

What Accounts for Personality Maturation in Early Adulthood?

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Abstract

During early adulthood, individuals tend to increase in personality traits that mark greater social maturity. The compelling question is why most young adults change in the direction of greater maturity. Recently, this question has been addressed by a diverse array of research, ranging from behavioral-genetic to prospective longitudinal and cross-cultural studies. The present article reviews the new insights gained from these studies, discusses their implications for two theoretical accounts of personality-trait development, and highlights challenges for future research.

Keywords

personality development, Big Five, social investment, culture, behavioral genetics, early adulthood

For most individuals, early adulthood is an exciting time. It is a time of profound changes, some of which have lasting ramifications for the remainder of their lives (Rindfuss, 1991). It is also a time of personality-trait change, and the direction of change is clearly positive. Most young adults increase in emotional stability, conscientiousness, and, to a lesser degree, agreeableness, three traits that mark greater social maturity (Roberts & Mroczek, 2008). The question is, why do personality traits—the relatively enduring patterns of thoughts, feelings, and behavior that distinguish individuals from one another—show such pervasive changes during early adulthood, and why do most young adults change in the direction of greater maturity while some fail to conform to this trend?

Recently, this question has been addressed from multiple angles and by means of diverse research, ranging from behavioral-genetic to prospective longitudinal and cross-cultural studies. Here, I review the new insights gained from these studies, discuss their theoretical implications, and highlight challenges for future research. Before reviewing these findings, I describe the normative patterns of personality-trait development in early adulthood and introduce two competing theories that claim to explain these patterns.

Personality-Trait Development in Early Adulthood

During recent years, a large number of studies have shown that personality traits can and do change throughout the life span (for reviews, see Roberts, Wood, & Caspi, 2008; Specht et al., 2014). One robust finding to emerge from this literature is that personality-trait change is most pronounced during early adulthood, between ages 18 and 40 (Roberts, Walton, & Viechtbauer, 2006). The average young adult shows remarkable increases in emotional stability, conscientiousness, and, to a lesser degree, agreeableness. As illustrated in Figure 1, the normative gains lead to substantial mean-level shifts in these three Big Five personality traits, a pattern that has often been referred to as the *maturity principle* of personality development (Roberts et al., 2008). Social maturity can be described as the capacity to become a productive contributor to society. Moreover, individuals with a socially mature personality profile have been found to be more

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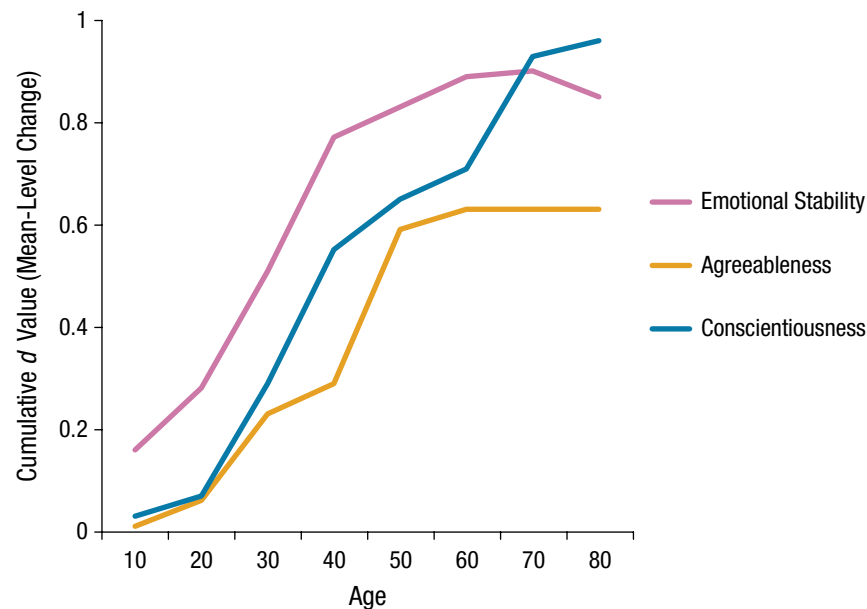


Fig. 1. Cumulative mean-level change in three Big Five personality-trait domains, based on data from a meta-analysis of 92 longitudinal studies by Roberts, Walton, and Viechtbauer (2006). Mean-level change reflects the degree to which a population decreases or increases in specific traits over a specific period of time. These graphs were created by adding average amounts of standardized mean-level change (d scores) from separate decades of the life course together, under the assumption that personality-trait change may be cumulative. Adapted from “Patterns of Mean-Level Change in Personality Traits Across the Life Course: A Meta-Analysis of Longitudinal Studies,” by B. W. Roberts, K. E. Walton, and W. Viechtbauer, 2006, *Psychological Bulletin*, 132(1), p. 15. Copyright 2006 by the American Psychological Association. Adapted with permission.

successful in their relationships and work, to lead healthier lives, and to live longer (Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Of course, these mean-level trends do not imply that personality maturation is ubiquitous. Several longitudinal studies have found reliable individual differences in the timing, magnitude, and even direction of personality-trait change. So, although most young adults change in the direction of greater maturity, a nontrivial minority deviate from this trend (Roberts & Mroczek, 2008).

Theories of Personality-Trait Development in Early Adulthood

There is little doubt that personality-trait development reflects age-graded influences of both genetic and environmental factors (Bleidorn, Kandler, & Caspi, 2014). However, there is an ongoing debate about the relative importance of these two factors: Is it primarily intrinsic biological processes or rather changes in the individual's environment that drive personality-trait development? Two leading theories offer radically different answers to this question.

Five-factor theory (FFT; McCrae & Costa, 2008) argues that personality-trait development is largely controlled by genetically determined biological influences, with environmental influences playing only a negligible role.

Personality traits are defined as “endogenous dispositions that follow intrinsic paths of development essentially independent of environmental influences” (McCrae et al., 2000, p. 173).

An alternative account of personality-trait change has been elaborated within the framework of social-investment theory (SIT; Roberts, Wood, & Smith, 2005). SIT proposes that age-graded life transitions, such as entering the labor force, marrying, or becoming a parent, stimulate personality maturation because they force young adults to invest in new social roles. These roles are connected to societal expectations and new behavioral demands. To the extent that these demands can be formulated in trait terms (e.g., to act in a conscientiousness way), transitional-role experiences are supposed to form a reward structure for personality maturation (Roberts & Wood, 2006).

In recent years, a methodically diverse set of studies have put these two conflicting theories to the test. In the following, I present the findings from behavioral-genetic, cross-cultural, and prospective-longitudinal research.

Behavioral-Genetic Research

Longitudinal twin studies offer particularly powerful ways to examine the relative importance of genetic and environmental factors in personality-trait development

(e.g., Bleidorn, Kandler, Riemann, Angleitner, & Spinath, 2009, 2012; Kandler et al., 2010). Recently, three reviews have summarized the results of 20 years of longitudinal behavioral-genetic research on personality-trait development (Bleidorn, Kandler, & Caspi, 2014; Briley & Tucker-Drob, 2014; Kandler, 2012). With regard to early adulthood, these reviews converged on three findings. First, the relative influence of genetic factors on personality is substantial at all ages throughout life, but it peaks during early adulthood. Second, environmental influences become more important and increasingly stable during early adulthood. Third, genetic and environmental influences contribute to both stability and change in personality traits.

These findings are partly in line with the predictions of FFT, because they underline the important role of genetic factors in adult personality development. However, these studies also highlight the relevance of environmental factors, a finding that is incompatible with FFT but in line with SIT. In particular, the finding of an increasing influence of environmental factors in early adulthood provides indirect support for the hypothesis that normative life transitions trigger personality-trait development in early adulthood (Bleidorn, Kandler, & Caspi, 2014).

Thus, the behavioral-genetic literature provides strong evidence for the importance of environmental influences on personality-trait development in early adulthood, but the question remains regarding what the most important environmental influences are. Classic behavioral-genetic studies examine the net influences of genetic and environmental factors, regardless of the number of genetic and environmental factors involved and irrespective of the complexity of their effects. These studies are therefore uninformative regarding the specific kind and operation of genetic influences and environmental factors involved. Hence, it remains open as to whether it is social-role transitions or other environmental factors that trigger personality-trait change in early adulthood. A more direct test of this hypothesis has recently been carried out in a large-scale cross-cultural study.

Cross-Cultural Research

Most research on personality-trait development has been done on samples from Western societies, but there is evidence to suggest that individuals across the world become more agreeable, conscientious, and emotionally stable during early adulthood (McCrae et al., 2000). According to FFT, the apparent lack of cultural differences supports the claim that personality-trait development is a genetically determined human universal. To the extent that there are any cultural differences, they should be neither systematic nor related to any sociocultural differences (McCrae et al.,

2000). In contrast, SIT proposes that people across different cultures change in similar ways, because a majority of people in a majority of cultures go through similar life transitions at approximately the same ages (Roberts et al., 2005). As a result, when examining broad developmental trends across broadly similar cultures, the predictions of FFT and SIT will converge. The predictions will diverge, however, when comparing across cultures that are sufficiently diverse to differ in their cultural expectations regarding the normative timing of adult-role transitions. Specifically, SIT would predict earlier personality maturation in cultures where adult-role responsibilities occur at an earlier age.

Recently, my colleagues and I (Bleidorn et al., 2013) provided the first cross-cultural test of this hypothesis using data from a large Internet-based sample of young adults from 62 nations. In line with both FFT and SIT, there was evidence for similar age trends in different cultures: Emotional stability, agreeableness, and conscientiousness tended to increase. Yet there were also significant cultural differences in the magnitude of age effects on personality traits (Fig. 2). These cultural differences could be partly explained by cultural differences in the normative timing of adult-role transitions. Specifically, cultures with an earlier normative timing of job-role transitions were marked by an earlier onset of personality maturation (Fig. 3). Strikingly, no effects were found for the normative timing of marriage and parenthood, two social roles that are typically considered to be the most pervasive markers of adult status.

Overall, these findings provided cross-cultural evidence for the propositions of SIT and showed that normative life transitions in the work domain are important catalysts for personality maturation (see also Bleidorn, Klimstra, et al., 2014). At the same time, these findings raise the question of why specific forces seem to drive personality-trait change during the transition to the job role but apparently not during the transition to marriage and parenthood. Longitudinal studies that examine how and under which conditions personality-trait changes unfold during the transition to different social roles are needed to address this question.

Longitudinal Research

Traditional longitudinal tests of SIT have typically measured personality twice or more over a certain period of time and compared individuals who have experienced social-role transitions with individuals who have not (e.g., Specht, Egloff, & Schmuckle, 2011). Several of these studies demonstrated that experiences in work and romantic relationships are associated with personality-trait change (e.g., Roberts, 1997; Roberts, Caspi, & Moffitt, 2003). For example, Neyer and Asendorpf (2001) found

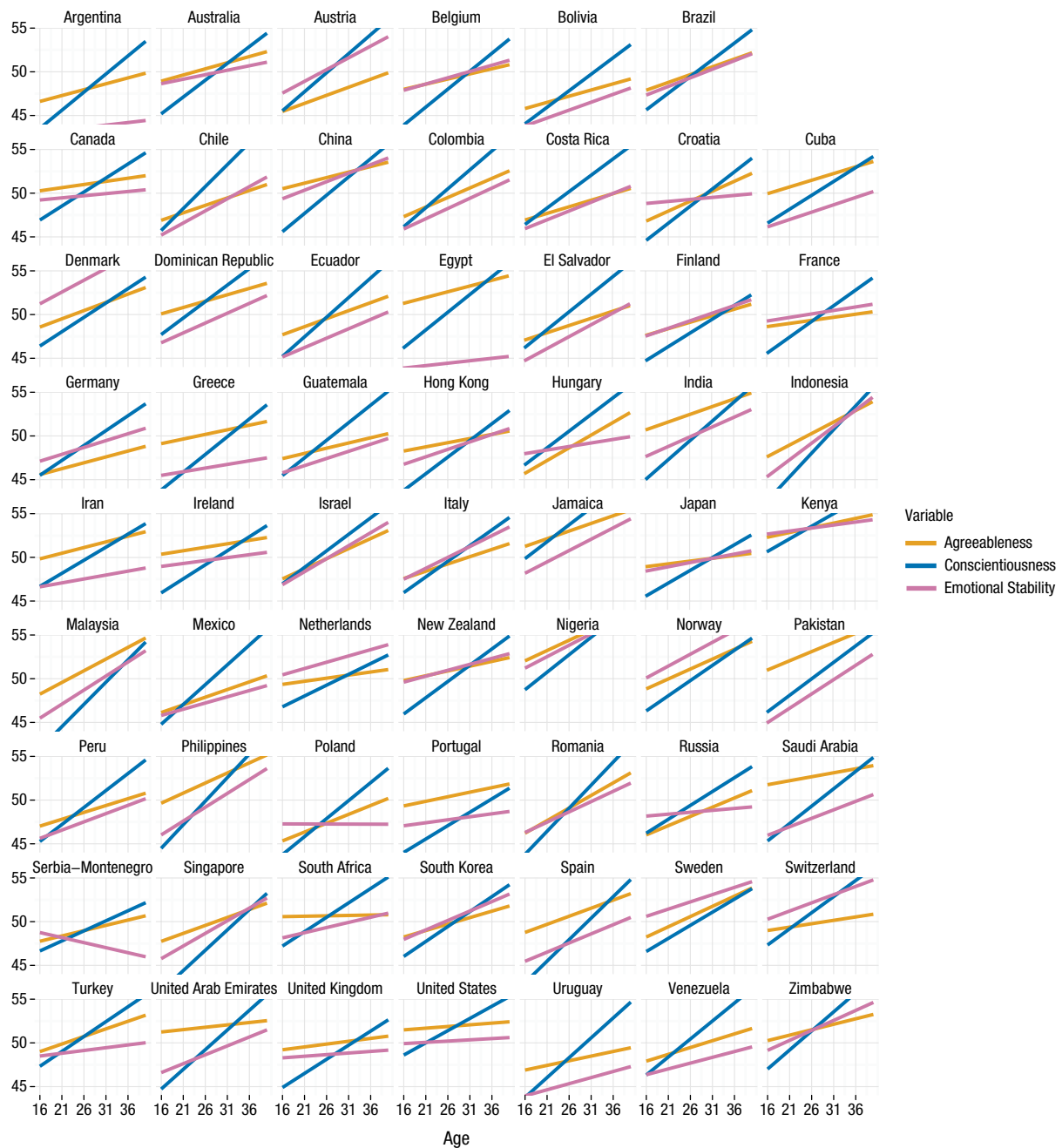


Fig. 2. Age effects on emotional stability, agreeableness, and conscientiousness, based on data from 884,328 young adults (ages 16–40 years) from 62 nations (Bleidorn et al., 2013).

that the transition to the first long-term relationship was associated with increases in conscientiousness and decreases in neuroticism; Specht et al. (2011) showed that the transition to the first job was associated with increases in conscientiousness. However, some of these patterns did not replicate (Specht et al., 2011), and some studies found different trends, such as decreases in emotional stability after the transition to parenthood (Jokela, Kivimäki, Elovainio, & Keltikangas-Järvinen, 2009).

Notably, these “traditional” longitudinal studies are not without limitations. First, measurement occasions have often been scheduled according to a fixed plan (e.g., bi-annual or even decennial) instead of being tied to the transitional event (Luhmann, Orth, Specht, Kandler, & Lucas, 2014). Second, the operationalization of social-role transitions has been often restricted to simple demographic measures (e.g., parental status). Hence, it is possible that personality-trait change during social-role

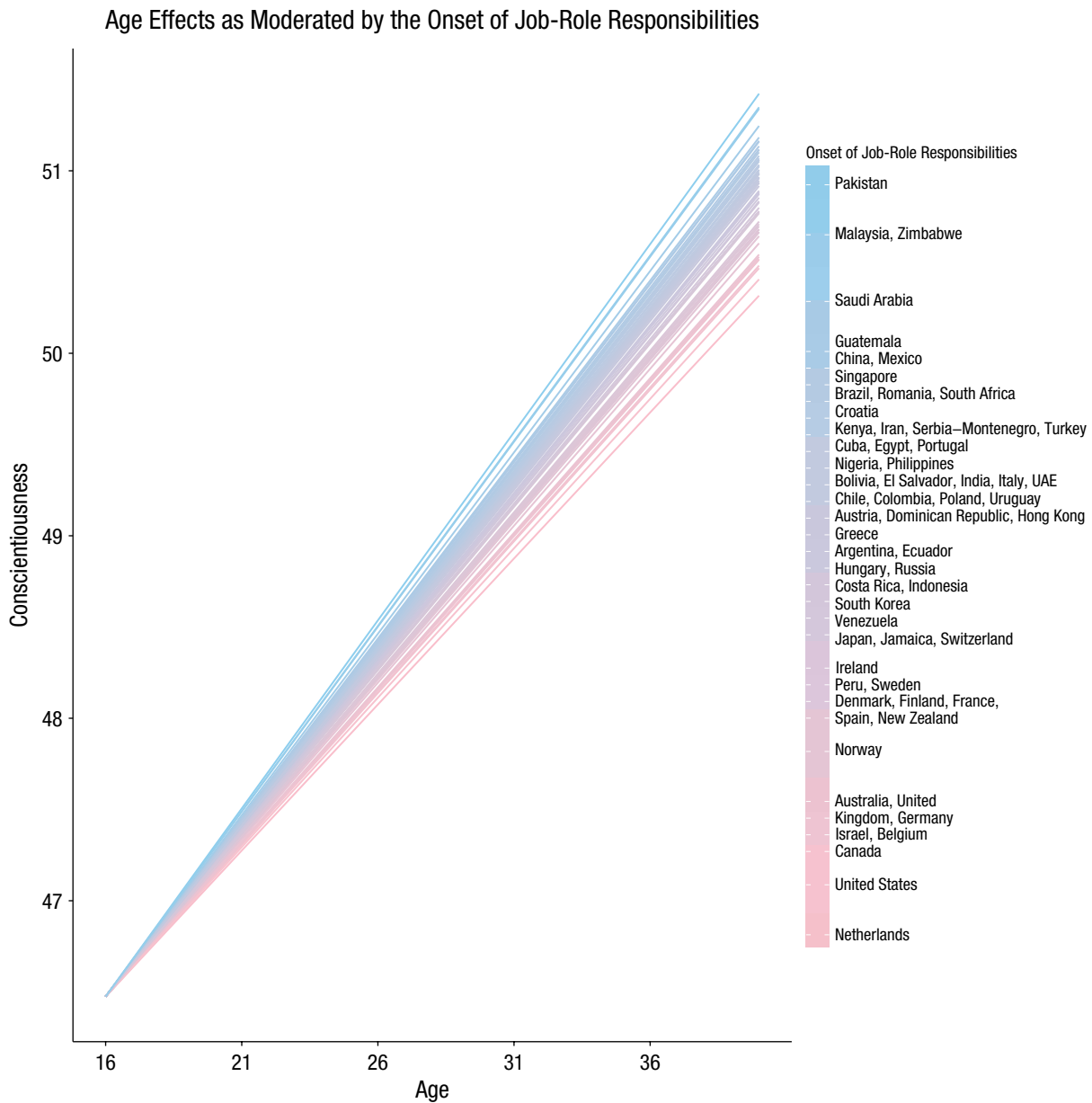


Fig. 3. Age effects on conscientiousness as moderated by the normative timing of the transition from education to job-role responsibilities, based on data from 884,328 young adults (ages 16–40 years) from 62 nations (Bleidorn et al., 2013).

transitions has been underestimated or gone undetected because the time intervals and/or the operationalization of the experiences were not appropriate. A third problem concerns the correlational nature of the studies, which leaves it open as to whether social-role transitions cause personality-trait change, whether personality-trait change causes social-role transitions, or whether unknown third variables (e.g., genetic factors) cause both.

Recently, researchers conducting longitudinal studies have taken important steps to address these problems (e.g., Zimmermann & Neyer, 2013). Specifically, they used

prospective-longitudinal designs including frequent measurement occasions that were closely timed around the transitional event. By adding control groups, these studies further aimed to disentangle age-related and event-related personality-trait change. The findings of these studies suggest that personality-trait change can occur within very short time periods if triggered by major life transitions, such as graduation from school (Bleidorn, 2012) or an international student-exchange year (Zimmermann & Neyer, 2013). For example, despite a relatively short observation period of only 12 months, I (Bleidorn, 2012) found

substantial increases in conscientiousness in students who graduated from school but no change in students who did not graduate during the observation period. Further supporting SIT, this study found that students who invested more in their educational achievement showed the most pronounced increases in conscientiousness.

Overall, the current longitudinal evidence for the hypothesis that social-role transitions drive personality-trait development is mixed. Stronger research designs are needed to examine when, why, and how personality-trait change occurs in the context of social-role transitions. Moreover, virtually all longitudinal research has been conducted on Western samples, leaving open whether the results can be generalized to other cultures and societies.

Future Directions

In view of the still-preliminary longitudinal evidence and the paucity of studies on samples from non-Western cultures, I see three main challenges for future research on personality-trait development—not only in early adulthood but across the life span. First, scholars need to study personality-trait development in non-Western countries (McCrae et al., 2000). The cross-cultural research by Bleidorn et al. (2013) made an important step in that direction; however, the cross-sectional data was not suited to examine personality-trait change as it unfolds over time. Longitudinal studies in countries with different social norms are needed to test the generalizability of SIT and to identify further cultural moderators at both the macro-environmental and the individual level.

Second, high-resolution prospective-longitudinal studies are needed because they are particularly well suited to examine the timing and process of personality-trait change. Specifically, longitudinal designs with frequent and well-timed measurement occasions before and after a transitional event are needed to detect personality-trait change in the context of social-role transitions (Luhmann et al., 2014). Ideally, these studies should employ multiple methods, including self- and other reports, and measure a broad range of personality characteristics and social-role experiences. Moreover, to disentangle intrinsic, age-related changes from extrinsic, event-related changes, future studies also need to examine well-matched control groups who do not experience that event. A particularly well-matched control group would consist of monozygotic (MZ) twin siblings. MZ twins share both a common genotype and a similar rearing environment. Hence, longitudinal co-twin control studies on MZ twins who are discordant on exposure to certain life transitions would combine the advantages of observational studies and experimental designs, because MZ twins are perfectly matched on a multitude of known and unknown potential confounding factors, including their genetic

background (McGue, Osler, & Christensen, 2010). Particularly strong support for the predictions of SIT would thus be provided by a prospective co-twin control study showing that MZ twins who differ in the timing, investment, or mastery of social-role transitions also differ in the timing, degree, or direction of personality-trait change.

Third, better understanding the mechanisms that drive personality-trait change requires zooming in on the specific biological and psychological processes that occur during life transitions as well as outside of transitional periods. That is, rather than studying broadly defined environmental experiences or the net influence of genetic factors, future research would benefit from testing specific hypotheses about the biological and psychological pathways that mediate or moderate these effects. For example, Casey and Caudle (2013) recently discussed the implications of the developmental interplay among control-related prefrontal brain regions and reward-related subcortical brain regions for the development of self-control. They proposed that during adolescence and early adulthood, the connectivity between these brain regions is strengthened and provides a mechanism for top-down modulation of the subcortically driven emotional behavior. This mechanism is supposed to increase young adults' capacity for self-control and might be also relevant for the observed increases in conscientiousness, emotional stability, and agreeableness.

Likewise, a more comprehensive assessment of potentially relevant psychological mediators and moderators is needed to understand the ways by which the experience of social-role transitions might or might not lead to personality-trait change. Promising candidates might be, for example, individuals' goals and self-regulation skills (Hennecke, Bleidorn, Denissen, & Wood, 2014; Roberts, O'Donnell, & Robins, 2004).

Conclusion

Recent research on personality-trait development in early adulthood has highlighted the benefits of taking a multimethod perspective. New insights from behavioral-genetic, cross-cultural, and prospective-longitudinal research suggest two major conclusions: First, genetic influences undoubtedly play an important role, but environmental influences on personality-trait development become more important and increasingly stable during the period of early adulthood. Second, social-role transitions are related to personality-trait change in the direction of greater social maturity. However, a third conclusion emerging from this research is that the evidence for the timing, process, and mechanisms of personality trait-change is still at a preliminary stage. Future research needs to be enriched

by cross-cultural and prospective-longitudinal designs that are suited to pinpoint when, how, and why personality-trait change occurs in (and outside) the context of social-role transitions.

Recommended Reading

- Bleidorn, W., Klimstra, T. A., Denissen, J. J. A., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2013). (See References). The first systematic cross-cultural study that examined the links between social-role transitions and age-graded personality-trait change in early adulthood.
- Briley, D. A., & Tucker-Drob, E. M. (2014). (See References). A meta-analysis of genetic and environmental continuity in personality-trait development.
- Jackson, J. J., & Allemand, M. (2014). Moving personality development research forward: Applications using structural equation models. *European Journal of Personality, 28*, 300–310. A well-written article that discusses three longitudinal structural-equation models with regard to underexamined and novel questions in the field of personality-trait development.
- Luhmann, M., Orth, U., Specht, J., Kandler, C., & Lucas, R. E. (2014). (See References). A highly accessible article that offers strong arguments for a more explicit consideration of time in theories and empirical studies on personality development.
- Roberts, B. W., Wood, D., & Caspi, A. (2008). (See References). A comprehensive review for readers who wish to expand their knowledge on the development of personality traits in adulthood.

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