Personality Traits: Stability and Change with Age

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Individual differences in personality traits are generally stable during adulthood; where there are changes, they are generally in the direction of greater maturity. The trends are similar for men and women and across cultures. With advancing age, people generally become more emotionally stable, agreeable, and conscientious, with better impulse control, but less active and less open to new actions and values than younger individuals. Those trajectories provide several insights into adult development, challenging some negative stereotypes about older adults and serving as a reminder that enduring individual differences are more important than age in understanding personality.

Key words: personality traits, aging, cross-cultural, depression, Alzheimer's disease

Introduction

Personality traits are "dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings and actions."[1] These traits show universal trends as age advances, although people generally maintain their relative standing compared with their peers. This report briefly introduces the major personality factors, discusses the rank-order stability of individual differences and normative trends with aging in North America and around the world, and concludes with the relevance of personality traits for health and well-being.

The Five-Factor Model of Personality

Most personality psychologists today agree that five broad factors subsume most personality traits.[2] These five factors are named neuroticism (N), the tendency to experience negative emotions, including anxiety, depression, and anger; extraversion (E), an interpersonal dimension that includes facets such as warmth, sociability, activity, and positive emotions; openness to experience (O), which includes active imagination, preference for variety, and intellectual curiosity; agreeableness (A), which includes altruism, trust, and modesty; and conscientiousness (C), a dimension defined by facets such as order, will to achieve, self-control, and persistence.[1] Those traits can be assessed through personality questionnaires using either self-report or observer rating methods. Observer ratings are particularly useful in cases where the individual is unwilling or unable to complete the test, as, for example, in patients with advanced Alzheimer's disease.[3] Whatever the method used, personality traits are linked to important life outcomes, from health risk behaviours and well-being to academic achievement and political preferences.[4] Personality traits have strong biological roots: twin studies indicate that about 50% of the variance in personality trait scores is accounted for by genetic factors,[5] although lower estimates emerge from family studies.[6] In the past decade, a large number of studies have tried to associate personality traits or mental disorders with several candidate genes, such as the serotonin transporter, but the results have been inconclusive so far. An alternative strategy for identifying trait-related genes is a genome wide scan of a large and genetically homogeneous sample, such as those from founder populations.[6]

Rank-Order Stability

A solid finding in the analysis of personality traits across time is the tendency of adults to maintain their relative standing compared with their age-group peers.[1,7] In other words, a person who scores high on a given trait at the first time will tend to score high again at follow-up, even many years later. Indeed, longitudinal studies have repeatedly found correlations in the range of 0.70–0.80 with retest intervals of up to 10 years. Usually, the greater the time elapsed, the lower the correlation; but long-term longitudinal studies suggest that after the first 20–25 years, the correlation declines to an asymptote around 0.60–0.70.[8,9] These studies, which have followed participants for most of their adult life (up to four decades), clearly indicate that at least two-thirds of the variance in personality traits is stable across adulthood. Even higher estimates of stability were obtained from a multilevel modelling analysis,[10] which indicated that about 85% of variance in personality traits is stable in adults over age 30 years, with the remaining 15% of intraindividual variability explained by normative and nonnormative changes as well as measurement error.[11] These multilevel modelling results clearly confirm that in adulthood there is much more variation across individuals than within individuals across time, challenging stereotypes

that exaggerate age differences and age changes.

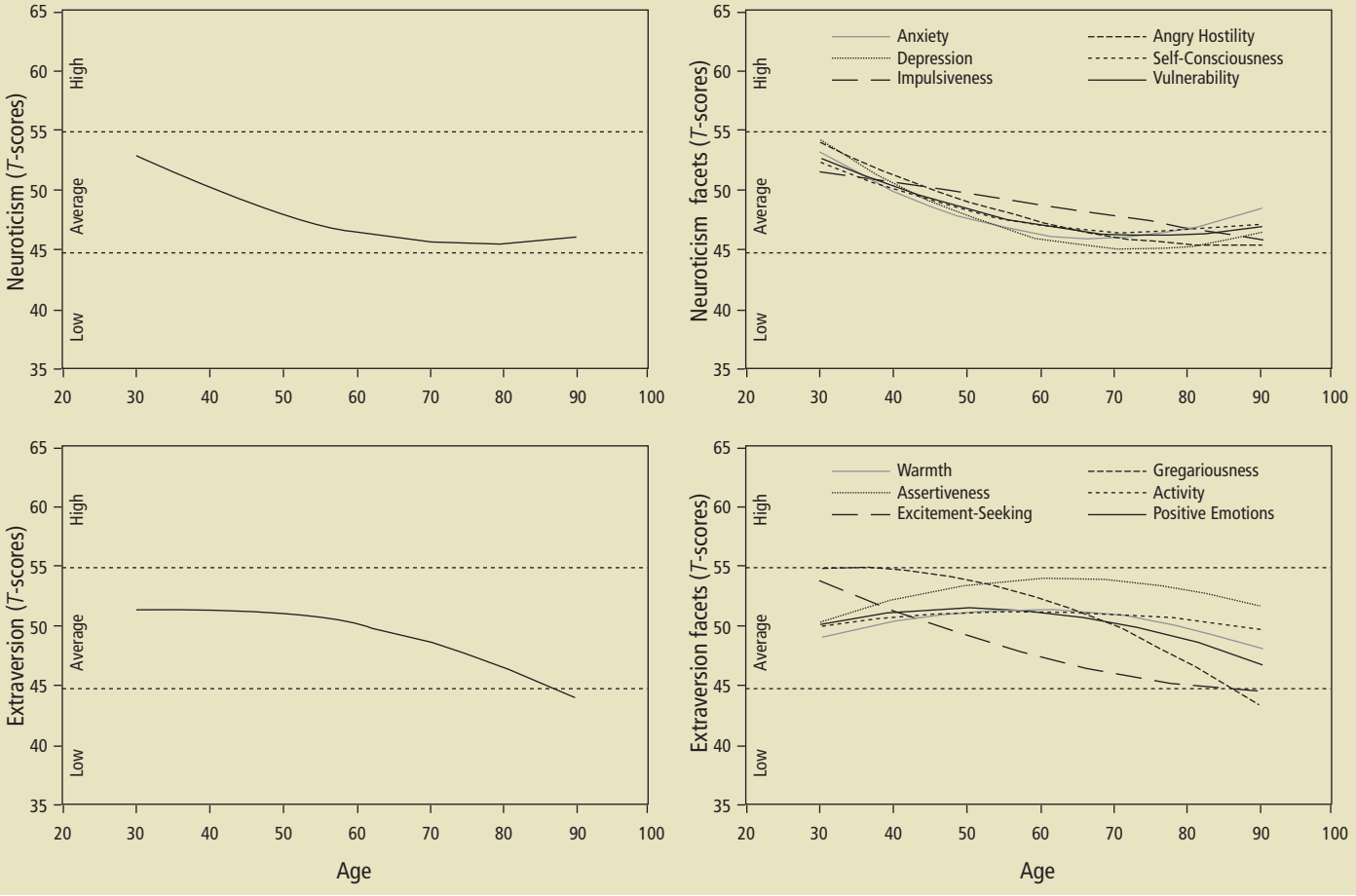
The rank-order stability of personality traits in adulthood is a robust phenomenon, generalizable across gender and educational levels, but there is a developmental increase in stability from childhood and adolescence to young adulthood (that is, up to about age 30 years).[1] Personality maturation in the early part of life reaches a relatively stable configuration of traits in adulthood, which characterize and support the sense of identity of a person through the life span.

Normative Changes

Despite the fact that individuals maintain their relative standing, as a group they tend to show consistent patterns of gradual change with age. Compared with adolescents and college students, adults score lower on N, E, O, and higher on A and C, with differences on the order of one half standard deviation.[1,12] During adulthood, the changes can be roughly summarized by noting that N, E, and O continue to decline, whereas A and C continue to increase.[1] However, the effects of time in middle and old age are much more modest, about one-tenth of a standard deviation per decade.

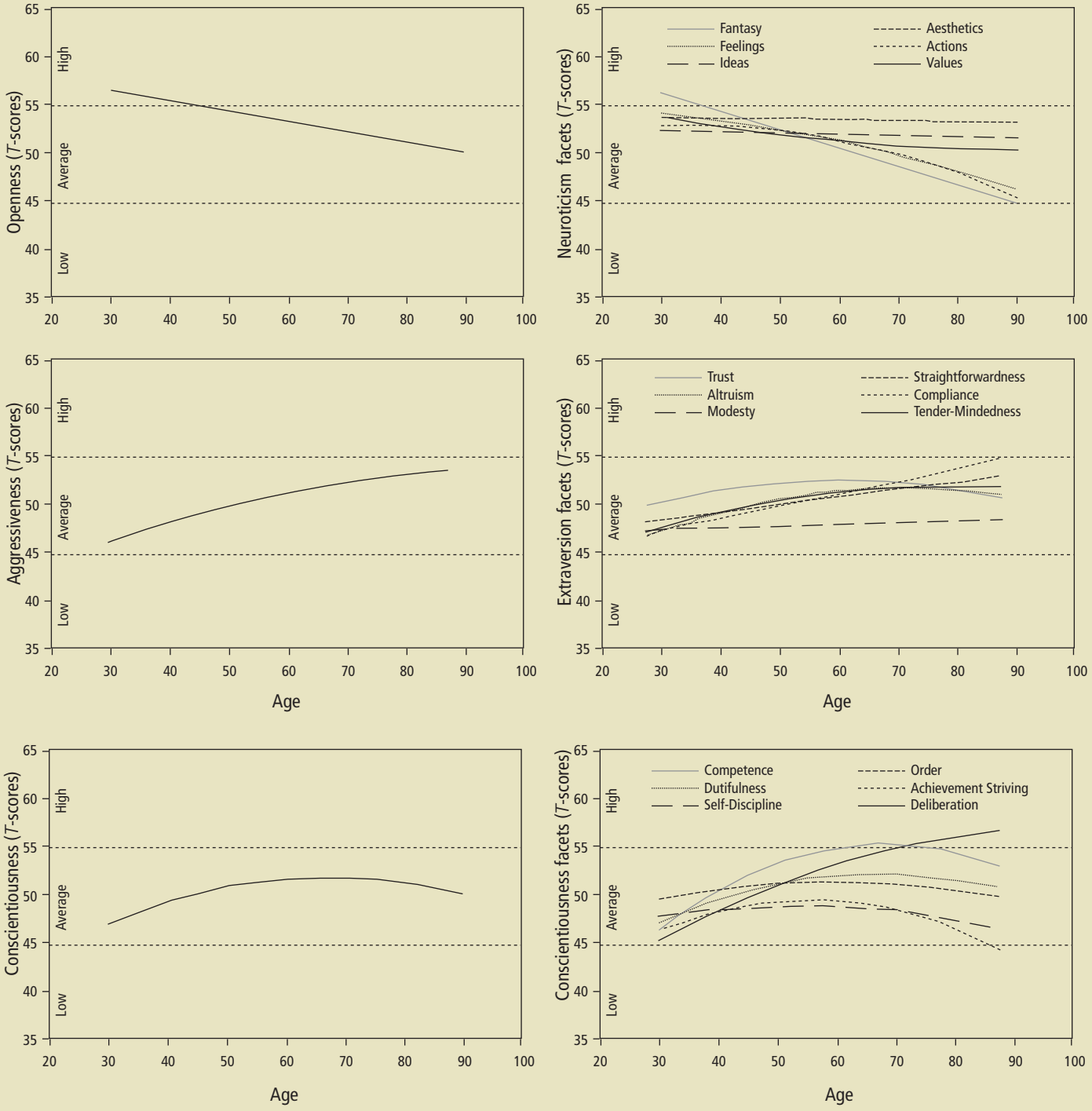
We recently reported data from a large and long-running longitudinal study, the Baltimore Longitudinal Study of Aging,[11,13] with over 5,000 assessments using the Revised NEO Personality Inventory (NEO-PI-R),[12] a measure of 30 specific traits (or facets) that define the five factors. The results were in line with the existing literature, and the use of multilevel modelling[10] allowed us to refine the summary given above by describing curvilinear trends for many traits. As the left-hand panels in Figure 1 show, N declined at a decelerating rate up to age 70–80 years and then was stable or increased slightly in the very old. Although the small upturn in N among the very old seems consistent with the popular belief of a greater vulnerability of older adults to depression, even the oldest adults scored substantially lower on N than adolescents and slightly lower than young and middle-aged adults (up to about age 50 years). E was stable in young adulthood and then declined at an accelerating rate in the very old. O had a linear decline, whereas A had an increase. Conscientiousness followed a convex curve, with an increase up to age 70 years and then a small decline. Interestingly, similar curves were seen for men and women. Other large longitudinal studies have focused on N and E and obtained similar trajectories.[14,15]

Figure 1: Estimated T-Scores for the Five Factors and Their Facets from 30 to 90 Years



In general, the specific lower-order traits associated with each factor (see the right-hand panels in Figure 1) followed the developmental pattern of the broader factor; but in some cases, there were informative variations. Even the oldest men and women showed no tendency to increase in the impulsiveness facet of N, whereas vulnerability to stress had the largest increase after age 70 years, which might be related to the observation that vulnerability is the N facet most affected by the onset of Alzheimer's disease.[16] The largest range of variation was found among the E facets: activity was stable in

Figure 1 cont.: Estimated T-Scores for the Five Factors and Their Facets from 30 to 90 Years



Source: Adapted from Terracciano et al., 2005.[11]

young adulthood and then declined at an accelerating rate in older age, paralleling the physiological change that occurs in the later half of life. By contrast, excitement seeking declined most in the early part of life, perhaps explaining the decline in risky behaviours (e.g., reckless driving)[17] among adults in their twenties. Assertiveness peaked during middle adulthood. Among the facets of O, openness to values showed the largest decline with age, consistent with the notion that older individuals are increasingly less willing to re-examine social, political, and religious values. A similar decline in openness to feelings is consistent with the hypothesis of motivational shifts in emotion regulation in old age.[18] By contrast, artistic interests and intellectual curiosity remain relatively constant.

Cross-Cultural Studies

Another fascinating development of the past few years has been the accumulation of evidence that similar developmental trends can be found in cultures other than North American.[19] In nations with dramatically different recent history, social structure, and educational and political systems, such as Turkey, Croatia, Germany, and South Korea, cross-sectional studies point to similar mean level differences across groups. The same cross-cultural data also indicate that gender differences in personality traits show a pan-cultural pattern, with women scoring higher on N, A, warmth, gregariousness, and openness to aesthetics and feelings, and men higher in assertiveness, excitement seeking, and openness to ideas.[20] Recent observer rating data from about 50 cultures generally confirmed that age and sex differences are universal features of personality traits.[21]

Implications for Health and Well-Being

Despite the increasing burden of physical health problems, older people in general are psychologically better equipped to handle them than are younger adults. Older adults are less prone to "catastrophizing," less impulsive, and more compliant and conscientious. The study of these normative trends also provides a reference point against which to examine individuals with nonnormative patterns, which might be due to genetic factors, life experience, or disease, such as Alzheimer's disease or depression. Several studies[3,16,22] that compared concurrent with retrospective premorbid ratings by knowledgeable observers have found large personality changes at the onset of Alzheimer's disease. Long-term prospective studies are needed to examine whether there are changes years before the diagnosis that could be used as early signs of the onset of the disorder.[23]

The importance of personality traits is evident in everyday life—in making friends, selecting a mate, and voting for political candidates. Traits also influence health risk behaviours such as cigarette smoking, physical inactivity, and low compliance with therapy and health care screening advice. Primary care physicians need to be aware of the many implications of personality traits for the health and well-being of their patients. Some of these are summarized in Table 1. Of course, in order to use such a table, the physician must be able to assess the personality of the patient. It is usually easy to tell the difference between an extreme extravert and an extreme introvert, but many other judgments cannot so easily

Table 1: Some Implications of Personality Traits for Health and Health Care Behaviours

Factor	Low Scorers	High Scorers
Neuroticism	Underreporting of symptoms; higher psychological well-being	Anxiety, depression, and other psychiatric disorders; excessive somatic complaints and/or reluctance to seek diagnosis and treatment
Extraversion	Less likely to volunteer information; less physically active; less likely to be health optimists	Easy physician-patient rapport; willingness to talk about problems; higher level of physical activity; higher psychological well-being
Openness	See physicians as authority figures; prefer conventional medical treatment; prefer concrete psychotherapies (e.g., behaviour modification)	Likely to seek second opinions and conduct own research on diseases; willing to consider innovative and alternative therapies
Agreeableness	Possible increased risk for coronary disease; noncompliant; "unlikeable"; prone to drug abuse, paranoia	Likeable patients, but perhaps overcompliant; unwilling to raise legitimate complaints
Conscientiousness	Prone to health risk behaviours including drugs, violence, risky sex practices; poor compliance with exercise and medical regimens; may require external support and special motivation	Wellness behaviours; medical adherence; greater longevity

Source: Adapted from Stone et al.[24]

Key Points

- Most people become more emotionally stable, agreeable, and conscientious but less open and active with age.
- During adulthood the changes in personality are relatively small, supporting a sense of identity throughout the adult lifespan.
- Similar maturational trends are seen across cultures, consistent with the view that changes in personality follow intrinsic biological aging processes.
- Women and men show similar indices of stability and change.
- Stability and change in personality traits have health implications, from risk factors to consider in prevention plans to therapeutic tools in individualized treatment.

be made. Accurate personality assessment requires the use of reliable and valid measures, either through consultation with an assessment psychologist or through use of instruments such as the NEO-PI-R, which are available to health care professionals with basic training in psychological assessment. Because personality traits are enduring dispositions, a single assessment can form a useful addition to the medical record for many years.

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