW. 2005. Patterns of continuity: a dynamic model for conceptualizing the stability of individual differences in psychological constructs across the life course. Psychol. Rev. 112:60-74

Freund AM, Riediger M. 2006. Goals as building blocks of personality and development in adulthood. See Mroczek & Little 2006, pp. 353–72

### Habermas T, Bluck S. 2000. Getting a life: the emergence of the life story in adolescence. Psychol. Bull. 126:748-69

Habermas T, de Silveira C. 2008. The development of global coherence in life narratives across adolescence: temporal, causal, and thematic aspects. Dev. Psychol. 44:707-21

Haeffel GJ, Getchell M, Kiposov RA, Yrigollen CM, DeYoung CG, et al. 2008. Association between polymorphisms in the dopamine transporter gene and depression. Psychol. Sci. 19:62-69

Documents differential continuity from early childhood to young adulthood on traits related to impulse control.

Reviews literature to argue that cognitive skills for narrative identity develop in adolescence.

- Hammack PL. 2008. Narrative and the cultural psychology of identity. Personal. Soc. Psychol. Rev. 12:222–47
  Hampson SE, Andrews JA, Barckley M, Peterson M. 2007. Trait stability and continuity in childhood: relating sociability and hostility to the five-factor model of personality. J. Res. Personal. 41:507–23
- Hampson SE, Goldberg LR. 2006. A first large cohort study of personality trait stability over the 40 years between elementary school and midlife. J. Personal. Soc. Psychol. 91:763–79
- Harter S. 2006. Developmental and individual difference perspectives on self-esteem. See Mroczek & Little 2006, pp. 311–34
- Heine SJ, Buchtel EE, Norenzayan A. 2008. What do cross-national comparisons of personality traits tell us? Psychol. Sci. 19:309–13
- Helson R, Soto CJ. 2005. Up and down in middle age: monotonic and nonmonotonic changes in roles, status, and personality. J. Personal. Soc. Psychol. 89:194–204
- Hermans HJM, Kempen HJG, van Loon RJP. 1992. The dialogical self: beyond individualism and rationalism. Am. Psychol. 47:23–33
- Howe ML, Courage ML. 1997. The emergence and early development of autobiographical memory. *Psychol. Rev.* 104:499–523
- Jackson JJ, Bogg T, Walton KE, Wood D, Harms PD, et al. 2009. Not all conscientiousness scales change alike: a multimethod, multisample study of age differences in the facets of conscientiousness. J. Personal. Soc. Psychol. 96:446–59
- John OP, Naumann LP, Soto CJ. 2008a. Paradigm shift to the integrative Big Five trait taxonomy: history, measurement, and conceptual issues. See John et al. 2008b, pp. 114–58
- John OP, Robins RW, Pervin LA, eds. 2008b. Handbook of Personality: Theory and Research. New York: Guilford. 3rd ed.
- Johnson W, Hicks BM, McGue M, Iacono WG. 2007. Most of the girls are alright, but some aren't: personality trajectory groups from ages 14 to 24 and some associations with outcomes. *J. Personal. Soc. Psychol.* 93:266–84
- Jung CG. 1961. Memories, Dreams, Reflections. New York: Vintage
- Kaufman J, Yang B, Douglas-Palomberi H, Houshyar S, Lipschitz D, et al. 2004. Social supports and serotonin transporter gene moderate depression in maltreated children. Proc. Natl. Acad. Sci. USA 101:17316–21
- Kennedy Q, Mather M, Carstensen LL. 2004. The role of motivation in age-related positivity effect in autobiographical memory. Psychol. Sci. 15:208–14
- King LA, Hicks JA. 2006. Narrating the self in the past and future: implications for maturity. *Res. Hum. Dev.* 3:121–38
- Kochanska G, Murray KT, Harlan ET. 2000. Effortful control in early childhood: continuity and change, antecedents, and implications for social development. *Dev. Psychol.* 36:220–32
- Krueger RF, Johnson W. 2008. Behavioral genetics and personality: a new look at the integration of nature and nurture. See John et al. 2008b, pp. 287–310
- Krueger RF, Johnson W, Kling KC. 2006. Behavior genetics and personality development. See Mroczek & Little 2006, pp. 81–108
- Levy R, Ghisletta P, LeGoff J-M, Spini D, Widmer E, eds. 2005. *Towards an Interdisciplinary Perspective on the Life Course*. London: Elsevier
- Little BR. 1999. Personality and motivation: personal action and the conative evolution. In *Handbook of Personality: Theory and Research*, ed. LA Pervin, OP John, pp. 501–24. New York: Guilford. 2nd ed.
- Lockenhoff CE, Terracciano A, Bienvenu OJ, Patriciu NS, Nestadt G, et al. 2008. Ethnicity, education, and the temporal stability of personality traits in the East Baltimore Epidemiologic Catchment Area Study. J. Res. Personal. 42:577–98
- Lodi-Smith J, Roberts BW. 2007. Social investment and personality: a meta-analysis of the relationship of personality traits to investment in work, family, religion, and volunteerism. *Personal. Soc. Psychol. Rev.* 11:68–86
- Lonnqvist JE, Markinen S, Paunonen S, Henriksson M, Verkasalo M. 2008. Psychosocial functioning in young men predicts their personality stability over 15 years. 7. Res. Personal. 42:599–621
- Markus H, Kitayama S. 1991. Culture and the self: implications for cognition, emotion, and motivation. Psychol. Rev. 98:224–53

Forty-year longitudinal study showing surprisingly low levels of temporal stability for some trait ratings.

Authoritative overview of the role of genes and environments in the development of dispositional traits. Psychological and cultural/historical studies of the life stories of highly generative American adults at midlife.

Comprehensive overview of research and theory on the five-factor model of dispositional traits. Martin P, Long MV, Poon LW. 2002. Age changes and differences in personality traits and states of the old and very old. 7. Gerontol. Psychol. Sci. 57B:144–52

McAdams DP. 1985. *Power, Intimacy, and the Life Story: Personological Inquiries into Identity*. New York: Guilford McAdams DP. 2006. *The Redemptive Self: Stories Americans Live By*. New York: Oxford Univ. Press McAdams DP. 2008. Personal narratives and the life story. See John et al. 2008b, pp. 241–61

McAdams DP, Bauer JJ, Sakaeda A, Anyidoho NA, Machado MA, et al. 2006. Continuity and change in the life story: a longitudinal study of autobiographical memories in emerging adulthood. J. Personal. 74:1371–400
 McAdams DP, de St. Aubin E, Logan RL. 1993. Generativity among young, midlife, and older adults. Psychol. Aging 8:221–30

McAdams DP, Pals JL. 2006. A new Big Five: fundamental principles for an integrative science of personality. Am. Psychol. 61:204–17

McClelland DC. 1985. Human Motivation. Glenview, IL: Scott Foresman

McCrae RR, Costa PT. 2008. The five-factor theory of personality. See John et al. 2008b, pp. 159–81 McCrae RR, Costa PT, de Lima MP, Simoes A, Ostendorf F, Angleitner A, et al. 1999. Age differences in personality across the adult life span: parallels in five cultures. Dev. Psychol. 35:466–77

McLean KC, Pasupathi M, Pals JL. 2007. Selves creating stories creating selves: a process model of self-development. Personal. Soc. Psychol. Rev. 11:262–78

Mikulincer M, Shaver P. 2007. Attachment in Adulthood. New York: Guilford

Mischel W. 2004. Toward an integrative science of the person. Annu. Rev. Psychol. 55:1-22

Mroczek DK, Almeida DM. 2004. The effect of daily stress, personality, and age on daily negative affect. J. Personal. 72:355–78

Mroczek DK, Almeida DM, Spiro A, Pafford C. 2006. Modeling intraindividual stability and change in personality. See Mroczek & Little 2006, pp. 163–80

Mroczek DK, Little TD, eds. 2006. Handbook of Personality Development. Mahwah, NJ: Erlbaum

Mroczek DK, Spiro A. 2007. Personality change influences mortality in older men. Psychol. Sci. 18:371-76

Munafo MR, Clark TG, Moore LR, Payne E, Walton R, Flint J. 2003. Genetic polymorphisms and personality in healthy adults: a systematic review and meta-analysis. *Mol. Psychiatry* 8:471–84

Murray HA. 1938. Explorations in Personality. New York: Oxford Univ. Press

Neyer FJ, Lehnart J. 2007. Relationships matter in personality development: evidence from an 8-year longitudinal study across young adulthood. *J. Personal.* 75:535–68

Ogilvie DM, Cohen F, Solomon S. 2001. A comparison of personal project motives in three age groups. *Basic Appl. Soc. Psychol.* 23:207–15

Oyserman D, Coon HM, Kemmelmeier M. 2002. Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analysis. Psychol. Bull. 128:3–72

Ozer DJ, Benet-Martinez V. 2006. Personality and the prediction of consequential outcomes. Annu. Rev. Psychol. 57:401–21

Pasupathi M, Mansour E. 2006. Adult age differences in autobiographical reasoning in narratives. Dev. Psychol. 42:798–808

Pennebaker JW, Stone LD. 2003. Words of wisdom: language use over the life span. J. Personal. Soc. Psychol. 85:291–301

Peterson BE, Duncan LE. 2007. Midlife women's generativity and authoritarianism: marriage, motherhood, and 10 years of aging. *Psychol. Aging* 22:411–19

Riediger M, Freund AM. 2008. Me against myself: motivational conflicts and emotional development in adulthood. *Psychol. Aging* 23:479–94

Roberts BW, DelVecchio WF. 2000. The rank-order consistency of personality traits from childhood to old age. *Psychol. Bull.* 126:3–25

Roberts BW, Kuncel NR, Shiner R, Caspi A, Goldberg LR. 2007. The power of personality: the comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Persp. Psychol. Sci.* 2:313–45

Roberts BW, O'Donnell M, Robins RW. 2004. Goal and personality trait development in emerging adulthood. 7. Personal. Soc. Psychol. 87:541–50

Roberts BW, Walton KE, Viechtbauer W. 2006. Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. *Psychol. Bull.* 132:1–25

Meta-analysis of 92 longitudinal studies showing clear developmental trends for dispositional traits.

- Roberts BW, Wood D, Caspi A. 2008. The development of personality traits in adulthood. See John et al. 2008b, pp. 375–98
- Rothbart MK, Ahadi SA, Evans DE. 2000. Temperament and personality: origins and outcomes. *J. Personal. Soc. Psychol.* 78:122–35
- Saarni C. 2006. Emotion regulation and personality development in childhood. See Mroczek & Little 2006, pp. 245–62
- Saucier G, Simonds J. 2006. The structure of personality and temperament. See Mroczek & Little 2006, pp. 109–28
- Scheibe S, Freund AM, Baltes PB. 2007. Toward a developmental psychology of *Sehnsucht* (life longings): the optimal (utopian) life. *Dev. Psychol.* 43:778–95
- Schmitt DP, Allik J, McCrae RR, Benet-Martinez V, Alcalay L, et al. 2007. The geographic distribution of Big Five personality traits: patterns and profiles of human self-description across 56 nations. *J. Cross-Cult. Psychol.* 38:173–212
- Schultheiss OC, Pang JS. 2007. Measuring implicit motives. In *Handbook of Research Methods in Personality Psychology*, ed. RW Robins, RC Fraley, RF Krueger, pp. 323–44. New York: Guilford
- Scollon CN, Diener E. 2006. Love, work, and changes in extraversion and neuroticism over time. *J. Personal. Soc. Psychol.* 91:1152–65
- Serrano JP, Latorre JM, Gatz M, Montanes J. 2004. Life review therapy using autobiographical retrieval practice for older adults with depressive symptomatology. Psychol. Aging 19:272–77
- Sheldon KM. 2004. Optimal Human Being: An Integrated Multi-Level Perspective. Mahwah, NJ: Erlbaum Sheldon KM, Elliot AJ, Kim Y, Kasser T. 2001. What is satisfying about satisfying events? Testing 10 candidate psychological needs. 7. Personal. Soc. Psychol. 80:325–39
- Shiner RL. 2006. Temperament and personality in childhood. See Mroczek & Little 2006, pp. 213–30

  Singer JA. 2005. Personality and Psychotherapy: Treating the Whole Person. New York: Guilford

  Singer JA. Reybai B. Baddeley J. 2007. Older wider and happier? Comparing older adults' and college student
- Singer JA, Rexhaj B, Baddeley J. 2007. Older, wider, and happier? Comparing older adults' and college students' self-defining memories. *Memory* 15:886–98
- Singer JA, Salovey P. 1993. The Remembered Self. New York: Free Press
- Smith J, Baltes PB. 1999. Trends and profiles of psychological functioning in very old age. In *The Berlin Aging Study: Aging from 70 to 100*, ed. PB Baltes, KU Mayer, pp. 197–226. Cambridge, UK: Cambridge Univ. Press
- Soto CJ, John OP, Gosling SD, Potter J. 2008. The developmental psychometrics of Big Five self-reports: acquiescence, factor structure, coherence, and differentiation from ages 10 to 20. *J. Personal. Soc. Psychol.* 94:718–37
- Srivastava S, John OP, Gosling SD, Potter J. 2003. Development of personality in early and middle adulthood: set like plaster or persistent change? *Dev. Psychol.* 84:1041–53
- Tangney JP, Stuewig J, Mashek DJ. 2007. Moral emotions and moral behavior. Annu. Rev. Psychol. 58:345–72
- Teachman BA. 2006. Aging and negative affect: the rise and fall and rise of anxiety and depressive symptoms. *Psychol. Aging* 21:201–7
- Terraciano A, Costa PT, McCrae RR. 2006. Personality plasticity after age 30. Personal. Soc. Psychol. Bull. 32:1-11
- Thorne A. 2000. Personal memory telling and personality development. *Personal. Soc. Psychol. Rev.* 4:45–56
- Tomasello M. 1999. Having intentions, understanding intentions, and understanding communicative intentions. In *Developing Theories of Intention: Social Understanding and Self-Control*, ed. PD Zelazo, JW Astington, DR Olson, pp. 63–75. Mahwah, NJ: Erlbaum
- Tomkins SS. 1987. Script theory. In *The Emergence of Personality*, ed. J Aronoff, AI Rabin, RA Zucker, pp. 147–216. New York: Springer
- Walls TA, Kollat SH. 2006. Agency to agentic personalities: the early to middle childhood gap. See Mroczek & Little 2006, pp. 231–44
- Wang Q. 2006. Culture and the development of self-knowledge. Curr. Dir. Psychol. Sci. 15:182-87
- Watson D. 2004. Stability versus change, dependability versus error: issues in the assessment of personality over time. J. Res. Personal. 38:319–50

Links three layers of personality to clinical work with adults.

- Weinstein TAR, Capitanio JP, Gosling SD. 2008. Personality in animals. See John et al. 2008b, pp. 328–48 Wellman HM, Cross D, Watson J. 2001. Meta-analysis of theory of mind development: the truth about false belief. *Child Dev.* 72:655–84
- Winter DG, John OP, Stewart AJ, Klohnen EC, Duncan LE. 1998. Traits and motives: toward an integration of two traditions in personality research. *Psychol. Rev.* 105:230–50
- Wrosch C, Heckhausen J, Lachman ME. 2006. Goal management across adulthood and old age: the adaptive value of primary and secondary control. See Mroczek & Little 2006, pp. 399–421



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