

Annual Review of Psychology Personality Psychology

Brent W. Roberts^{1,2} and Hee J. Yoon¹

¹Department of Psychology, University of Illinois at Urbana-Champaign, Urbana, Illinois 61820, USA; email: bwrobrts@illinois.edu, yoon14@illinois.edu

²Hector Research Institute of Education Sciences and Psychology, University of Tübingen, 72072 Tübingen, Germany

Annu. Rev. Psychol. 2022. 73:489-516

First published as a Review in Advance on September 13, 2021

The *Annual Review of Psychology* is online at psych.annualreviews.org

https://doi.org/10.1146/annurev-psych-020821-114927

Copyright © 2022 by Annual Reviews. All rights reserved



www.annualreviews.org

- Download figures
- Navigate cited references
- · Keyword search
- Explore related articles
- Share via email or social media

Keywords

personality, personality development, personality traits, motivation, skills, narrative identity

Abstract

Personality psychology, which seeks to study individual differences in thoughts, feelings, and behaviors that persist over time and place, has experienced a renaissance in the last few decades. It has also not been reviewed as a field in the *Annual Review of Psychology* since 2001. In this article, we seek to provide an update as well as a meta-organizational structure to the field. In particular, personality psychology has a prescribed set of four responsibilities that it implicitly or explicitly tackles as a field: (a) describing what personality is—i.e., what the units of analysis in the field are; (b) documenting how it develops; (c) explaining the processes of personality and why they affect functioning; and (d) providing a framework for understanding individuals and explaining their actions, feelings, and motivations. We review progress made over the last 20 years to address these four agendas and conclude by highlighting future directions and ongoing challenges to the field.

Contents

INTRODUCTION	490
WHAT ARE THE UNITS OF ANALYSIS IN PERSONALITY SCIENCE?	491
Personality Traits	
Motivation	492
Skills/Abilities	492
Narrative Identity	493
ATTEMPTS AT INTEGRATING UNITS OF ANALYSIS	494
PERSONALITY DEVELOPMENT	495
PERSONALITY PROCESS	499
UNDERSTANDING INDIVIDUALS	502
BASIC RESEARCH ISSUES	503
INSTITUTIONAL ISSUES	505
CONCLUSION	507

INTRODUCTION

After conducting himself in ways that most other politicians would feel compelled to apologize for, President Donald Trump did nothing of the sort. Why was he unwilling to apologize? Why, in contrast, did someone like Chancellor Angela Merkel of Germany famously commit to being the bearer of the hard truth when it came to COVID-19, even when the consequences damaged her standing? How did Frederick Douglas move from being a slave to being a successful abolitionist and publisher, and how did his experience shape him as an adult? Why are all of these people different from one another? These are some of the questions the science of personality psychology tries to answer.

Based on its energy, activity, and productivity, the field of personality psychology has clearly had a renaissance since the last *Annual Review of Psychology* articles covering the field (Funder 2001, Swann & Seyle 2005). In 2001, the field was still experiencing the fallout from the person-situation debate, new debates had begun on whether and how personality and personality traits developed, and the field was still wrestling with the vestiges of the Big Theories that had dominated the field for decades. Since that time, the person-situation debate has subsided, with most researchers concluding that both extremes hypothesized at the time were unwarranted (Funder 2008, Lucas & Donnellan 2009). The riddle of personality development received a thorough treatment with an explosion of longitudinal studies (Denissen 2014, Graham et al. 2020); and, for the most part, the grand theorists of the past, such as Freud, Jung, Adler, Rogers, Skinner, and others, were set aside in favor of more pragmatic models that would guide research programs but would not make sweeping or untestable assumptions about human nature. The move away from grand theories and toward understanding the structure and development of personality resulted in a huge influx of research that continues to this day.

Given the prolific output in personality psychology over the last two decades, the task of organizing the research is challenging. According to one of the classic perspectives (e.g., Allport

¹The person-situation debate surrounds the extent to which behavior is determined by characteristics of the individual versus characteristics of the situation (Kenrick & Funder 1988).

1937), personality research has several jobs to do, including (a) identifying the units of analysis of personality psychology, (b) describing how the components of personality develop and change, (c) excavating the mechanistic underpinnings of personality, and (d) using that information to understand not only populations but also individuals. We organize our review along these four broad tasks. In each section, we review and synthesize recent personality research. We end with a discussion of basic research issues, including future directions, and the institutional challenges faced by the field.

WHAT ARE THE UNITS OF ANALYSIS IN PERSONALITY SCIENCE?

One of the primary goals of personality psychology is to describe the panoply of individual differences that characterize people. Historically, personality psychology has had a penchant for increasing the number of constructs in its repertoire rather than decreasing or integrating them. There is also a common tendency to equate personality to the study of personality traits. Of course, personality traits are not everything, nor do they adequately capture the units of analysis commonly included under the broad umbrella of personality psychology. Looking across some of the salient models of personality, such as the neo-socioanalytic model (Roberts & Nickel 2020), the Five Factor Model (FFM; McCrae & Costa 2008), the alternative Big Five (McAdams & Pals 2006), or the cybernetic Big Five (DeYoung 2015), one can identify at least four distinct domains or units of analysis: personality traits, motives, skills/abilities, and narrative identity.

Personality Traits

The first domain, personality traits, has been transformed the most over the last few decades because of the adoption of the Big Five taxonomy (Goldberg 1993). The Big Five taxonomy organizes traits into the five broad domains of extraversion (assertive and gregarious versus introverted), agreeableness (warm and kind versus cruel), conscientiousness (industrious and responsible versus undependable), emotional stability (calm and serene versus anxious), and openness to experience (intellectual and creative versus closed-minded). The fact that the Big Five are a broad and inclusive taxonomy is an important feature that can be forgotten in the rush to quickly assess personality traits. That is to say, the Big Five are not discrete, independent dimensions but are more akin to a raucous family of partially overlapping and increasingly complex groups of facets (Condon & Mroczek 2016).

The impact of the Big Five on the field of personality psychology cannot be underestimated. First, it has forced the field to be more disciplined in asking whether a newly described trait is really new or not. The most salient recent example of this is the notion of grit (Duckworth et al. 2007), which was considered to be somewhat novel and unique when first introduced. Recently, research has clarified that grit is so strongly linked to conscientiousness that it should be considered a facet of that trait domain rather than something new (Credé et al. 2017).

Second, the structure of the Big Five has helped to organize findings in a way that has moved the field forward. For example, the understanding that personality traits do predict important life outcomes would not have been possible if not for the organizing structure of the Big Five (Roberts et al. 2007, Soto 2019). Substantive relationships were only revealed once the originally unorganized range of measures was organized within the Big Five taxonomy. Finally, this framework has made the building of connections with other fields, such as clinical psychology, much more effective. For example, the content overlap of the Big Five and the new dimensional nosology of personality disorders found in the Personal Inventory for DSM-5 (PID-5) and the Hierarchical Taxonomy of Psychopathology (HiTOP) is strikingly high (Krueger & Markon 2014).

This is not to say that work has stopped on the structure of personality traits or that there is consensus that the Big Five are necessary and sufficient (Mõttus et al. 2020). There remains a strong case for adding at least one more dimension to the Big Five, with several lines of research pointing to the importance of an honesty factor (Ashton & Lee 2020, Thalmayer & Saucier 2014). The honesty factor tends to show up more regularly and reliably in countries other than the United States, which for various reasons has contributed a disproportionate amount of data on the structure of personality. Also, the validity of the honesty domain is distinct and incrementally useful above and beyond that of the remaining Big Five (Zettler et al. 2020). There are also efforts to introduce other traits, such as those found in the Dark Triad (narcissism, psychopathy, and Machiavellianism), though the distinctiveness of these three traits from those included in the Big Six is less clear at the moment (Jonason et al. 2013).

Motivation

The second domain of personality, motivation, focuses on what people desire, either consciously or unconsciously. The domain of motivation is less well organized than the personality traits domain largely because it lacks a consensual taxonomy or, for that matter, an accepted mode of assessment. The notion of motivation covers a wider range of phenomena compared to that of personality traits, including achievement motivations (Elliot & Harackiewicz 1996), life goals (Kasser 2016), power motivations (Schultheiss et al. 2005), life values (Schwartz 1994), and vocational interests, such as realistic and enterprising interests (Nye et al. 2012). The modalities of assessment in motivation research range from classic projective techniques such as the Thematic Apperception Test to self-reported vocational interests to idiographic cataloguing of everyday aspirations. The number of core domains of motives identified by conceptual and empirical attempts has ranged from three (predictability, acceptance, and competence; Dweck 2017) to four (prominence, inclusiveness, negativity prevention, and tradition; Wilkowski et al. 2020) to seven (physiological, self-protection, affiliation, status, mate acquisition, mate retention, and parenting; Cook et al. 2021). Clearly, the diversity of organizational systems makes it a challenge to achieve the clarity brought about by the Big Five taxonomy with regard to personality traits.

Skills/Abilities

The third domain of personality, which we refer to as the skills domain, has traditionally been dominated by research on cognitive skills or, more aptly, cognitive abilities (Ritchie et al. 2015). Research on cognitive abilities has continued somewhat unabated through time, and it has been largely carved off from personality psychology and housed in societies, such as the International Society for the Study of Individual Differences (ISSID), that focus their energies on the study of intelligence over other types of constructs (Revelle et al. 2011). Nonetheless, if one of the goals of personality psychology is to capture individual differences, broadly construed, it would be odd to omit skills, cognitive or otherwise. The most notable findings on cognitive abilities appear timeless. The three perennial issues that have dominated research on cognitive functioning are (a) whether its putative effects are attributable to background factors like socioeconomic status, (b) its relative importance for predicting various outcomes, and (c) whether and to what extent it causes bias against specific groups when used in selection systems. The empirical answers, which also appear timeless, are that cognitive ability and background factors, though related, are independent in their effects (Kuncel & Hezlett 2010). That is to say, cognitive ability is not wholly imparted by family socioeconomic status and is not simply an indicator of how affluent one's family may have been. Cognitive ability also predicts many outcomes that persons and societies care about, such as occupational success and physical health (Kuncel et al. 2004). Finally, though cognitive ability does not impart bias in the technical, psychometric sense,² it most certainly leads to adverse impact when used for selection (Newman & Lyon 2009).

Probably the most notable development in the skills domain is the explosion of activity around noncognitive skills. The term "noncognitive" was generated by economists (Heckman et al. 2013) and is uniformly despised by personality psychologists. The emergent focus on noncognitive skills also reflects a renewed interest in educational science on intra- and interpersonal factors contributing to school performance, described as socioemotional skills, that are not the types of informational or fact-based materials (e.g., math, writing) that have been the traditional focus of educational policy (Natl. Res. Counc. 2012).

There is currently no consensus taxonomy that organizes the constructs associated with socioemotional skills (Abrahams et al. 2019, Duckworth & Yeager 2015). Socioemotional skills have suffered from some of the definitional challenges encountered by other domains, like motivation. Recently, we attempted to draw a clear distinction between personality traits and the social and emotional skills dominating the discussion of noncognitive skills (Soto et al. 2021). Personality traits are typically defined as characteristic, and automatic, patterns of thinking, feeling, and behaving that are consistent over time and across relevant situations (Roberts 2009). They therefore represent cognitive, affective, and behavioral tendencies: what a particular person tends to do, averaged across situations (Fleeson & Jayawickreme 2015). In contrast, skills are capacities: what a person is capable of doing when the situation calls for it. Rather than reflecting a person's default pattern of behavior, social and emotional skills represent the tools available in their psychological toolbox, which they can selectively bring out or put away as needed. For example, a student who is usually shy and introverted (reflecting their traits) can act as a leader when needed (reflecting their skills).

We believe the distinction between traits and skills is an important one, especially for interventions designed to impart skills. There is an emerging move to investigate whether personality traits can be changed (Roberts et al. 2017), which is somewhat askew of the goals of most education and socialization efforts. The latter tend to focus on imparting skills. Training children to have the capacity for self-control (the skill) is a much different enterprise than training children to be self-controlled (the trait). The former respects the autonomy of the child, whereas the latter strikes many as being authoritarian.

Narrative Identity

The last major domain of personality is loosely referred to as narrative identity. The narrative content of a life reflects the experiences of the individual in their immediate environments, their relationships, their community, and their society. Unlike the other content domains of personality, narrative identity is much more concrete, time bound, qualitative, and grounded in individual experience. The content of narrative identity reflects the particularities of the person's experiences and their propensity to integrate those experiences into their personality and/or identity (McAdams 2013). These are the stories of a person's life, with particular characters and actions that reflect the actual lived life rather than some extrapolation from that experience as is common in assessments of personality traits and motivations.

Historically, the actual content of people's lives has been the focus of some personality psychologists, in the form of either psychobiographies or life stories (McAdams 2020); however, a more common approach to understanding narrative identity is to code features of the stories people tell

²That is to say, cognitive ability tends to predict similar outcomes for different groups.

about their lives, such as their emotional tone (Sengsavang et al. 2018), meaning (Pals 2006), and motivational content (Adler 2012). Across these efforts, three broad domains of narrative identity variables have been identified: motivational and affective, autobiographical reasoning (e.g., meaning), and structural (Adler et al. 2016, McLean et al. 2019). Researchers interested in employing narrative techniques are encouraged to review the recent primer on this methodology provided by Adler et al. (2017).

One of the long-standing issues faced by narrative researchers has been the question of utility. What does narrative or autobiographical information add beyond what other dimensions of personality already provide? Relatedly, a dominant theme in the field of narrative identity has been demonstrating that narrative dimensions add incremental validity to traits and motives when predicting outcomes like personality development and well-being (Lodi-Smith et al. 2009). For example, narrative content can be used to predict trajectories of mental health in patients seeking therapy (Adler et al. 2015). A recent meta-analysis concludes that despite the skepticism with which it is often met, the narrative dimension can and does provide incremental information for the prediction of important outcomes like well-being above and beyond the Big Five (Adler et al. 2016).

At a minimum, then, personality psychology answers the "what" question with the idea that at least four construct domains are needed to adequately capture the content of personality psychology: traits, motives, skills/abilities, and narrative identity. We could, of course, expand this list to include other individual difference domains (e.g., meta-perceptions, physical skills, or identity), but these four seem to be a good compromise between parsimony and inclusiveness.

ATTEMPTS AT INTEGRATING UNITS OF ANALYSIS

Although work on the domain of personality traits has benefited from an organizing taxonomy, it is fair to say that across traits, motives, skills/abilities, and narratives, the number and types of dimensions studied have grown without an overarching organizational structure for the entire field. The field is vibrant but unintegrated. There have been several attempts at creating overarching models to bring order to the panoply of constructs in personality psychology, but all have gone wanting for various reasons. Notably, the FFM³ (McCrae & Costa 2008) proposed that personality traits are immutable causes of all other types of constructs, including motives and narratives. According to this model, motives and narratives are more context bound and therefore less basic to the individual than personality traits, and they are referred to as "characteristic adaptations." The more recent BEATs model (where the acronym stands for beliefs, emotion, and action tendencies; Dweck 2017) reversed this ordering, placing goals at the core of personality dimensions and proposing that they are the causes of personality traits, which emerge from the interaction of goals with situations. In contrast to these models, both McAdams (McAdams & Pals 2006) and Roberts (Roberts & Wood 2006) acknowledged that these domains are distinct. McAdams argued that traits, motives, and narratives are manifest at different levels of analysis, with the latter two domains being more granular and context-specific than personality traits. Roberts went on to argue that personality should also include skills as an area of inquiry and that all of the units of analysis can be conceptualized from broad to narrow, with no real reason to prefer a level of analysis over another. For example, motives can be broad (e.g., universal harmony) or narrow (e.g., be nicer to one's students), just as traits can be broad (e.g., extraversion) or narrow (e.g., propensity to crack jokes during formal meetings).

³The FFM and the Big Five taxonomy are not interchangeable. The FFM is an attempt at creating a complete catalog of human variation, whereas the Big Five taxonomy is an organizational structure for trait terms.

None of these models of personality (or any other) currently dominates the field. In retrospect, there are both empirical and conceptual issues that inhibited their adoption. On the empirical front, the modal magnitude of the correlations between the domains identified above remains too low to assume, for example, that either traits cause goals or goals cause traits (as the average correlation coefficient, r, is equal to 0.11; Roberts & Robins 2000). Moreover, variables from these domains tend to predict outcomes independently of one another (Stoll et al. 2017). Therefore, the models that propose a strong hierarchical relation between these domains are challenged by the fact that the relations are small and the putative causal effects of the domains are independent.

The argument that these domains represent different levels of analysis, although it is historically an accurate description of the modal research in these domains, ignores the fact that all of these domains can be operationalized along a dimension that goes from broad to narrow (Hooker & McAdams 2003, Roberts 2007). Narratives can be conceptualized at the levels of society and culture (McLean et al. 2019). Goals can be operationalized as daily concerns or broad values (Schwartz 1994) and interests (Su et al. 2019). Skills can be conceptualized as overall competence or can be differentiated into more and more molecular manifestations that are increasingly specific to situations and contexts (Wirth et al. 2020). Thus, every domain of personality can be conceptualized and measured at multiple levels of breadth. The fact that the field at various times in history has preferred broad (e.g., values) or narrow (e.g., strivings) conceptualizations does not mean that any one level should be preferred or prioritized.

A final reason that these models may have failed to capture the imaginations of researchers is their descriptive nature. By staying close to the data, these models tend to be overly inclusive and therefore complex. The complexity of the models does not lend itself to informing hypotheses to test in subsequent research. Also, in contrast to the grand theories of personality of the past, none of these theories provides answers to more ultimate questions such as what factors motivate human behavior. In a nutshell, these theories have failed to answer simple questions like, why do we find the Big Five, or what are the core motivations that guide most human behavior?

At this juncture, we can identify at least four domains of inquiry for answering the "what" question of personality psychology (i.e., traits, motives, skills, and narratives), each providing fodder for an explosion of new research. We have yet to find an organizing model that satisfactorily explains why to choose these four domains, what other domains might be added, and how to organize them.

PERSONALITY DEVELOPMENT

Personality development is the subarea of personality psychology that has very much led the renaissance in personality science. Broadly speaking, research on continuity, change, and factors associated with change in personality has increased exponentially in the last two decades. This was the result of fortuitous timing. Just as personality psychology was becoming more widely accepted, technology and science policy, especially in Europe and Oceania, were converging to create numerous, publicly available longitudinal data sets. The resulting explosion of research has rendered what once was novel—a report on the longitudinal continuity and change in personality—somewhat mundane. Fortunately, it has also resulted in a much better empirical foundation to draw initial inferences about personality development.

Of course, one reason for the emphasis on longitudinal studies in personality psychology is that consistency is definitional to the field (Fraley & Roberts 2005). The most frequently given definitions of personality or personality traits all include consistency as a defining feature. Thus, the motivation to examine longitudinal patterns of continuity and change in personality is high.

Given their primacy, longitudinal studies of personality traits abound and have been successfully summarized in numerous meta-analytic reports (e.g., Anusic & Schimmack 2016,

Ardelt 2000, Bazana & Stelmack 2004, Ferguson 2010, Roberts & DelVecchio 2000, Roberts et al. 2006b, Schuerger et al. 1989). Based on these reviews, we now know that personality traits demonstrate moderate to high rank-order consistency (i.e., correlations between 0.40 and 0.60) over reasonably long periods of time (i.e., 4 to 10 years), and that the longer one tracks rank-order consistency, the lower consistency gets (e.g., Damian & Roberts 2015), but consistency seems to plateau above zero (Fraley & Roberts 2005). Personality traits increase in rank-order consistency with age, peaking sometime after age 25, with some evidence for decreases in very old age (Lucas & Donnellan 2011). In addition, rank-order consistency does not vary markedly across the Big Five traits, the assessment method (i.e., self-reports, observer ratings, and projective tests), or gender.

Research on the consistency of motives, skills, and narratives has been less systematic, but nonetheless it has produced dozens of studies. To the extent that vocational interests are exemplary constructs in the motivation domain, we know that they are actually more consistent than personality traits at a younger age (Low et al. 2005) and show similarly high levels of consistency over decades (Nye et al. 2020, Schultz et al. 2017). Though less often studied, other motivational constructs, such as major life goals (Atherton et al. 2021) and values (Dobewall & Aavik 2016, Vecchione et al. 2016), are as consistent as personality traits over comparable time intervals. Skills, at least in terms of the traditional measures of cognitive ability, appear to be more consistent than any other domain in personality (Deary et al. 2004, Tucker-Drob & Briley 2014), with estimates of consistency exceeding 0.80 for samples older than 20 years of age. Admittedly, and oddly, there has yet to be a systematic review of the consistency of the skill domain. Finally, the narrative domain, despite being cast as qualitatively less stable than, for example, personality traits, has shown varied levels of consistency. In some cases, the consistency demonstrated by narrative dimensions was indistinguishable from that of personality traits (McAdams et al. 2006), whereas in other cases the levels of continuity were much lower (Dunlop et al. 2016).

Given the definitional role consistency plays in the field of personality, these results provide unequivocal evidence that we find enough continuity across all ways of conceptualizing personality to support the core definitional assumption of the field. Some may mistakenly point to variability across moment-to-moment situations as challenging to the idea of personality, but this was never an assumption of personality psychology. No personality psychologist ever claimed that personality is defined by absolute cross-situational stability—for example, that extraverted people would talk the same amount at a bar or at a funeral. And, when examined both in the short and in the long run, researchers find, of course, that we shift our behavior from moment to moment but retain over time a strong, rank-order consistency in our behavior (Fleeson 2001). Empirically, the levels of continuity in personality constructs are high enough to warrant the conclusion that personality exists and persists.

Understanding personality development entails more than determining whether constructs are consistent. It also entails focusing on other types of continuity and change, including whether there are normative gains or losses with age (Roberts et al. 2008). The prevailing perspective on personality traits is that childhood and adolescence hold little significance for systematic gains and losses, whereas the transition to young adulthood is the crucible of personality trait change (e.g., Borghuis et al. 2017, Göllner et al. 2017, Mroczek & Spiro 2003, Roberts et al. 2006b). Meta-analytic estimates of longitudinal mean-level changes across the life course show significant change in all trait domains in young adulthood (Roberts et al. 2006). Social dominance (a subdomain of extraversion), agreeableness, conscientiousness, and emotional stability show steady increases through midlife. More recent cross-sectional (Lucas & Donnellan 2011) and longitudinal (Damian & Roberts 2015, Oltmanns et al. 2020, Vecchione et al. 2012) work has replicated this general pattern.

Not only do mean-level changes in abilities, motives, and narratives exist, but the fact that they develop differently than personality traits also highlights the fact that these domains are distinct.

It is known that cognitive abilities track a different path developmentally than personality traits. Fluid abilities tend to peak early in the life course and decline thereafter, whereas crystalized abilities tend to peak in midlife and then drop off (Schaie & Strother 1968). We know far less about longitudinal changes in social and emotional skills. Measures of motivation, when assessed as the importance or salience of a goal, show a very consistent pattern of no mean-level change or decrease across the life course (Atherton et al. 2021, Stoll et al. 2021). When measured as interests, motivation shows a more complex picture, possibly as a result of the smaller number of long-term studies in adulthood. Those that do exist show heterogeneous patterns, with some interest domains, like realistic and investigative interests, showing declines in young adulthood and increases later in life (Hoff et al. 2018). One of the few longitudinal studies of values found values such as universalism and conformity to be increasing in young adulthood and plateauing thereafter (Schultz et al. 2017).

Less is known about changes in narrative constructs, but there are some aging and longitudinal studies. It is assumed that personal narratives emerge in adolescence (Bohn & Berntsen 2013, Habermas & de Silveira 2008) and become more coherent with age. Consistent with that position, an aging study of narrative content found that narrative coherence increased with age, especially from adolescence to young adulthood (Köber et al. 2015). Redemptive content in narratives appeared to increase during college but to remain unchanging in midlife (Dunlop et al. 2016).

Of course, not everyone changes in the same direction or to the same degree; some people change less or more than their peers (e.g., De Fruyt et al. 2006). Moreover, some people show stability, as defined by long-term trajectories that are flat (or near flat) in functional form (Mroczek et al. 2021). Thus, a third way of examining personality development is to investigate individual differences in change (Mroczek 2014, Roberts & Mroczek 2008). There is robust evidence for the existence of individual-level change across the life course, even into old age (Graham et al. 2020, Schwaba & Bleidorn 2018).

One reason to focus on individual differences in personality change is that such an approach raises a most interesting question: Do life experiences cause people to develop in idiosyncratic ways? Most of the research on the relation between life experiences and individual differences in change focuses on experiences in relationships, work, and health. For example, achievement and work-related experiences have been linked to changes in personality traits across the life course. Children who increase their effort on homework show commensurate increases in conscientiousness (Göllner et al. 2017). Achieving more at work through attaining higher status is associated with increases in the social dominance facet of extraversion and sometimes in conscientiousness-related traits (Le et al. 2014, Roberts et al. 2003). Being more invested and committed to one's work is associated with increases in conscientiousness (Hudson et al. 2012). People who are called upon to be leaders at work increase more in extraversion (Wille et al. 2012). In addition, positive experiences at work are reliably associated with increases in emotional stability (Le et al. 2014, Scollon & Diener 2006, van Aken et al. 2006).

Marital and family experiences, too, are associated with changes in personality traits. For example, forming serious partnerships is associated with decreases in neuroticism and increases in conscientiousness and self-esteem (Lehnart et al. 2010). Similarly, men who get married or remarried in late middle age and old age tend to decrease in neuroticism over time (Mroczek & Spiro 2003). Genetically informed research supports the argument that marriage is a cause of personality trait change (Burt et al. 2010). Holding genetic confounds constant, getting married purportedly causes decreases in antisocial behavior, which is strongly associated with the domains of agreeableness and conscientiousness (Hopwood & Bleidorn 2018).

Other relationship experiences are also associated with personality trait change. Individuals who experience satisfying and fulfilling relationships become more emotionally stable and

conscientious (Lehnart & Neyer 2006, Robins et al. 2002, Scollon & Diener 2006). Negative relationship experiences, such as difficulties in one's sex life, are associated with increased neuroticism (Lüdtke et al. 2011). Receiving more support from family members during adolescence is associated with increases in agreeableness (Branje et al. 2004).

Negative life experiences in general, whether in aggregate or in particular, are also associated with increases in neuroticism (Laceulle et al. 2012, Lüdtke et al. 2011). Clinical issues are also associated with personality trait change or the lack of normative personality trait change. For example, continuing or increasing substance use and abuse are associated with failure to increase in conscientiousness and with decrease in emotional stability (Lee et al. 2015). Similarly, changes in mental health and depression are associated with decreases in most of the Big Five traits, emotional stability in particular (Chow & Roberts 2014). Clearly, when people have negative experiences, especially ones that play out over time, personality changes.

On a more positive note, travel abroad is associated with positive personality trait change. In one study, Germans who traveled to another country were more likely to increase in agreeableness and openness and decrease in neuroticism (Lüdtke et al. 2011). A second study of German sojourners (students who studied abroad) found strikingly similar results. Sojourners grew more agreeable and open, and less neurotic, the longer they stayed abroad (Zimmermann & Neyer 2013). These findings point to proactive measures people and institutions can take to foster positive developmental trends in students.

Whereas a disproportionate amount of research has focused on individual differences in trait change, a growing number of studies have focused on motives, skills, and narratives. They found, for example, that individuals who achieved life tasks related to relationships and work decreased more on goals related to family and work (Salmela-Aro et al. 2007). Greater fit between one's work environment and one's interest profile predicted changes in the corresponding interests (Nye et al. 2020), whereas losing one's job was associated with increases in enterprising interests (Schultz et al. 2017). The transition to parenthood was associated with changes in goals, in contrast with the findings of research on personality traits that showed little or no changes associated with becoming a parent (van Scheppingen et al. 2016). In particular, new mothers increased their goals related to family and health and decreased their achievement-related aspirations (Salmela-Aro et al. 2000). Going through cancer treatment was differentially related to changes in life goals, such that cancer patients decreased on achievement and leisure aspirations but remained unchanged on their health-related goals (Pinquart et al. 2007). Of course, changes in goals are also associated with changes in personality traits (Hudson et al. 2020). In particular, changes in economic goals were positively related to changes in extraversion, and changes in family goals were associated with changes in agreeableness (Atherton et al. 2021).

There has been less work on changes in cognitive ability and other skills, but there is evidence that experience does relate to individual differences in change in these domains, too. For example, a recent meta-analysis showed that participating in higher education was associated with increases in cognitive ability (Ritchie & Tucker-Drob 2018). Of course, because of the importance of declines in cognitive functioning in old age, much research has focused on factors that mitigate these normative losses. For example, maintaining better physical functioning in old age is associated with less cognitive decline (Tabbarah et al. 2002). Also, in old age, decline in physical functioning, especially in areas like visual and auditory functioning, is related to faster declines in cognitive functioning (Valentijn et al. 2005). Similarly, susceptibility to mental health issues, such as schizophrenia, is associated with faster declines in cognitive ability with age (McIntosh et al. 2013).

In addition to the increased number of longitudinal studies of personality traits, motives, and skills, there is now a good number of longitudinal studies examining individual differences in

narrative content over time. An examination of the factors associated with changes in redemptive and contamination themes over time found that changes in employment status were associated with decreases in redemptive content in narratives (Dunlop et al. 2016). In contrast, Köber et al. (2015) found that narrative coherence increased with age, but they failed to find anything that could help explain the increase in coherence. They found no relation between changes in narrative coherence and negative life experiences, confiding in others, or even an intervention intended to increase coherent thinking. Although studies examining individual differences in narrative change are less common, the few available to date seem to indicate that this aspect of personality is similar to traits, motives, and skills.

In sum, personality—be it conceptualized as traits, motives, skills, or narratives—is a developmental phenomenon. People show profound levels of continuity that are high enough to support the definitional nature of personality, but they also show maturational changes in all domains as well as individual differences in their personal trajectories and changes in response to life experiences. The combination of continuity and change can be confusing to some, given that the field has been dominated by theoretical models that pit one against the other. However, the clear message emerging from the voluminous longitudinal empirical database is that personality is consistent, changing, apparently responsive to experience, and a profoundly important foundation for understanding human nature. People are not rudderless ships battered by the winds of experience, nor are they cement jetties moving nowhere despite the ocean and the wind. Given the longstanding dominance of the two extremes represented by situationist and essentialist positions in all of psychology, one of the most important contributions of the last few decades of personality research is the longitudinal record showing that human nature occupies neither extreme.

PERSONALITY PROCESS

The question of process is a question about why and how: Why and how does someone who is conscientious live longer than those who are less conscientious? Why and how do people who are less neurotic have more stable and satisfying relationships? Why and how do those who are power motivated end up in leadership positions more often than others? And how do we leverage this sort of information to turn the gears of human nature toward productive ends?

The consideration of process goes to the core of the question of how some concept or construct of human nature actually affects a person's life and is therefore unambiguously an issue of causality. Of course, causality has been a challenging issue for personality psychology for two controversial reasons that appear to have been reconciled in the last two decades. First, for something to be considered causal, it has to be associated with outcomes that we care about at a magnitude that matters. Historically, personality psychology was criticized because of empirical findings that were mistakenly thought to be of smaller magnitude than in most other areas of psychology (Mischel 1968). The shared ethos was that personality traits and personality writ large lacked the levels of predictive validity that would make them matter.⁴

The perspective that personality was not an important predictor of important outcomes began to change because of industrial psychology, which concluded in the 1990s that personality traits

 $^{^4}$ Students of history will know that the personality correlation coefficient, r, was 0.30. The argument that this coefficient was low resulted from the fact that personality psychologists habitually reported effect sizes, whereas many other areas of psychology, especially in the 1960s, failed to report effect sizes at all. Personality psychology committed the sin of being too transparent. It is also the case that once the effects of these other areas were translated into the r metric, we found that most areas of psychology find coefficients lower than 0.30.

did matter for outcomes like job performance (Barrick & Mount 1991) and job satisfaction (Judge et al. 2002). What followed were a series of studies, reviews, and meta-analyses that rendered a very clear picture. Personality traits and other personality constructs predict many important life outcomes, such as work success, relationship outcomes, well-being, mental health, and physical health (Caspi et al. 2005, Ozer & Benet-Martinez 2006), and they often do so at levels equal to gold standard predictors such as cognitive ability and socioeconomic status (Roberts et al. 2007). Moreover, those predictive patterns tend to replicate at a far higher rate than many other findings in the psychological literature (Soto 2019).

The second condition for something to be considered mechanistic is that it can be manipulated or changed. Although it is still widely thought that personality is not changeable, recent research has roundly contradicted that notion. In a review of over 200 intervention studies, personality traits, and especially neuroticism, were found to be modifiable through clinical intervention, with the changes being on average half of a standard deviation over periods as short as 6 weeks (Roberts et al. 2017b). Moreover, changes that resulted from therapy not only happened quickly but also remained in place well after the patients left therapy. Subsequent research has shown that the other trait domains can also be changed through intervention even if the population or intervention is not clinical in nature (Stieger et al. 2021).

So, surprisingly, we are in a moment in which understanding how traits affect the day-to-day processes and accomplishments of life not only is warranted but also holds much more causal import than ever. There have been two dominant approaches to thinking about how personality acts mechanistically. The first is to assume that traits, being broad, cause narrower thoughts, feelings, and behaviors, and that these thoughts, feelings, and behaviors mediate the relation between a trait, motive, or skill and some outcome of interest (Baumert et al. 2017). The second approach relies on longitudinal methods whereby the process plays out over time (Wrzus & Roberts 2017). As the sheer amount of research that falls under these umbrellas is so large, we provide a few recent examples of this mechanistically focused research on relationships, achievement, well-being, and health.

With regard to relationships, questions of process have centered on personality features like social anxiety, extraversion, attachment, and relationship motives. These qualities appear to shape relationship outcomes right from the first encounter. For example, people who are more socially anxious tend to be less accurate about how they are perceived, which in turn contributes to being less liked at first encounter (Tissera et al. 2020). Specifically, people high in neuroticism tend to elevate their relationship partners, perceiving them as more positive than they are (Hannuschke et al. 2020). And, of course, these processes play out over time, with neuroticism being related to lower relationship satisfaction across different relationships (Robins et al. 2002) and thus to outcomes such as elevated rates of divorce (Solomon & Jackson 2014).

Motivation also plays an important role in influencing satisfaction with romantic partners. Research on approach and avoidance motivation (i.e., the tendencies to move toward rewards and away from punishments; Elliot & Church 1997) has shown that individuals high in approach motivation are more likely to be satisfied with their relationships, whereas individuals high in avoidance motivation are less satisfied with their relationships (Impett et al. 2010). High approach motivation is associated with more involvement in positive behaviors and events, such as special events, that could induce positive emotion and relationship outcomes. Avoidance motivation is problematic because it contributes to overreaction to negative events, which leads to lowered well-being (Elliot et al. 2006, Gable & Impett 2012). Relationship orientation is another motivational factor that positively predicts relationship satisfaction, because individuals high in relationship orientation tend to engage in behaviors that promote the persistence and health of the relationship (Hofmann et al. 2015).

Analogous research has focused on achievement and on how self-regulation affects outcomes like school and work performance. Self-regulatory factors like conscientiousness are now widely accepted as predictors of school grades (Noftle & Robins 2007, Poropat 2009). Process-oriented research has shown that this arises because of classroom behaviors. More conscientious students set more effective achievement goals and use more tenacious study habits, among other behaviors, which lead to better grades (Corker et al. 2012). Similarly, in the workplace, research has shown that personality traits, such as conscientiousness, indirectly predict work performance by influencing more proximal antecedents, such as motivational factors (Campbell & Wiernik 2015, Van Iddekinge et al. 2009).

Research does not always support the assumption that narrow behaviors are the mechanism through which broader constructs affect achievement. For example, self-regulation behaviors manifest in the moment tend to be unassociated with positive outcomes like goal attainment (Milyavskaya & Inzlicht 2017), in contrast with the uniformly positive outcomes associated with trait-level measures of self-control (Inzlicht et al. 2021). Moreover, self-control processes do not seem to account for some of the positive effects of global self-control (Hennecke et al. 2019). These discrepant findings beg the question of whether simpler, narrower versions of a global trait are measuring the same construct as the broad trait measure or whether the processes that explain the outcomes at different levels of analysis may be distinct.

Another common process question is why certain personality dimensions are predictive of well-being and mental health. It has been known for quite some time that people who are extraverted also report being happier (Costa & McCrae 1980). The process question in this regard is whether this correlation is an artifact that results from common method variance or is due to what extraverted people do. Follow-up research shows that extraversion leads to greater amounts of social interaction (Breil et al. 2019), which in turn contribute to greater well-being (Sun et al. 2019). Of course, there are numerous other potential mechanisms at play, such as social cognitive factors like reward sensitivity (Blain et al. 2019) or the way people perceive situations (Horstmann et al. 2021).

Similar process questions have become the focus of research linking personality to health outcomes, including mortality. Personality is now a widely accepted aspect of many different health models in which factors like personality traits are considered to be distal causes of more proximal process variables, such as health behaviors (Segerstrom 2019). Linkages to health behaviors are now common (Turiano et al. 2012), and cumulative findings show that emotional stability and conscientiousness are the primary personality traits contributing to better physical health. In terms of mechanistic research, the majority of efforts to date have tested mediators such as health behaviors that are key elements of most health behavior models. For example, smoking behavior mediates the association between neuroticism and mortality (Mroczek et al. 2009), and better cognitive functioning in old age mediates the relation between conscientiousness and mortality (Hill et al. 2011). Interestingly, as was the case for research on self-regulation, the typical mediating factors turn out to be not as explanatory as expected when attempting to understand the relation between factors like conscientiousness and morbidity or mortality (Segerstrom 2019). For example, even when controlling for multiple factors like cardiovascular disease and health behaviors, conscientiousness retains a direct link to Alzheimer's disease (Wilson et al. 2007).

Of course, the ultimate mechanistic inferences arise when change in personality is linked to subsequent outcomes. A few examples of these studies come from clinical psychology and economics. In clinical psychology, for example, studies have shown that changes in emotional stability predict clinical outcomes such as better treatment progress (Nguyen et al. 2020) or decreased probability of relapse (Tang et al. 2009) better than changes in depression do. Large-scale randomized controlled trials in economics have shown that interventions have long-lasting effects on personality dimensions (e.g., Kosse et al. 2020) and that these changes predict long-term

outcomes such as improved economic standing (Heckman et al. 2013). These applied studies provide the strongest evidence to date that personality traits can be true mechanisms for improving the lives of individuals.

In sum, mechanistic research on personality has accelerated along with an increased appreciation for the facts that personality predicts important outcomes and that it can be changed. Although changing personality traits or other personality characteristics may be more challenging than changing narrow thoughts, feelings, and behaviors in lab experiments, it does have one distinct advantage. We already know that personality is related to important outcomes; therefore, changing personality could result in benefits for individuals. Though slow to come and slow in execution, the move to a mechanistic understanding of personality is a sign of the increasing relevance and importance of personality in public policy circles (e.g., Bleidorn et al. 2020).

UNDERSTANDING INDIVIDUALS

The ultimate task of personality psychology is to help us understand ourselves and others at an individual level. Since the originating writings of personality psychology by Allport (1937) and Murray (1938), personality psychologists have practiced the art of interpreting the personalities of individuals through the lenses of their preferred theoretical systems. The practice, codified with the term "personology" (Barresi & Juckes 1997), has typically served as a medium through which personality psychology has helped the world understand influential people in society. Early efforts, like many in psychology, were trained upon people like Adolf Hitler (Adorno et al. 1950) in an attempt to better understand who these leaders were and why they could perpetrate atrocities so effectively. The interpretation of these lives was taken up by many different psychologists reflecting the classic theoretical schools of personality psychology, including Freudian, Jungian, trait, and interpersonal psychology and more. Moreover, these interpretations were not limited to the most famous people, as authors took it upon themselves to interpret the lives and personalities of other characters in history (e.g., Allport 1965).

Although the practice of doing psychobiographies has never been a mainstream activity in personality psychology, it has continued at a steady pace over the decades until this day. In the most prominent recent examples of this practice, McAdams (2010, 2020) conducted personological analyses of two recent US presidents, George W. Bush and Donald Trump. These analyses are illuminating for many reasons, but foremost for highlighting the point made above that personality psychology needs to include multiple domains in order to be a comprehensive science of human nature and provide a coherent understanding of an individual.

Using the multiple domains of personality is exemplified nicely in McAdams's (2010) analysis of George W. Bush. As a youngster, Bush was gregarious and fun loving, with a remarkable skill for remembering people's names, making disarming jokes, and making people feel welcomed and accepted. When combined with his incuriousness (i.e., low openness), this could lead one to mistake him for a person with little leadership capacity. However, the intersection of his high extraversion and low openness, and his redemptive narrative of overcoming alcoholism, rendered Bush prepared to take action and be decisive in times of crisis, according to McAdams. With the events of 9/11 occurring during his first year as president, he did everything that was needed to take control and assert his vision on the United States and the world in the aftermath of the tragedy. His actions are best understood based on his personality traits, his motives, and his life story and on how they all combined to forge the actions he took as president.

With Trump, McAdams (2020) obviously focuses, in part, on narcissism. There appears to be strong consensus that Trump was a lodestar for narcissism (Lilienfeld et al. 2018). Preoccupation with power and success? Check. Believing to be unique? Check. Need for excessive admiration? Check. Go through the standard criteria for narcissism and Trump checks them all.

McAdams (2020) reminds us that this is a syndrome because it is not reducible to a simple trait profile. Narcissists do score high on extraversion and low on agreeableness (Paulhus & Williams 2002), but that is insufficient to classify someone as narcissistic. This trait profile has to be combined with an unyielding motivation to be the center of attention and to consistently promote the self over others. One could be outgoing and unkind but be entirely focused on other people, for example. Without the motive to focus on the self, personality traits are an insufficient explanation for why someone might be narcissistic, including President Trump.

McAdams also points out that Trump is more complex than even the compilation of attributes associated with narcissism. From a narrative perspective, Trump was an empty vessel according to McAdams, possessing no clear narrative on which to find purchase. There was no linear story about Trump's experiences, the lessons learned, the insights gained by overcoming failure. Rather, Trump was the "episodic man," combining his insatiable narcissism with a seemingly continuous search for a battle he could win. Trump would even create battles when there were none to be found. And, each day, Trump did his best to win or be perceived as winning to then proclaim his excellence and his achievements, even if fictitious. The imperative for Trump was himself and whether at any moment he was garnering the respect and adoration he believed he deserved for being great. The continuous self-focus combined with the lack of historical narrative meant that Trump did not accumulate experience and use it like most people do; rather, he focused day-to-day on whether the spotlight was on him and whether the image revealed was a good one by his definition.

Of course, the nature of Trump's personality may be less important than how he wielded his personality during his tenure as president. Trump showed what some might describe as the power of personality during his four years as the US leader. Most pundits predicted that Trump's propensity for grandiosity, mendacity, and love of attention would be moderated by the demands that come with being president. Quite to the contrary, Trump appeared to yield no ground to the role of president. Instead, he bent the role, the institution, and the people around him to his will. If these people did not conform to his desires, they were simply jettisoned and demeaned. If a part of the institution did not fulfill his unquenchable thirst for validation, it was ignored. Trump entered his presidency obsessed with the optics of his inauguration and left the presidency obsessed with the optics of losing the election and lying about both in remarkably self-serving ways. In those cases, and all the cases in between, he was singularly focused on whether he was seen in a positive light and who saw him that way. On those who saw him positively he lavished his praise and attention, even if that undermined his political standing. For better or worse, Trump has helped personality psychology, as he provided an unambiguous example of the importance and effects it can have on a society.

These personological interpretations of two recent presidents provide examples of how personality psychology can be used to better understand individual lives or the whole person. They also highlight the fact that factors like personality traits do not operate in isolation. Truly understanding an individual necessitates a consideration of the entire constellation of individual attributes along with their social and historical context. It is impossible to explain an individual's behavior, be they the president or one's next-door neighbor, without considering multiple elements of their personality and how these attributes are organized within the person.

BASIC RESEARCH ISSUES

One of the typical recommendations we, and others, make at this stage is that the field should improve in some ways, with the pro forma recommendations to do a better job using multiple methods (Roberts et al. 2006a) and assessing "actual" behavior (Baumeister et al. 2007). We will refrain from reiterating these points because we believe they oversimplify the situation. Ever since Fiske went off on his own to study multiple modalities (Campbell & Fiske 1959), the field has known that

employing multiple methods seldom brings clarity to any issue, as the chasms between different methodological assessments of constructs are too wide and deep to bridge (Fiske 1971). Likewise, actual behavior is often studied in fields employing personality psychology constructs (e.g., industrial, health, and clinical psychology) even if those in the guild of personality do not do so enough.

Rather, we'd like to recommend that the field invest instead in understanding its core constructs. As a field, personality psychology needs to do the hard work of trying to understand the phenomena of personality psychology better. Using multiple methods and studying behavior (as well as thought and emotion) come naturally when better understanding is the goal. Moreover, using new and innovative techniques—smartphones, computers, and apps (e.g., Bleidorn et al. 2020)—will naturally involve multiple methods and in-the-moment assessments of thoughts, feelings, and behaviors, all of which could lead to improvements in our understanding of personality, personality development, and how personality affects people's lives. In fact, we have even gone so far as to suggest that we abandon the traditional personality assessment approaches in favor of these more real-time methods, as our statistical models are more than adequate to estimate things like stable traits from the continuous stream of thoughts, feelings, and behaviors (Roberts 2018).

The fact that we have not focused on the biology or physiology of personality may look like a conspicuous omission. We have chosen to ignore biological issues related to personality psychology for three reasons. First, in our opinion, biological factors are more often correlates, rather than causes, of the phenotypes we study. Although it may be interesting to those motivated to investigate the neural correlates of narcissism, knowing which part of the brain lights up in an fMRI does us little good in understanding the effect of being accosted by a narcissistic supervisor. Second, everything we need to know about the construct of narcissism is contained in the phenotype. That one's supervisor is narcissistic and whether they will change is what one needs to know, not whether they have a certain biochemical marker of narcissism. If, as many assume, some unchanging biological factor causes a trait like narcissism to remain fixed, we should see that fixedness in the phenotype and study it with impunity without ever conducting an fMRI scan or drawing our participants' blood. Moreover, according to evolutionary biologists, evolution does not act on the biological substrate but acts on the phenotype (West-Eberhard 2003). A phenotype like extraversion or narcissism can be ascertained without fancy or expensive equipment. Furthermore, in the ultimate irony, the biomarker for any phenotype is wholly dependent on the measure of that phenotype, which is typically left to the psychologist, not the biologist. Third, the emphasis on biology has come at the expense of our ability to understand the constructs of personality psychology and, in turn, human nature. The majority of research conducted on the biological underpinnings of personality, whether using genetic polymorphisms or using neuroimaging, has been conducted using remarkably uninformative designs (Button et al. 2013, Chabris et al. 2012). We have literally wasted millions and millions of dollars pursuing underpowered, uninformative research out of a misplaced wish to find a biological root to our phenotypes, and we have done so to the detriment of better investments in measuring and understanding the phenomena of personality psychology. If only a quarter of the funds dedicated to these biological causes of personality had been invested instead on improving the assessment and understanding of the core constructs of the field, there would likely have been innumerable advances for psychological science.

Finally, the discovery of personality psychology by policy makers creates interesting choices and opportunities for the field (Kankaraš & Suarez-Alvarez 2019). Historically, personality psychology has not focused on applied issues, being proudly iconoclastic and hostile to having some form of utility and beholden to the ideal of being a basic science. Despite the field's best efforts to remain a basic science, others have discovered its utility and are making a compelling case for applied research in personality science. In particular, clinical science and economics have come to understand that personality is robustly linked to important outcomes for the self and society

(Cuijpers et al. 2010). More importantly, especially from a policy standpoint, personality changes not only happen but also predict important life outcomes, such as job attainment and income (Hoff et al. 2021). Moreover, personality is changeable (Stieger et al. 2021), which leads to the conclusion that it is a viable target for intervention (Bleidorn et al. 2020). Finally, although some have ethical reservations about the idea of changing personality (English & Carstensen 2014), it is often the case that when we seek to change ourselves or others, our goal is, at the very least, a personality-like change (Roberts et al. 2017a). We do not seek out therapists just to get back on our feet. We'd like to stay on our feet for good. We do not hope our supervisor's leadership training fails to last beyond the retreat. Thus, the push toward policy relevance invites a new, albeit challenging, research agenda focused on how to change personality, how to make the change last, and how to make sure the change results in consequences we want and avoids unforeseen side effects.

Of course, basic science is ideally done in the service of testing theories. Personality science gave up on grand theories, and maybe it is time the field revisits the question of grand theories. Psychology as a whole, and personality psychology in particular, has backed away from grand theories since the latter half of the twentieth century. In terms of producing replicable robust science, the move away from grand theories was seemingly a good one. The unintended consequence of this move appears to be a balkanization of psychology and personality psychology into minor subfields that focus on incommensurate issues and constructs. Although this balkanization is good for the deep dives into particular issues, the net result is a dispersed field with little harmony in its efforts or conclusions. Of course, there is an inescapable fact: There is only one true version of human nature lurking behind all of our scientific efforts. In our current approach to science, we act as if there were as many versions of human nature as there are research questions to ask. In contrast, if we could achieve a widely accepted grand theory of personality and thus human nature, many of the rifts in the field could be reconciled. Although it might be naive to assume that this can be done, it is also a fact that in the absence of creating these grand theories, we will not realize the potential our science can provide.

INSTITUTIONAL ISSUES

In many ways, these are halcyon days for personality science. No longer shackled with the burdens of the person-situation debate, blessed with reams of data from ongoing longitudinal studies, and enjoying a well-deserved reputation for conducting more replicable science (Soto 2019), the field would be expected to be on the rise, as evidenced in this review. When considering the creation of the Association for Research in Personality in the United States, the robust and positive relation of that group with its European counterparts (e.g., the European Association for Personality Psychology), and the burgeoning appreciation for personality science by other fields—such as clinical, industrial, and health psychology as well as economics (Borghans et al. 2008) and political science (Mondak & Halperin 2008)—one would assume the field's future is bright.

However, some institutional issues continue to be potential barriers to the future health of the field. One of the conspicuous features of the personality renaissance is that it has happened more in Europe than in the United States. It is fair to ask why. The most salient difference is that personality psychology in Europe is not typically aligned with or housed within social psychology, as it is in the United States. European personality psychologists are more often independent and are aligned with fields like developmental, clinical, or quantitative psychology, where the alliance is more mutualistic and appreciative (e.g., Rauthmann 2020). These groups often use similar methods and share assumptions about human nature. A lot can be said for being housed with guilds that find your work intrinsically valuable, and this appears to have benefited European personality psychology greatly.

In contrast, since the creation of Division 8: Social and Personality Psychology within the American Psychological Association, US-based social and personality psychologists have been housed together in one organization. This marriage of social and personality psychology reflects the idealistic vision offered by early-twentieth-century psychologists like Gordon Allport, who believed that a proper understanding of human behavior would entail both perspectives (Tracy et al. 2009). While the idea is noble, the execution has not lived up to that lofty vision.

One reason for the failure to live up to this ideal is the history of social and personality psychology in the United States. The person-situation debate that emerged in the 1970s was essentially a battle between a social psychology vision of human nature positing that the cause is in the situation and a personality-based vision of human nature positing that people bring significant and entrenched individual differences to every situation. Functionally and structurally, the person-situation debate was won by the situationists, in that the field turned toward social psychology during the last half of the twentieth century for simple but profoundly important decisions such as whom to hire in an academic position. Programs that used to house personality psychologists stopped doing so, and the number of positions open to personality scientists declined in a commensurate fashion. Given the slow turnover of the academic system, these historical decisions reverberate for many generations, such that personality psychology is quite the minority partner in the social and personality relationship even to this day.

This divided history is coupled to methodological value systems that are also, unfortunately and unnecessarily, seen as being in opposition to one another. As many social psychologists note, social psychology is unashamedly an experimental enterprise focused on the causes of behavior (Fiske 2016). Aside from the provocative new intervention research on personality noted above, personality psychologists largely use observational methods to study phenomena that cannot be manipulated. In the inimical words of Baumeister (2016), the result is a field that is notably stodgy and boring, at least in contrast to the exciting, risky experimental research traditionally offered up by social psychology.

The functional result of the historical divisions and value differences just described is that there are only three independent personality science PhD programs in the United States and no personality psychologists at many of the most esteemed US psychology programs (Lanning 2017). In fact, a significant proportion of personality scientists were not hired with the title of personality psychologist but were rather hired as methodologists or quantitative psychologists. So, despite the heartening revitalization of personality psychology over the last two decades, the future of the field is less clear. In the United States, we lack a healthy set of doctoral programs staffed and motivated to study personality psychology. There are few jobs for doctoral students, and hiring decisions in social/personality programs err in the direction of social psychology.

It is impossible not to see the irony and missed opportunity that have resulted from the structural disparities between social and personality psychology while writing these words in the midst of a pandemic and at the end of the Trump administration. In the middle of the twentieth century, social and personality psychologists went their separate ways to understand fascism and the appeal of authoritarian leaders. Instead of bringing the resulting insights together to form a comprehensive understanding of both leaders and their followers, they used the findings to uphold unintegrated arguments about the power of the situation or the prominence of personality. The Asch conformity studies and the Milgram experiments were used to show the power of the situation, and even now are used to argue against personality interpretations of abhorrent behavior (Zimbardo 2007). Conversely, fascinating personological interpretations of Trump's personality tend to not integrate situational forces or effects.

Like the twentieth century, the twenty-first century is faced with a rise in fascist and authoritarian leaders and values across the globe. It appears that social and personality psychologists do

not have a ready answer that integrates their independent and differing world views on the topic. If the Trump presidency was an undeniable example of the importance of personality, it was also an unequivocal clarion call for an integrated understanding of both personality and social forces. The reality is that the Trump presidency was one of the most incredibly powerful situations faced by US citizens in history. And the situation in this case was caused, in no uncertain terms, by Trump's personality. Moreover, the effect of Trump's personality was felt in almost bimodal ways depending on individual differences in traits, motives, skills, and narrative identities (e.g., Clayton et al. 2019, Garrison et al. 2018). Some were enthralled by his style, while others were distressed. Like the pandemic that followed, the Trump presidency showed in immediate and stark relief the importance of both person and situation to the understanding and amelioration of societies across the globe. Going forward, we hope that social and personality psychology will come together to better approximate Allport's lofty vision so that society is better prepared to handle these episodes.

CONCLUSION

We conclude with apologies to the domains of personality psychology that we have not covered in this review. In most cases, our omission is not a sign of contempt but is due to prioritizing because of limited space. The field deserves a book-length review. Topics such as person perception (Funder 2012), well-being and happiness (Diener et al. 2003, Lucas 2007), attachment (Fraley 2019), evolution and personality (Nettle 2006), behavioral genetics of personality (Briley et al. 2018), self-dimensions (Lodi-Smith & DeMarree 2018, Robins et al. 2001), machine learning and personality (Bleidorn & Hopwood 2019), and personality psychology's interface with other areas—such as clinical (Hopwood et al. 2012), industrial (Oswald & Hough 2010), and health (Graham et al. 2017, Hampson 2012, Segerstrom 2019) psychology—clearly deserve coverage and attention.

To conclude, personality psychology has grown up, it seems, and like a teenager it appears ready to leave home and be on its own. The field has established robust empirical edifices that are replicable and can and should inform any emerging theoretical understandings of human nature. The answers to the four basic questions posed at the beginning of this review are far from being complete, but they are richer and more satisfying than at any other time in the history of the field. We hope that the future holds more mutual and respectful conversations with other areas of psychology as well as other fields that may contribute to improving psychological science in general and personality science in particular.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

ACKNOWLEDGMENTS

We would like to thank Brent Donnellan, Simine Vazire, Jennifer Lodi-Smith, Patrick Hill, Daniel Mroczek, Julia Briskin, Daniel Briley, Will Dunlop, Suzanne Segerstrom, and R. Christopher Fraley for prior feedback on the manuscript. These individuals are in no way responsible for any oversights, gaffes, or perceived mischaracterizations that may still be included.

LITERATURE CITED

Abrahams L, Pancorbo G, Primi R, Santos D, Kyllonen P, et al. 2019. Social-emotional skill assessment in children and adolescents: advances and challenges in personality, clinical, and educational contexts. Psychol. Assess. 31:460–73

- Adler JM. 2012. Living into the story: agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. 7. Pers. Soc. Psychol. 102(2):367–89
- Adler JM, Dunlop WL, Fivush R, Lilgendahl JP, Lodi-Smith J, et al. 2017. Research methods for studying narrative identity: a primer. Soc. Psychol. Pers. Sci. 8:519–27
- Adler JM, Lodi-Smith J, Philippe FL, Houle I. 2016. The incremental validity of narrative identity in predicting well-being: a review of the field and recommendations for the future. Pers. Soc. Psychol. Rev. 20:142–75
- Adler JM, Turner AF, Brookshier KM, Monahan C, Walder-Biesanz I, et al. 2015. Variation in narrative identity is associated with trajectories of mental health over several years. 7. Pers. Soc. Psychol. 108:476–96
- Adorno T, Frenkel-Brenswik E, Levinson DJ, Sanford RN. 1950. The Authoritarian Personality: Studies in Prejudice. New York: Harper & Row
- Allport GW. 1937. Personality: A Psychological Interpretation. New York: Holt
- Allport GW. 1965. Letters from Jenny. New York: Harcourt Brace Jovanovich
- Anusic I, Schimmack U. 2016. Stability and change of personality traits, self-esteem, and well-being: introducing the meta-analytic stability and change model of retest correlations. J. Pers. Soc. Psychol. 110:766–81
- Ardelt M. 2000. Still stable after all these years? Personality stability theory revisited. Soc. Psychol. Q. 63:391–405
- Ashton MC, Lee K. 2020. Objections to the HEXACO model of personality structure—and why those objections fail. Eur. 7. Pers. 34:492–510
- Atherton OE, Grijalva E, Roberts BW, Robins RW. 2021. Stability and change in personality traits and major life goals from college to midlife. *Pers. Soc. Psychol. Bull.* 47(5):841–58
- Barresi J, Juckes TJ. 1997. Personology and the narrative interpretation of lives. 7. Pers. 65(3):693-719
- Barrick MR, Mount MK. 1991. The Big Five personality dimensions and job performance: a meta-analysis. Pers. Psychol. 44(1):1–26
- Baumeister RF. 2016. Charting the future of social psychology on stormy seas: winners, losers, and recommendations. 7. Exp. Soc. Psychol. 66:153–58
- Baumeister RF, Vohs KD, Funder DC. 2007. Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspect. Psychol. Sci.* 2(4):396–403
- Baumert A, Schmitt M, Perugini M, Johnson W, Blum G, et al. 2017. Integrating personality structure, personality process, and personality development. Eur. J. Pers. 31(5):503–28
- Bazana PG, Stelmack RM. 2004. Stability of personality across the life span: a meta-analysis. In *On the Psy-chobiology of Personality*, ed. R Stelmack, pp. 113–44. New York: Elsevier
- Blain SD, Sassenberg TA, Xi M, Zhao D, DeYoung CG. 2019. Extraversion but not depression predicts implicit reward sensitivity: revisiting the measurement of anhedonic phenotypes. PsyArXiv, Dec. 19. https://doi.org/10.31234/osf.io/vzt6d
- Bleidorn W, Hopwood CJ. 2019. Using machine learning to advance personality assessment and theory. *Pers. Soc. Psychol. Rev.* 23(2):190–203
- Bleidorn W, Hopwood CJ, Back MD, Denissen JJ, Hennecke M, et al. 2020. Longitudinal experience-wide association studies—a framework for studying personality change. Eur. J. Pers. 34(3):285–300
- Bohn A, Berntsen D. 2013. The future is bright and predictable: the development of prospective life stories across childhood and adolescence. *Dev. Psychol.* 49(7):1232–41
- Borghans L, Duckworth AL, Heckman JJ, Ter Weel B. 2008. The economics and psychology of personality traits. J. Hum. Resourc. 43(4):972–1059
- Borghuis J, Denissen JJ, Oberski D, Sijtsma K, Meeus WH, et al. 2017. Big Five personality stability, change, and codevelopment across adolescence and early adulthood. *7. Pers. Soc. Psychol.* 113(4):641–57
- Branje SJ, Van Lieshout CF, Van Aken MA, Haselager GJ. 2004. Perceived support in sibling relationships and adolescent adjustment. *J. Child Psychol. Psychiatry* 45(8):1385–96
- Breil SM, Geukes K, Wilson RE, Nestler S, Vazire S, et al. 2019. Zooming into real-life extraversion—how personality and situation shape sociability in social interactions. *Collabra Psychol.* 5(1):7
- Briley DA, Livengood J, Derringer J. 2018. Behaviour genetic frameworks of causal reasoning for personality psychology. *Eur.* 7. *Pers.* 32(3):202–20
- Burt SA, Donnellan MB, Humbad MN, Hicks BM, McGue M, Iacono WG. 2010. Does marriage inhibit antisocial behavior? An examination of selection versus causation via a longitudinal twin design. *Arch. Gen. Psychiatry* 67(12):1309–15

- Button KS, Ioannidis JP, Mokrysz C, Nosek BA, Flint J, et al. 2013. Power failure: why small sample size undermines the reliability of neuroscience. *Nat. Rev. Neurosci.* 14(5):365–76
- Campbell DT, Fiske DW. 1959. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychol. Bull. 56(2):81–105
- Campbell JP, Wiernik BM. 2015. The modeling and assessment of work performance. Annu. Rev. Organ. Psychol. Organ. Behav. 2:47–74
- Caspi A, Roberts BW, Shiner RL. 2005. Personality development: stability and change. Annu. Rev. Psychol. 56:453–84
- Chabris CF, Hebert BM, Benjamin DJ, Beauchamp J, Cesarini D, et al. 2012. Most reported genetic associations with general intelligence are probably false positives. *Psychol. Sci.* 23(11):1314–23
- Chow PI, Roberts BW. 2014. Examining the relationship between changes in personality and changes in depression. *J. Res. Pers.* 51:38–46
- Clayton DM, Moore SE, Jones-Eversley SD. 2019. The impact of Donald Trump's presidency on the well-being of African Americans. 7. Black Stud. 50(8):707–30
- Condon DM, Mroczek DK. 2016. Time to move beyond the Big Five? Eur. 7. Pers. 30(4):311-12
- Cook CL, Krems JA, Kenrick DT. 2021. Fundamental motives illuminate a broad range of individual and cultural variations in thought and behavior. Curr. Dir. Psychol. Sci. 30(3):242–50
- Corker KS, Oswald FL, Donnellan MB. 2012. Conscientiousness in the classroom: a process explanation. 7. Pers. 80(4):995–1028
- Costa PT, McCrae RR. 1980. Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people. J. Pers. Soc. Psychol. 38(4):668–78
- Credé M, Tynan MC, Harms PD. 2017. Much ado about grit: a meta-analytic synthesis of the grit literature. 7. Pers. Soc. Psychol. 113(3):492–511
- Cuijpers P, Smit F, Penninx BW, de Graaf R, ten Have M, Beekman AT. 2010. Economic costs of neuroticism: a population-based study. *Arch. Gen. Psychiatry* 67(10):1086–93
- Damian RI, Roberts BW. 2015. The associations of birth order with personality and intelligence in a representative sample of US high school students. *7. Res. Pers.* 58:96–105
- 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. J. Pers. Soc. Psychol. 91(3):538–52
- Deary IJ, Whiteman MC, Starr JM, Whalley LJ, Fox HC. 2004. The impact of childhood intelligence on later life: following up the Scottish mental surveys of 1932 and 1947. 7. Pers. Soc. Psychol. 86(1):130–47
- Denissen JJ. 2014. A roadmap for further progress in research on personality development. Eur. J. Pers. 28:213–15
- DeYoung CG. 2015. Cybernetic Big Five theory. 7. Res. Pers. 56:33–58
- Diener E, Oishi S, Lucas RE. 2003. Personality, culture, and subjective well-being: emotional and cognitive evaluations of life. *Annu. Rev. Psychol.* 54:403–25
- Dobewall H, Aavik T. 2016. Rank-order consistency and profile stability of self- and informant-reports of personal values in comparison to personality traits. *J. Individ. Differ*: 37:40–48
- Duckworth AL, Peterson C, Matthews MD, Kelly DR. 2007. Grit: perseverance and passion for long-term goals. 7. Pers. Soc. Psychol. 92(6):1087–101
- Duckworth AL, Yeager DS. 2015. Measurement matters: assessing personal qualities other than cognitive abilities for educational purposes. *Educ. Res.* 44:237–51
- Dunlop WL, Guo J, McAdams DP. 2016. The autobiographical author through time: examining the degree of stability and change in redemptive and contaminated personal narratives. Soc. Psychol. Pers. Sci. 7(5):428– 36
- Dweck CS. 2017. From needs to goals and representations: foundations for a unified theory of motivation, personality, and development. *Psychol. Rev.* 124:689–719
- Elliot AJ, Church MA. 1997. A hierarchical model of approach and avoidance achievement motivation. *J. Pers. Soc. Psychol.* 72(1):218–32
- Elliot AJ, Gable SL, Mapes RR. 2006. Approach and avoidance motivation in the social domain. *Pers. Soc. Psychol. Bull.* 32:378–91
- Elliot AJ, Harackiewicz JM. 1996. Approach and avoidance achievement goals and intrinsic motivation: a mediational analysis. *J. Pers. Soc. Psychol.* 70(3):968–80

- English T, Carstensen LL. 2014. Will interventions targeting conscientiousness improve aging outcomes? Dev. Psychol. 50(5):1478–81
- Ferguson CJ. 2010. A meta-analysis of normal and disordered personality across the life span. J. Pers. Soc. Psychol. 98(4):659–67
- Fiske DW. 1971. Measuring the Concepts of Personality. Chicago: Aldine
- Fiske ST. 2016. Scratch an itch with a brick: why we do research. In *Handbook of Research Methods in Social and Personality Psychology*, ed. HT Reise, CM Judd, pp. 1–7. New York: Cambridge Univ. Press
- Fleeson W. 2001. Toward a structure- and process-integrated view of personality: traits as density distributions of states. J. Pers. Soc. Psychol. 80(6):1011–27
- Fleeson W, Jayawickreme E. 2015. Whole trait theory. J. Res. Pers. 56:82–92
- Fraley RC. 2019. Attachment in adulthood: recent developments, emerging debates, and future directions. Annu. Rev. Psychol. 70:401–22
- 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(1):60–74
- Funder DC. 2001. Personality. Annu. Rev. Psychol. 52:197-221
- Funder DC. 2008. Persons, situations, and person-situation interactions. In *Handbook of Personality: Theory and Research*, ed. OP John, RW Robins, LA Pervin, pp. 568–80. New York: Guilford
- Funder DC. 2012. Accurate personality judgment. Curr. Dir. Psychol. Sci. 21(3):177-82
- Gable SL, Impett EA. 2012. Approach and avoidance motives and close relationships. Soc. Pers. Psychol. Compass 6:95–108
- Garrison SM, Doane MJ, Elliott M. 2018. Gay and lesbian experiences of discrimination, health, and well-being: surrounding the presidential election. Soc. Psychol. Pers. Sci. 9(2):131–42
- Goldberg LR. 1993. The structure of phenotypic personality traits. Am. Psychol. 48(1):26-34
- Göllner R, Roberts BW, Damian RI, Lüdtke O, Jonkmann K, Trautwein U. 2017. Whose "storm and stress" is it? Parent and child reports of personality development in the transition to early adolescence. *J. Pers.* 85:376–87
- Graham EK, Rutsohn JP, Turiano NA, Bendayan R, Batterham P, et al. 2017. Personality predicts mortality risk: an integrative analysis of 15 international longitudinal studies. *J. Res. Pers.* 70:174–86
- Graham EK, Weston SJ, Gerstorf D, Yoneda TB, Booth T, et al. 2020. Trajectories of Big Five personality traits: a coordinated analysis of 16 longitudinal samples. *Eur. 7. Pers.* 34:301–21
- Habermas T, de Silveira C. 2008. The development of global coherence in life narratives across adolescence: temporal, causal, and thematic aspects. Dev. Psychol. 44(3):707–21
- Hampson SE. 2012. Personality processes: mechanisms by which personality traits "get outside the skin." Annu. Rev. Psychol. 63:315–39
- Hannuschke M, Gollwitzer M, Geukes K, Nestler S, Back M. 2020. Neuroticism and interpersonal perception: evidence for positive, but not negative, biases. *J. Pers.* 88(2):217–36
- Heckman JJ, Pinto R, Savelyev PA. 2013. Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *Am. Econ. Rev.* 103(6):1–35
- Hennecke M, Czikmantori T, Brandstätter V, Laceulle O. 2019. Doing despite disliking: self–regulatory strategies in everyday aversive activities. *Eur. J. Pers.* 33(1):104–28
- Hill PL, Turiano NA, Hurd MD, Mroczek DK, Roberts BW. 2011. Conscientiousness and longevity: an examination of possible mediators. *Health Psychol.* 30(5):536–41
- Hoff KA, Briley DA, Wee CJ, Rounds J. 2018. Normative changes in interests from adolescence to adulthood: a meta-analysis of longitudinal studies. *Psychol. Bull.* 144(4):426–51
- Hoff KA, Einarsdóttir S, Chu C, Briley DA, Rounds J. 2021. Personality changes predict early career outcomes: discovery and replication in 12-year longitudinal studies. *Psychol. Sci.* 32(1):64–79
- Hofmann W, Finkel EJ, Fitzsimons GM. 2015. Close relationships and self-regulation: how relationship satisfaction facilitates momentary goal pursuit. J. Pers. Soc. Psychol. 109:434–52
- Hooker K, McAdams DP. 2003. Personality reconsidered: a new agenda for aging research. J. Gerontol. B Psychol. Sci. Soc. Sci. 58(6):296–304
- Hopwood CJ, Bleidorn W. 2018. Stability and change in personality and personality disorders. *Curr. Opin. Psychol.* 21:6–10

- Hopwood CJ, Thomas KM, Markon KE, Wright AG, Krueger RF. 2012. DSM-5 personality traits and DSM-IV personality disorders. 7. Abnorm. Psychol. 121(2):424–32
- Horstmann KT, Rauthmann JF, Sherman RA, Ziegler M. 2021. Unveiling an exclusive link: predicting behavior with personality, situation perception, and affect in a preregistered experience sampling study. 7. Pers. Soc. Psychol. 120(5):1317–43
- Hudson NW, Fraley RC, Chopik WJ, Briley DA. 2020. Change goals robustly predict trait growth: a megaanalysis of a dozen intensive longitudinal studies examining volitional change. Soc. Psychol. Pers. Sci. 11(6):723–32
- Hudson NW, Roberts BW, Lodi-Smith J. 2012. Personality trait development and social investment in work. 7. Res. Pers. 46(3):334–44
- Impett EA, Gordon AM, Kogan A, Oveis C, Gable SL, Keltner D. 2010. Moving toward more perfect unions: daily and long-term consequences of approach and avoidance goals in romantic relationships. J. Pers. Soc. Psychol. 99(6):948–63
- Inzlicht M, Werner KM, Briskin JL, Roberts BW. 2021. Integrating models of self-regulation. Annu. Rev. Psychol. 72:319–45
- Jonason PK, Kaufman SB, Webster GD, Geher G. 2013. What lies beneath the Dark Triad Dirty Dozen: varied relations with the Big Five. *Individ. Differ. Res.* 11(2):81–90
- Judge TA, Heller D, Mount MK. 2002. Five-factor model of personality and job satisfaction: a meta-analysis. J. Appl. Psychol. 87(3):530–41
- Kankaraš M, Suarez-Alvarez J. 2019. Assessment framework of the OECD Study on Social and Emotional Skills. OECD Educ. Work. Pap. 207, Organ. Econ. Co-operation Dev., Paris
- Kasser T. 2016. Materialistic values and goals. Annu. Rev. Psychol. 67:489-514
- Kenrick DT, Funder DC. 1988. Profiting from controversy: lessons from the person-situation debate. Am. Psychol. 43(1):23–34
- Köber C, Schmiedek F, Habermas T. 2015. Characterizing lifespan development of three aspects of coherence in life narratives: a cohort-sequential study. *Dev. Psychol.* 51(2):260–75
- Kosse F, Deckers T, Pinger P, Schildberg-Hörisch H, Falk A. 2020. The formation of prosociality: causal evidence on the role of social environment. *J. Political Econ.* 128(2):434–67
- Krueger RF, Markon KE. 2014. The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. Annu. Rev. Clin. Psychol. 10:477–501
- Kuncel NR, Hezlett SA. 2010. Fact and fiction in cognitive ability testing for admissions and hiring decisions. Curr. Dir. Psychol. Sci. 19(6):339–45
- Kuncel NR, Hezlett SA, Ones DS. 2004. Academic performance, career potential, creativity, and job performance: Can one construct predict them all? 7. Pers. Soc. Psychol. 86(1):148–61
- Laceulle OM, Nederhof E, Karreman A, Ormel J, Van Aken MAG. 2012. Stressful events and temperament change during early and middle adolescence: the TRAILS study. Eur. J. Pers. 26(3):276–84
- Lanning K. 2017. What is the relationship between "personality" and "social" psychologies? Network, community, and whole text analyses of the structure of contemporary scholarship. Collabra Psychol. 3(1):8
- Le K, Donnellan MB, Spilman SK, Garcia OP, Conger R. 2014. Workers behaving badly: associations between adolescent reports of the Big Five and counterproductive work behaviors in adulthood. *Pers. Individ. Differ*: 61:7–12
- Lee MR, Ellingson JM, Sher KJ. 2015. Integrating social-contextual and intrapersonal mechanisms of "maturing out": joint influences of familial-role transitions and personality maturation on problem-drinking reductions. Alcohol. Clin. Exp. Res. 39(9):1775–87
- Lehnart J, Neyer FJ. 2006. Should I stay or should I go? Attachment and personality in stable and instable romantic relationships. Eur. J. Pers. 20(6):475–95
- Lehnart J, Neyer FJ, Eccles J. 2010. Long-term effects of social investment: the case of partnering in young adulthood. 7. Pers. 78(2):639–70
- Lilienfeld SO, Miller JD, Lynam DR. 2018. The Goldwater Rule: perspectives from, and implications for, psychological science. Perspect. Psychol. Sci. 13(1):3–27
- Lodi-Smith J, DeMarree K, eds. 2018. Self-Concept Clarity: Perspectives on Assessment, Research, and Application. New York: Springer

- Lodi-Smith J, Geise AC, Roberts BW, Robins RW. 2009. Narrating personality change. J. Pers. Soc. Psychol. 96(3):679–89
- Low KS, Yoon M, Roberts BW, Rounds J. 2005. The stability of vocational interests from early adolescence to middle adulthood: a quantitative review of longitudinal studies. *Psychol. Bull.* 131(5):713–37
- Lucas RE. 2007. Adaptation and the set-point model of subjective well-being: Does happiness change after major life events? *Curr. Dir. Psychol. Sci.* 16(2):75–79
- Lucas RE, Donnellan MB. 2009. If the person-situation debate is really over, why does it still generate so much negative affect? 7. Res. Pers. 43(2):146–49
- Lucas RE, Donnellan MB. 2011. Personality development across the life span: longitudinal analyses with a national sample from Germany. 7. Pers. Soc. Psychol. 101(4):847–61
- Lüdtke O, Roberts BW, Trautwein U, Nagy G. 2011. A random walk down university avenue: life paths, life events, and personality trait change at the transition to university life. J. Pers. Soc. Psychol. 101(3):620–37
- McAdams DP. 2010. George W. Bush and the Redemptive Dream: A Psychological Portrait. New York: Oxford Univ. Press
- McAdams DP. 2013. The psychological self as actor, agent, and author. Perspect. Psychol. Sci. 8(3):272-95
- McAdams DP. 2020. The Strange Case of Donald J. Trump: A Psychological Reckoning. New York: Oxford Univ. Press
- McAdams DP, Bauer JJ, Sakaeda AR, Anyidoho NA, Machado MA, et al. 2006. Continuity and change in the life story: a longitudinal study of autobiographical memories in emerging adulthood. *J. Pers.* 74(5):1371–400
- McAdams DP, Pals JL. 2006. A new Big Five: fundamental principles for an integrative science of personality. Am. Psychol. 61(3):204–17
- McCrae RR, Costa PT Jr. 2008. Empirical and theoretical status of the Five-Factor Model of personality traits. In *The SAGE Handbook of Personality Theory and Assessment*, ed. G Boyle, G Matthews, DH Saklofske, pp. 273–94. Thousand Oaks, CA: Sage
- McIntosh AM, Gow A, Luciano M, Davies G, Liewald DC, et al. 2013. Polygenic risk for schizophrenia is associated with cognitive change between childhood and old age. *Biol. Psychiatry* 73(10):938–43
- McLean KC, Syed M, Pasupathi M, Adler JM, Dunlop WL, et al. 2019. The empirical structure of narrative identity: the initial Big Three. J. Pers. Soc. Psychol. 4:920–44
- Milyavskaya M, Inzlicht M. 2017. What's so great about self-control? Examining the importance of effortful self-control and temptation in predicting real-life depletion and goal attainment. *Soc. Psychol. Pers. Sci.* 8(6):603–11
- Mischel W. 1968. Personality and Assessment. New York: Wiley
- Mondak JJ, Halperin KD. 2008. A framework for the study of personality and political behaviour. *Br. J. Political Sci.* 38(2):335–62
- Mõttus R, Wood D, Condon DM, Back MD, Baumert A, et al. 2020. Descriptive, predictive and explanatory personality research: different goals, different approaches, but a shared need to move beyond the Big Few traits. *Eur. 7. Pers.* 34(6):1175–201
- Mroczek DK. 2014. Personality plasticity, healthy aging, and interventions. Dev. Psychol. 50:1470–74
- Mroczek DK, Graham EK, Turiano NA, Aro-Lambo MO. 2021. Personality development in adulthood and later life. In *Handbook of Personality: Theory and Research*, ed. RW Robins, OP John, LA Pervin, pp. 336–51. New York: Guilford. 4th ed.
- Mroczek DK, Spiro A III. 2003. Modeling intraindividual change in personality traits: findings from the Normative Aging Study. 7. Gerontol. B Psychol. Sci. Soc. Sci. 58(3):153–65
- Mroczek DK, Spiro A III, Turiano NA. 2009. Do health behaviors explain the effect of neuroticism on mortality? Longitudinal findings from the VA Normative Aging Study. 7. Res. Pers. 43(4):653–59
- Murray HA. 1938. Explorations in Personality. New York: Oxford Univ. Press
- Natl. Res. Counc. 2012. Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century. Washington, DC: Natl. Acad. Press
- Nettle D. 2006. The evolution of personality variation in humans and other animals. Am. Psychol. 61:622–31
- Newman DA, Lyon JS. 2009. Recruitment efforts to reduce adverse impact: targeted recruiting for personality, cognitive ability, and diversity. J. Appl. Psychol. 94(2):298–317

- Nguyen PLL, Kim HL, Romain AMN, Tabani S, Chaplin WF. 2020. Personality change and personality as predictor of change in psychotherapy: a longitudinal study in a community mental health clinic. *J. Res. Pers.* 87:103980
- Noftle EE, Robins RW. 2007. Personality predictors of academic outcomes: Big Five correlates of GPA and SAT scores. *J. Pers. Soc. Psychol.* 93(1):116–30
- Nye CD, Su R, Rounds J, Drasgow F. 2012. Vocational interests and performance: a quantitative summary of over 60 years of research. Perspect. Psychol. Sci. 7(4):384–403
- Nye CD, Wille B, Amory J, De Fruyt F. 2020. Are work activities related to interest change over time? A 22-year longitudinal study. J. Pers. Soc. Psychol. In press. https://psycnet.apa.org/doi/10.1037/pspp0000360
- Oltmanns JR, Jackson JJ, Oltmanns TF. 2020. Personality change: longitudinal self-other agreement and convergence with retrospective-reports. J. Pers. Soc. Psychol. 118(5):1065–79
- Oswald FL, Hough LM. 2010. Personality and its assessment in organizations: theoretical and empirical developments. In *APA Handbook of Industrial and Organizational Psychology*, Vol. 2: *Selecting and Developing Members for the Organization*, ed. S Zedeck, pp. 153–84. Washington, DC: Am. Psychol. Assoc.
- Ozer DJ, Benet-Martinez V. 2006. Personality and the prediction of consequential outcomes. *Annu. Rev. Psychol.* 57:401–21
- Pals JL. 2006. Narrative identity processing of difficult life experiences: pathways of personality development and positive self-transformation in adulthood. 7. Pers. 74(4):1079–110
- Paulhus DL, Williams KM. 2002. The Dark Triad of personality: narcissism, Machiavellianism, and psychopathy. J. Res. Pers. 36(6):556–63
- Pinquart M, Fröhlich C, Silbereisen RK. 2007. Optimism, pessimism, and change of psychological well-being in cancer patients. Psychol. Health Med. 12(4):421–32
- Poropat AE. 2009. A meta-analysis of the five-factor model of personality and academic performance. *Psychol. Bull.* 135(2):322–38
- Rauthmann JF. 2020. Übersicht über DPPD Professuren im deutschsprachigen Raum (November/Dezember 2020) [Overview of professorships of personality psychology and psychological assessment in German-speaking countries (November/December 2020)]. Intern. Doc., Fachgr. Differ. Psychol. Pers. Psychol. Diagn. (DPPD), Trier, Ger.
- Revelle W, Wilt J, Condon DM. 2011. Individual differences and differential psychology: a brief history and prospect. In *The Wiley-Blackwell Handbook of Individual Differences*, ed. T Chamorro-Premuzic, S von Stumm, A Furnham, pp. 1–38. Oxford, UK: Wiley-Blackwell
- Ritchie SJ, Bates TC, Deary IJ. 2015. Is education associated with improvements in general cognitive ability, or in specific skills? *Dev. Psychol.* 51(5):573–82
- Ritchie SJ, Tucker-Drob EM. 2018. How much does education improve intelligence? A meta-analysis. *Psychol. Sci.* 29(8):1358–69
- Roberts BW. 2007. Contextualizing personality psychology. 7. Pers. 75(6):1071-82
- Roberts BW. 2009. Back to the future: personality and assessment and personality development. *J. Res. Pers.* 43(2):137-45
- Roberts BW. 2018. A revised sociogenomic model of personality traits. J. Pers. 86(1):23-35
- Roberts BW, Caspi A, Moffitt TE. 2003. Work experiences and personality development in young adulthood. 7. Pers. Soc. Psychol. 84(3):582–93
- Roberts BW, DelVecchio WF. 2000. The rank-order consistency of personality traits from childhood to old age: a quantitative review of longitudinal studies. *Psychol. Bull.* 126(1):3–25
- Roberts BW, Harms PD, Smith J, Wood D, Webb M. 2006a. Methods in personality psychology. In Handbook of Psychological Assessment: A Multimethod Perspective, ed. M Eid, E Diener, pp. 321–35. Washington, DC: Am. Psychol. Assoc.
- Roberts BW, Hill PL, Davis JP. 2017a. How to change conscientiousness: the sociogenomic trait intervention model. Pers. Disord. 8(3):199–205
- 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. Perspect. Psychol. Sci. 2(4):313–45

- Roberts BW, Luo J, Briley DA, Chow PI, Su R, Hill PL. 2017b. A systematic review of personality trait change through intervention. *Psychol. Bull.* 143(2):117–41
- Roberts BW, Mroczek D. 2008. Personality trait change in adulthood. Curr. Dir. Psychol. Sci. 17(1):31-35
- Roberts BW, Nickel LB. 2020. Personality development across the life course: a neo-socioanalytic perspective. In *Handbook of Personality Theory and Research*, ed. OP John, RW Robins, pp. 259–83. New York: Guilford. 4th ed.
- Roberts BW, Robins RW. 2000. Broad dispositions, broad aspirations: the intersection of personality traits and major life goals. *Pers. Soc. Psychol. Bull.* 26(10):1284–96
- Roberts BW, Walton K, Viechtbauer W. 2006b. Personality changes in adulthood: reply to Costa & McCrae 2006. *Psychol. Bull.* 132:29–32
- Roberts BW, Wood D. 2006. Personality development in the context of the neo-socioanalytic model of personality. In *Handbook of Personality Development*, ed. DK Mroczek, TD Little, pp. 11–39. Mahwah, NJ: Erlbaum
- Roberts BW, Wood D, Caspi A. 2008. The development of personality traits in adulthood. In *Handbook of Personality: Theory and Research*, ed. OP John, RW Robins, LA Pervin, pp. 375–98. New York: Guilford. 3rd ed.
- Robins RW, Caspi A, Moffitt TE. 2002. It's not just who you're with, it's who you are: personality and relationship experiences across multiple relationships. *J. Pers.* 70(6):925–64
- Robins RW, Tracy JL, Trzesniewski K, Potter J, Gosling SD. 2001. Personality correlates of self-esteem. 7. Res. Pers. 35(4):463–82
- Salmela-Aro K, Aunola K, Nurmi JE. 2007. Personal goals during emerging adulthood: a 10-year follow up. 7. Adolesc. Res. 22(6):690–715
- Salmela-Aro K, Nurmi JE, Saisto T, Halmesmäki E. 2000. Women's and men's personal goals during the transition to parenthood. *J. Fam. Psychol.* 14(2):171–86
- Schaie KW, Strother CR. 1968. A cross-sequential study of age changes in cognitive behavior. *Psychol. Bull.* 70:671–80
- Schuerger JM, Zarrella KL, Hotz AS. 1989. Factors that influence the temporal stability of personality by questionnaire. 7. Pers. Soc. Psychol. 56(5):777–83
- Schultheiss OC, Wirth MM, Torges CM, Pang JS, Villacorta MA, Welsh KM. 2005. Effects of implicit power motivation on men's and women's implicit learning and testosterone changes after social victory or defeat. 7. Pers. Soc. Psychol. 88(1):174–88
- Schultz LH, Connolly JJ, Garrison SM, Leveille MM, Jackson JJ. 2017. Vocational interests across 20 years of adulthood: stability, change, and the role of work experiences. 7. Res. Pers. 71:46–56
- Schwaba T, Bleidorn W. 2018. Individual differences in personality change across the adult life span. J. Pers. 86(3):450-64
- Schwartz SH. 1994. Are there universal aspects in the structure and contents of human values? J. Soc. Issues 50(4):19-45
- Scollon CN, Diener E. 2006. Love, work, and changes in extraversion and neuroticism over time. *J. Pers. Soc. Psychol.* 91(6):1152–65
- Segerstrom SC. 2019. Between the error bars: how modern theory, design, and methodology enrich the personality-health tradition. *Psychosom. Med.* 81(5):408–14
- Sengsavang S, Pratt MW, Alisat S, Sadler P. 2018. The life story from age 26 to 32: rank-order stability and mean-level change. *J. Pers.* 86(5):788–802
- Solomon BC, Jackson JJ. 2014. Why do personality traits predict divorce? Multiple pathways through satisfaction. J. Pers. Soc. Psychol. 106(6):978–96
- Soto CJ. 2019. How replicable are links between personality traits and consequential life outcomes? The life outcomes of personality replication project. *Psychol. Sci.* 30(5):711–27
- Soto CJ, Napolitano CM, Roberts BW. 2021. Taking skills seriously: toward an integrative model and agenda for social, emotional, and behavioral skills. Curr. Dir. Psychol. Sci. 30(1):26–33
- Stieger M, Flückiger C, Rüegger D, Kowatsch T, Roberts BW, Allemand M. 2021. Changing personality traits with the help of a digital personality change intervention. *PNAS* 118(8):e2017548118

- Stoll G, Rieger S, Lütdke O, Nagengast B, Trautwein U, Roberts BW. 2017. Vocational interests at the end of high school predict life outcomes assessed 10 years later over and above IQ and Big Five personality traits. 7. Pers. Soc. Psychol. 113(1):167–84
- Stoll G, Rieger S, Nagengast B, Trautwein U, Rounds J. 2021. Stability and change in vocational interests after graduation from high school: a six-wave longitudinal study. *J. Pers. Soc. Psychol.* 120(4):1091–116
- Su R, Tay L, Liao HY, Zhang Q, Rounds J. 2019. Toward a dimensional model of vocational interests. J. Appl. Psychol. 104(5):690–714
- Sun J, Harris K, Vazire S. 2019. Is well-being associated with the quantity and quality of social interactions? 7. Pers. Soc. Psychol. 119(6):1478–96
- Swann WB Jr., Seyle C. 2005. Personality psychology's comeback and its emerging symbiosis with social psychology. Pers. Soc. Psychol. Bull. 31(2):155–65
- Tabbarah M, Crimmins EM, Seeman TE. 2002. The relationship between cognitive and physical performance: MacArthur Studies of Successful Aging. J. Gerontol. A Biol. Sci. Med. Sci. 57(4):228–35
- Tang TZ, DeRubeis RJ, Hollon SD, Amsterdam J, Shelton R, Schalet B. 2009. Personality change during depression treatment: a placebo-controlled trial. Arch. Gen. Psychiatry 66(12):1322–30
- Thalmayer AG, Saucier G. 2014. The questionnaire Big Six in 26 nations: developing cross-culturally applicable Big Six, Big Five and Big Two inventories. Eur. 7. Pers. 28(5):482–96
- Tissera H, Gazzard Kerr L, Carlson EN, Human LJ. 2020. Social anxiety and liking: towards understanding the role of metaperceptions in first impressions. *J. Pers. Soc. Psychol.* In press. https://doi.org/10.1037/pspp0000363
- Tracy JL, Robins RW, Sherman JW. 2009. The practice of psychological science: searching for Cronbach's two streams in social-personality psychology. *J. Pers. Soc. Psychol.* 96(6):1206–25
- Tucker-Drob EM, Briley DA. 2014. Continuity of genetic and environmental influences on cognition across the life span: a meta-analysis of longitudinal twin and adoption studies. *Psychol. Bull.* 140(4):949–79
- Turiano NA, Pitzer L, Armour C, Karlamangla A, Ryff CD, Mroczek DK. 2012. Personality trait level and change as predictors of health outcomes: findings from a national study of Americans (MIDUS). 7. Gerontol. B Psychol. Sci. Soc. Sci. 67(1):4–12
- Valentijn SA, Van Boxtel MP, Van Hooren SA, Bosma H, Beckers HJ, et al. 2005. Change in sensory functioning predicts change in cognitive functioning: results from a 6-year follow-up in the Maastricht Aging Study. J. Am. Geriatr: Soc. 53(3):374–80
- Van Aken MA, Denissen JJ, Branje SJ, Dubas JS, Goossens L. 2006. Midlife concerns and short-term personality change in middle adulthood. Eur. J. Pers. 20(6):497–513
- Van Iddekinge CH, Ferris GR, Heffner TS. 2009. Test of a multistage model of distal and proximal antecedents of leader performance. Pers. Psychol. 62(3):463–95
- Van Scheppingen MA, Jackson JJ, Specht J, Hutteman R, Denissen JJ, Bleidorn W. 2016. Personality trait development during the transition to parenthood: a test of social investment theory. Soc. Psychol. Pers. Sci. 7(5):452–62
- Vecchione M, Alessandri G, Barbaranelli C, Caprara G. 2012. Gender differences in the Big Five personality development: a longitudinal investigation from late adolescence to emerging adulthood. Pers. Individ. Differ: 53(6):740–46
- Vecchione M, Schwartz S, Alessandri G, Döring AK, Castellani V, Caprara MG. 2016. Stability and change of basic personal values in early adulthood: an 8-year longitudinal study. J. Res. Pers. 63:111–22
- West-Eberhard MJ. 2003. Developmental Plasticity and Evolution. Oxford, UK: Oxford Univ. Press
- Wilkowski BM, Fetterman A, Lappi SK, Williamson LZ, Leki EF, et al. 2020. Lexical derivation of the PINT taxonomy of goals: prominence, inclusiveness, negativity prevention, and tradition. J. Pers. Soc. Psychol. 119(5):1153–87
- Wille B, Beyers W, De Fruyt F. 2012. A transactional approach to person-environment fit: reciprocal relations between personality development and career role growth across young to middle adulthood. *J. Vocat. Behav.* 81(3):307–21
- Wilson RS, Schneider JA, Arnold SE, Bienias JL, Bennett DA. 2007. Conscientiousness and the incidence of Alzheimer disease and mild cognitive impairment. Arch. Gen. Psychiatry 64(10):1204–12
- Wirth J, Stebner F, Trypke M, Schuster C, Leutner D. 2020. An interactive layers model of self-regulated learning and cognitive load. *Educ. Psychol. Rev.* 32(4):1127–49

- Wrzus C, Roberts BW. 2017. Processes of personality development in adulthood: the TESSERA framework. Pers. Soc. Psychol. Rev. 21(3):253-77
- Zettler I, Thielmann I, Hilbig BE, Moshagen M. 2020. The nomological net of the HEXACO model of personality: a large-scale meta-analytic investigation. Perspect. Psychol. Sci. 15(3):723-60
- Zimbardo P. 2007. The Lucifer Effect: Understanding How Good People Turn Evil. London: Random
- Zimmermann J, Neyer FJ. 2013. Do we become a different person when hitting the road? Personality development of sojourners. J. Pers. Soc. Psychol. 105(3):515-30



Annual Review of Psychology

Volume 73, 2022

Contents

Recollecting What We Once Knew: My Life in Psycholinguistics Lila R. Gleitman and Claire Gleitman	1
Memory and Reward-Based Learning: A Value-Directed Remembering Perspective Barbara J. Knowlton and Alan D. Castel	25
Normative Principles for Decision-Making in Natural Environments Christopher Summerfield and Paula Parpart	
Speech Computations of the Human Superior Temporal Gyrus **Ilina Bhaya-Grossman and Edward F. Chang** **Lina Bhaya-Grossman and Edward Bhaya-Gro	79
Cognitive, Systems, and Computational Neurosciences of the Self in Motion Jean-Paul Noel and Dora E. Angelaki	. 103
Exploring Cognition with Brain–Machine Interfaces Richard A. Andersen, Tyson Aflalo, Luke Bashford, David Bjånes, and Spencer Kellis	. 131
Brain Mechanisms Underlying the Subjective Experience of Remembering Jon S. Simons, Maureen Ritchey, and Charles Fernyhough	159
Neurophysiology of Remembering György Buzsáki, Sam McKenzie, and Lila Davachi	. 187
The Basis of Navigation Across Species Cody A. Freas and Ken Cheng	. 217
Computational Psychiatry Needs Time and Context Peter F. Hitchcock, Eiko I. Fried, and Michael J. Frank	. 243
Persistence and Disengagement in Personal Goal Pursuit Veronika Brandstätter and Katharina Bernecker	. 271
Social Motivation at Work: The Organizational Psychology of Effort for, Against, and with Others Adam M. Grant and Marissa S. Shandell	301

Attitudes, Habits, and Behavior Change **Bas Verplanken and Sheina Orbell** 327
Childhood Antisocial Behavior: A Neurodevelopmental Problem Stephanie H.M. van Goozen, Kate Langley, and Christopher W. Hobson
Human Cooperation and the Crises of Climate Change, COVID-19, and Misinformation Paul A.M. Van Lange and David G. Rand
Diversity Training Goals, Limitations, and Promise: A Review of the Multidisciplinary Literature Patricia G. Devine and Tory L. Ash
Psychology and Indigenous People Roberto González, Héctor Carvacho, and Gloria Jiménez-Moya
Psychology Within and Without the State H. Clark Barrett
Personality Psychology Brent W. Roberts and Hee J. Yoon
Personal Values Across Cultures Lilach Sagiv and Shalom H. Schwartz
Educational Psychology Is Evolving to Accommodate Technology, Multiple Disciplines, and Twenty-First-Century Skills Arthur C. Graesser, John P. Sabatini, and Haiying Li
Cultivating Resilience During the COVID-19 Pandemic: A Socioecological Perspective Ning Zhang, Shujuan Yang, and Peng Jia
What Are the Health Consequences of Upward Mobility? Edith Chen, Gene H. Brody, and Gregory E. Miller
The Social Effects of Emotions Gerben A. van Kleef and Stéphane Côté
Catching Up on Multilevel Modeling Lesa Hoffman and Ryan W. Walters 659
Optimizing Research Output: How Can Psychological Research Methods Be Improved? **Jeff Miller and Rolf Ulrich**
Replicability, Robustness, and Reproducibility in Psychological Science Brian A. Nosek, Tom E. Hardwicke, Hannah Moshontz, Aurélien Allard, Katherine S. Corker, Anna Dreber, Fiona Fidler, Joe Hilgard, Melissa Kline Struhl, Michèle B. Nuijten, Julia M. Rohrer, Felipe Romero, Anne M. Scheel, Laura D. Scherer, Felix D. Schönbrodt, and Simine Vazire

Quantum Cognition Emmanuel M. Pothos and Jerome R. Busemeyer	749
Indexes	
Cumulative Index of Contributing Authors, Volumes 63–73	779
Cumulative Index of Article Titles, Volumes 63–73	784
Errata	
An online log of corrections to <i>Annual Review of Psychology</i> articles may be found at http://www.annualreviews.org/errata/psych	