PERSONALITY

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■ **Abstract**   Personality psychology is as active today as at any point in its history. The classic psychoanalytic and trait paradigms are active areas of research, the behaviorist paradigm has evolved into a new social-cognitive paradigm, and the humanistic paradigm is a basis of current work on cross-cultural psychology. Biology and evolutionary theory have also attained the status of new paradigms for personality. Three challenges for the next generation of research are to integrate these disparate approaches to personality (particularly the trait and social-cognitive paradigms), to remedy the imbalance in the person-situation-behavior triad by conceptualizing the basic properties of situations and behaviors, and to add to personality psychology's thin inventory of basic facts concerning the relations between personality and behavior.

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INTRODUCTION

The mission of personality psychology is theoretical, empirical, and institutional. The theoretical mission is to account for individuals' characteristic patterns of thought, emotion, and behavior together with the psychological mechanisms—hidden or not—behind those patterns (Funder 2001). The empirical mission in service of this theoretical goal is to gather and analyze data that reveal how persons, situations, and behaviors are inter-related, and to develop psychometric tools to clarify the nature of these relations. The institutional mission, perhaps the most important one, is to provide an integrative force in an era of scientific specialization and fragmentation. Personality psychology seeks to bring together the contributions of developmental, social, cognitive and biological psychology into an understanding of whole persons and the dimensions of difference that allow them to be psychologically distinguished from one another.

Personality psychology is extraordinarily active at present, perhaps more so than at any time in its history. The past decade has seen a dramatic upsurge in research activity, conference presentations, journal submissions, and student interest. For example, the *Journal of Research in Personality* (currently edited by the author of this review) has seen an increase in submissions every year since 1996. A particularly interesting trend is that many of these submissions come from psychologists who are not affiliated with formal programs in personality psychology, and may not even think of themselves as personality psychologists. A further indication of the vitality of the field is the founding of a new Association for Research in Personality (D Watson, personal communication).

Some current activity concerns perennial issues such as the status of the classic paradigms and controversies concerning appropriate units and levels of analysis. Old empirical issues such as the person-situation debate (Kenrick & Funder 1988) and even the response set controversy (Rorer 1965, Paulhus 1991) continue to simmer and generate an occasional new report. However, the most genuinely exciting activity in personality research consists of the efforts to generate new conceptual and empirical ties to other historically isolated parts of psychology. Each of these intersections is the site of important progress, and together they offer the prospect of personality psychology eventually fulfilling its institutional mission of being the place where the rest of psychology comes together.

STATUS OF THE CLASSIC PARADIGMS

Personality is unique in psychology by being historically based upon several different widely encompassing paradigms: psychoanalytic, trait, behaviorist, and humanistic. Each has sought to subsume not just all of personality, but all of psychology, as befits personality psychology's integrative mission. In recent years, all four of these paradigms have expanded their scope, two of them to the degree that they have spun off independent new paradigms.

Psychoanalytic

Amid much resistance, the psychoanalytic paradigm has begun to evolve beyond armchair speculation into a field of empirical research, as witnessed by a special issue of the *Journal of Personality* on defense mechanisms (Baumeister et al 1998, Cramer & Davidson 1998, Norem 1998), and a major review of recent, relevant research published in *Psychological Bulletin* (Westen 1998). Sigmund Freud's psychoanalytic theorizing is also beginning to receive some belated credit— deserved or not—for having anticipated the current parallel distributed processing models of cognition, which conceptualize behavior and consciousness as the result of an ongoing compromise among numerous independently operating mental subsystems (Rumelhart et al 1986). Finally, and least edifying, the personal life of Sigmund Freud, deceased these 60 years and more, continues to generate controversy (Crews 1998, Swales 1988).

Trait

The End of the Debate   The person-situation debate, concerning whether consistencies in individuals' behavior are pervasive or broad enough to be meaningfully described in terms of personality traits (Mischel 1968, Kenrick & Funder 1988), can at last be declared about 98% over. Two hard-won empirical recognitions have been particularly important in the resolution.

The first recognition is that the behavior of a sample of individuals observed in one situation correlates with their behavior in a second situation with a magnitude that routinely reaches $r = .40$ or greater (Funder & Colvin 1991). Even protagonists of the situationist side of the debate grant this figure (Nisbett 1980), though interpretations of its meaning still differ. Some writers calculate that this .40 reveals that only 16% of variance in behavior is accounted for by individual differences (Mischel 1968, Pervin 1994). In response, other writers have noted that (*a*) the figure refers only to the prediction of single behaviors and not aggregate trends (Epstein 1979, Hogan 1998), (*b*) the practice of squaring correlations to interpret their size is misleading (Ozer 1985), (*c*) a .40 correlation represents 70% accuracy in predicting a dichotomous criterion (Rosenthal & Rubin 1982), and (*d*) this correlation represents the approximate size of some of the most important situational effects in social psychology (Funder & Ozer 1983).

The second recognition, more slow to be widely appreciated, is that behavioral consistency and change are orthogonal phenomena (Funder & Colvin 1991). Findings that seemingly small alterations in an experimental situation can lead to large mean differences in behavior have been interpreted as implying that cross-situational consistency and the influence of personality on behavior are low (Mischel 1984). However, the magnitude of the mean difference in behavior between two situations has no implications (barring ceiling or floor effects) for the magnitude of the correlation that indexes the consistency of individual differences across them (Ozer 1986). Observations that children can wait twice as long for

a preferred treat when a small change is made in the stimulus situation therefore are not in the least inconsistent with the common finding that a child who can wait longer than other children in one situation is probably able to do so in other situations as well (Funder & Harris 1986). The long-standing and controversy-generating dichotomy between the effect of the situation versus the effect of the person on behavior, therefore, is and always was a false dichotomy.

Even in the darkest days of the person-situation debate, personality trait constructs found an appreciative audience and useful application in industrial and organizational settings (Hogan et al 1996). Today, well-trained personality psychologists find themselves eminently employable in the private sector (M Schmitt, personal communication). In the academic realm, journals give the impression of a field newly unshackled, as trait constructs are used to understand outcomes such as violence, alcohol abuse, unsafe sex, dangerous driving (Krueger et al 2000), job performance (Ones et al 1993), management (Chatman et al 1999, Roberts & Hogan 2001), and marriage (Caughlin et al 2000).

The Big Five   The "big five" organization of personality trait constructs seems almost ubiquitous in the current literature, despite some persistent opposition (McAdams 1992; Block 1995, 2001). Extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience (or culture) have been correlated with many other personality traits and some behavioral and social outcomes (McCrae & Costa 1999). Personality psychology has been long beset by a chaotic plethora of personality constructs that sometimes differ in label while measuring nearly the same thing, and sometimes have the same label while measuring very different things. The use of five broad traits as a common currency for personality psychology has been an important counterforce to this Tower of Babel. A previous *Annual Review of Psychology* chapter aptly characterized the big five as the "latitude and longitude" along which any new personality construct should be routinely mapped (Ozer & Reise 1994, p. 361; also Goldberg 1993).

For all the popularity and evident orienting usefulness of the big five, two issues remain problematic. The first concerns whether the five traits are independent of each other. They were derived in the first place using orthogonal rotations, so at the factor level the big five may be considered independent (Goldberg 1990). However, the personality scales used to measure them in practice typically are intercorrelated (e.g. Saucier 1994), although some measurement refinements (e.g. ipsatizing the data) make the intercorrelations smaller. When neuroticism is reflected (as it sometimes is) and renamed emotional stability, then all five of the basic factors are positively correlated, probably because all of them (in American culture) are socially desirable (Digman 1997).

A second and more important issue concerns whether the big five subsume all there is to say about personality. The answer is almost certainly no: Whereas almost any personality construct can be mapped onto the big five, you cannot derive every personality construct from the big five. For example, whereas an individual high on self-monitoring (Snyder 1987) might be described as high on extraversion,

high on agreeableness, and low on conscientiousness, a description of someone in terms of these three elements would not capture the essence of self-monitoring. By the same token, an authoritarian personality (Adorno et al 1950) would be high on conscientiousness and low on agreeableness and openness to experience, but again much would be lost if we tried to reduce our understanding of authoritarianism to these three dimensions. There are also particular reasons to doubt that the big five are sufficient to account for personality disorders (Clark 1993). This lack of comprehensiveness becomes a problem when researchers, seduced by convenience and seeming consensus, act as if they can obtain a complete portrait of personality by grabbing five quick ratings.

Other Approaches to Individual Differences   Beyond the study of single personality traits and the big five, several other themes are becoming increasingly prominent within the study of individual differences in personality. One theme concerns the study of whole lives using narrative methods (McAdams 1999) and, increasingly often, longitudinal data (Caspi & Siva 1995, Kremen & Block 1998, Roberts & Helson 1997).

A second theme concerns an apparent mini-revival of the typological approach to personality. Despite the field's history of disrespect for the concept of personality types (Mendelsohn et al 1982), Caspi (1998) recently marshaled impressive evidence from several independent research programs converging on the conclusion that many individuals can be classified as well-adjusted, maladjusted overcontrolled, or maladjusted undercontrolled.

Finally, research on the biology of personality has exploded over the past few years. Two very different methodologies, behavioral genetics and physiology/anatomy, converge on the inescapable conclusion that stable individual differences in personality are to a large extent biologically based. This realization has led the trait approach to generate and spin off a new paradigm, the biological approach to personality (see below).

Behaviorist

The behaviorist approach to personality has undergone an interesting and even ironic evolution in recent years. Behaviorism began with the ambition of its founders—John Watson (1925) and BF Skinner (1938, 1971)—to excise from psychology all that is subjective and unobservable. This led to a research approach in which behavior was viewed exclusively as a function of environmentally imposed reinforcement contingencies. Unobservable mediators such as perceptions, memories, thoughts, and traits were banished from the analysis.

Although a small number of psychologists remained true to this creed, to others it became clear that this restriction was unsustainable. The behaviorist analysis omits important phenomena such as vicarious learning, and the "social learning" theorists pointed out that for a human—if not for a rat—it is one's beliefs about potential reinforcements, not the reinforcements themselves, that determine behavior

(Rotter 1954, 1982; Bandura 1977). Social learning theory itself evolved from Rotter's emphasis on expectancies concerning reinforcement probabilities to Bandura's emphasis on self-efficacy, which concerns beliefs about one's capacities. Bandura increasingly turned his attention to the "self system" (Bandura 1978), and eventually renamed his approach "social cognitive theory" (Bandura 1999, p. 185). At the same time, another social learning theorist, Walter Mischel, developed a "cognitive-affective personality system" (CAPS) influenced by current research on parallel distributed processing models of cognition (Mischel 1999).

The irony in this evolution is that a paradigm that began with the goal of banishing cognitive concepts from psychology evolved into an approach that places such concepts front and center. A further irony is that although individual difference constructs were anathema to the classic behaviorists, such constructs (e.g. optimism, pessimism, goal orientation, and the degree to which one is schematic) play an important role in the new cognitive approach to personality (see below).

Humanistic

The humanistic approach to personality has a proud history and is the route through which influences as diverse as European existentialism and Asian Zen Buddhism entered mainstream psychological thought through the writings of Carl Rogers (1951), Abraham Maslow (1987), George Kelly (1955), and others. The approach has fallen on hard times in recent years, however. Some of its subjectivist interpretation of personality had an indirect influence on the social-cognitive approach (Mischel was a student of Kelly), but the remaining self-proclaimed humanists fell to squabbling among themselves when they were not excoriating mainstream psychology for its narrow-minded, scientific values (e.g. Mair 1979). Joseph Rychlak (1988) made a vigorous attempt to revive a scientifically respectable brand of humanistic psychology, with a degree of success that is not evident so far.

Cross-Cultural Issues   A revival of humanistic concerns can be discerned, however, within the growing emphasis on cross-cultural issues in psychology. A hallmark of the humanistic perspective has been its insistence that the only way to understand another human being is phenomenologically, that is, by understanding his or her distinctive experience of reality (Rogers 1951, Kelly 1955). This concern comes to the fore when psychologists begin to consider the degree to which their analyses, developed for the most part within North American and European culture, might apply to members of different cultures with perhaps fundamentally different views of reality. These cultures might be from diverse geographic locations such as India, China, and Japan, or be subcultures such as inner city, ethnic, or immigrant populations.

This phenomenological, cross-cultural concern has led researchers in two directions. One direction is to conclude that precisely because our own cultural background is the unavoidable basis of everything we do and think, any analysis

of another culture must be hopelessly distorted. In particular, psychological comparisons between cultures are impossible because there is no common set of terms on which different cultures can be meaningfully compared (Shweder & Sullivan 1993). The other direction is to try to distinguish between the psychological elements that are shared by all cultures (etics) and those that are distinctive to particular cultures (emics) (Triandis 1997). The big five have been offered as possible etics; a vigorous research effort is attempting to demonstrate their cross-cultural applicability (e.g. McCrae et al 1998, Yang et al 1999).

NEW PARADIGMS

In the past few years, three new basic paradigms for the study of personality have joined the four classics just considered. Two of these—the social-cognitive and biological approaches—grew out of the behaviorist and trait paradigms, respectively. The third—evolutionary psychology—deserves to be considered a new paradigm (for personality psychology) in its own right.

Social-Cognitive

As befits a relatively new approach, the social-cognitive paradigm for the study of personality is difficult to define with any precision. The research forms a fuzzy set characterized by a focus on cognitive processes of the individual, especially perception and memory, a use of terms borrowed from cognitive psychology ("schema" being a particular favorite), and—in an apparent holdover from its behaviorist roots—an aversion to construing its individual difference constructs as generalizable beyond a narrow range of contexts.

Examples of Current Research   Much of the research that marches behind this banner—see the recent collection assembled by Cervone & Shoda (1999)—is interrelated in this loose sense. A few recent examples are described in this section.

Higgins (1999) continues to advance his theory of self-comparison that focuses on the way people compare who they believe they are with who they ought to be and who they hope to be. A perceived failure to be who you should be leads to anxiety, Higgins theorizes, whereas a failure to be who you wish to be leads to depression. The relative mix of these two discrepancies, within an individual, appears to affect emotional reactivity, memory retrieval, and even reaction time (Higgins 1999).

Baldwin (1999) described recent research on "relational schemas," which are self-images evoked by interactions with specific other people. These schemas affect information processing and behavior and are theorized to control the distinctive way in which an individual might act with different other people. A self-image as a "teacher" might be evoked by encountering someone associated with an other-schema for a "learner"; the self-schema of a "rebellious, put-upon

teenager" might be evoked by the activation of the complementary schema of the "overbearing parent" (Baldwin 1999, p. 129; Markus & Kunda 1986). In principle, one could have as many relational self-schemas as there are different people with whom one interacts.

This fragmentation of the self-concept has generated some opposition. The social-cognitive theorist Albert Bandura writes that

> Social cognitive theory ... rejects the fractionation of human agency into multiple selves. A theory of personality cast in terms of multiple selves plunges one into deep philosophical waters. It requires a regress of selves to a presiding overseer self that selects and manages the collection of selves... Actually, there is only one self that can visualize different futures and select courses of action (Bandura 1999, p. 194).

A third and final example of current social-cognitive research on personality comes from the influential program by Carol Dweck (Dweck 1997, Grant & Dweck 1999). Dweck's elegant theory ties a person's fundamental worldview (incremental versus entity) to a goal orientation (learning versus performance) to a behavioral pattern in response to failure (mastery versus helplessness). The theory is backed by an impressive array of data and is directly applicable to real-life issues concerning people who fail to achieve to their potential.

Prospects for an Integrated Social-Cognitive Approach   A wide variety of research programs of the sort just mentioned could be cited, which indicates the current vitality of the social-cognitive paradigm. At the same time, the plethora of topics reveals a degree of disorganization and even immaturity. Much like the trait paradigm before the advent of the big five, the social-cognitive paradigm seems to comprise a vast range of diverse mini-topics pursued largely independently of each other, and no overall theme (beyond the sort of fuzzy set identification mentioned above) has yet tied them all together.

The two leading candidates for potential integrators of this diverse approach are two of its founders. Bandura's (2001) social cognitive theory of personality updates his well-known version of social learning theory with a particular emphasis on self-regulation. Bandura described the development of a self-system as the result of the interaction of the person and his or her environment, which allows self-control through self-reward and self-punishment—a possible basis of moral behavior. Mischel's CAPS theory integrates cognitive social learning variables (e.g. encoding processes, subjective stimulus values) into a model that includes previously neglected influences such as culture and society and even genetic background (see Mischel 1999, p. 49). The most notable aspect of CAPS is its reconceptualization of personality dispositions in terms of "behavioral signatures" or *if ... then* behavioral profiles, which for each individual specify what he or she will do in each situational context he or she encounters.

Much remains to be done before the CAPS approach will achieve its full potential. One unfulfilled task is the classification of situations that will allow *if ... then*

profiles to become less complex than the phenomena they are intended to explain. When psychology achieves a well-accepted, thorough system for identifying classes of situations, *if ... then* profiles might be economically used to predict what a person will do in certain kinds of situations. So far, however, the task of psychologically classifying situations has barely begun (see below).

Prospects for Integration with the Trait Approach   Another challenge for CAPS, and the whole social-cognitive approach to personality, is to identify areas of distinctiveness and overlap with the trait approach. It would be possible, for example, to view sets of *if ... then* profiles as specific instantiations of personality traits: *If* a friendly person finds himself with a stranger, *then* he will walk up and introduce himself. *If* a dominant person joins a meeting, *then* she will quickly assume a leadership role, and so on. Rather than being merely old wine in new bottles (Johnson 1999), such constructs could prove to be a useful way to help trait constructs become more specific. For example, how does the *if ... then* profile differ between, say, someone high on extraversion and someone high on agreeableness?

For its part, the assessment technology developed by the trait approach could provide a methodological contribution to cognitively oriented research. It can be astonishing to review major studies within the social-cognitive paradigm and to find, again and again, that all rests upon an independent variable that is an individual difference construct measured with a short self-report scale. Sometimes, the scale may be only three or four items long, change its content in large or small ways from one study to the next, and have unknown (and unexamined) reliability and factorial structure.

Moreover, investigators seldom administer other measures at the same time that would allow assessment of the degree to which social-cognitive constructs might be related and perhaps even identical to widely studied trait constructs. If this were done more often, the results might be surprising. In one study, scores on the Sociability and Responsibility scales of the California Psychological Inventory successfully predicted self-descriptive reaction time and other indicators of having a "self-schema" introduced by Markus (1977, Fuhrman & Funder 1995). This finding suggests that the constructs tapped by new measures of self-schemas and traditional personality assessment instruments such as the California Psychological Inventory may not be fundamentally different. A finding like this could be viewed cynically, but is more productively regarded as suggesting an opportunity for integrating the theoretical, empirical, and methodological achievements of the social-cognitive and trait paradigms into an exciting new hybrid for personality study.

It appears that such integration will not be easily achieved. A major obstacle is the almost dispositional reluctance of some investigators within the social-cognitive paradigm to grant the very existence of general patterns to behavior that their theories are well suited to explain. Perhaps as a holdover from the paradigm's behavioristic legacy, theorists such as Bandura choose to emphasize how "one and the same person" will behave "differently for different purposes, in different

activity domains, and in different social contexts" (Bandura 1999, p. 194), rather than the cross-situational consistencies in behavior that a unitary self system could help account for. Similarly, Grant & Dweck (1999) emphasize how being an "incremental theorist" in a social domain has no implications for one's view of the academic domain (and vice versa). Also, none of these investigators has compared his or her cognitive individual difference construct with the big five or any other widely used trait measure.

The implicit resistance to integration with the trait approach is on occasion made more than amply explicit. Cervone & Shoda (1999) set social-cognitive theory in direct opposition to personality trait models, and argue that any integration of the two approaches is "conceptually problematic and empirically unnecessary" (Cervone 1999, p. 329). Although a "merger of trait and social-cognitive theories is appealing at first," they comment, "this merger is generally not accepted by social-cognitive theorists" (Cervone & Shoda 1999, p. 10).

On a more hopeful note, one of the original social-cognitive theorists, Walter Mischel, observes,

> Personality psychology has been committed since its beginnings to characterizing individuals in terms of their stable and distinctive qualities. Other personality theorists and researchers have focused instead on the processes that underlie these coherences and that influence how people function. These two goals ... have been pursued in two increasingly separated (and warring) subdisciplines with different agendas that seem to be in conflict with each other ... [but] both goals may be pursued in concert with no necessary conflict or incompatibility because ... dispositions and processing dynamics are two complementary facets of the same phenomena and the same unitary personality system (Mischel 1999, pp. 55–56).

Biological

Anatomy and Physiology   The search for associations between personality traits and the structure and function of the nervous system has recently produced some dramatic gains. Just a few years ago, it was possible to regard research in neuroanatomy and physiology as relevant to personality in principle, but as having very little to contribute in fact. Such an attitude is no longer tenable. Anatomical sites within the brain have been located that are important for personality traits; for example, the frontal lobes for foresight and anticipation (Damasio 1994) and the amygdala for aggression and certain types of emotionality (Buck 1999). Even more impressive have been the contributions of physiology that show how, for example, the hormone testosterone is important for sociability and positive affectivity as well as aggressiveness and sexuality (Dabbs et al 1997, 1998), and the neurotransmitter serotonin is important for affect regulation (Knutson et al 1998, Zuckerman 1998).

A potential danger now is that some observers seem ready to jump from these achievements to simplistic, one-cause → one-effect conclusions such as

that testosterone causes aggression or depression is just a matter of insufficient serotonin. The truth is always more complex, in part because neuroanatomy and physiology are complicated, but equally because (a point sometimes forgotten) behavioral patterns such as aggression and depression are every bit as complicated, if not more so (Bandura 2001).

Behavioral Genetics   Another, very different, kind of biological investigation also has permanently changed personality psychology. Behavioral genetics has documented, without a shadow of a remaining doubt, that personality is to some degree genetically influenced: Identical twins reared apart have similar traits (Plomin et al 1990a). The *tabula rasa* view of personality as a blank slate at birth that is written upon by experience, for many years a basic assumption of theories of all stripes, is wrong.

In the aftermath of this stunning revelation, a few limitations of behavioral genetics research have become apparent. One limitation is that almost the entire field is based upon calculations of the similarities and differences among closer and more distant relatives in scores on self-report personality inventories. Behavior is rarely observed directly, and the field would have been more accurately named trait genetics—though it is interesting to speculate whether it would have achieved its current ascendancy under that label. A second limitation of the approach has been its sometime obsession with establishing the exact magnitude of heritability coefficients. As Turkheimer (1998) observed, once it is established that a trait has a nonzero heritability—and nearly every trait does—the psychologically interesting questions lie elsewhere than in making the heritability estimate more precise.

A third limitation is that the field sometimes seems in danger of making claims that go beyond the data (Maccoby 2000). The most widely advertised finding of behavioral genetics—beyond the ubiquitous influence of genetic factors itself—is that the shared family environment is unimportant for children's personality-related outcomes (Rowe 1997, Scarr 1992). Two children raised in the same family turn out to be little more similar to each other than if they had been raised in different families, according to standard behavioral genetic analyses, leading at least one writer (Harris 1995) to take things a step further and argue that the family itself is psychologically unimportant.

However, this conclusion is based on a complex analytic technique, and its data consist almost entirely of self-report questionnaires—when behavioral measures are used the shared family environment appears more important (Turkheimer 1998). It can also be observed that the families in behavioral genetics data bases are not as different from each other as families at large, leading the impact of the differences between families to be underestimated (Stoolmiller 1999). Recent studies of behavioral genetics are beginning to report important effects of shared environmental effects (e.g. Bussell et al 1999). Perhaps most importantly, any conclusion that the family does not matter flies in the face of decades of research in developmental psychology documenting effects of early experience on later life outcomes and even experimental studies showing that when parents change

their child-rearing strategies the outcomes for their children change (Eisenberg et al 1999, Collins et al 2000). The calm confidence of some behavioral geneticists that their method trumps these considerations should perhaps be considered a limitation, rather than a virtue, of their approach.

The fourth and most significant limitation of behavioral genetics research also presents its biggest opportunity. The approach addresses distal rather than proximal causes of behavior—it jumps immediately from degree of genetic relatedness to similarity of behavioral outcome. This jump creates problems when substantial heritabilities are found for outcomes such as divorce (Jocklin et al 1996) and television watching (Plomin et al 1990b), seemingly inviting a search for the DNA code of the "divorce gene" or even the "Fox TV gene." In reference to the TV finding, Plomin et al (1990b) remarked a few years ago that "it is likely to be difficult to find specific mechanisms of genetic influence on television viewing because genetic mechanisms have not as yet been uncovered for any complex behavioral trait, including cognitive abilities and personality" (p. 376). The situation is not much different today (Turkheimer 1998).

The challenge for the next phase of behavioral genetics research is to turn its attention toward the development of process models that describe how a gene creates a neural structure that creates a disposition to respond that, in interaction with the environment, creates a personality trait that, in some cultural contexts, might make a person more likely to watch TV or even become divorced. Bem (1996) offered a speculative example of how such a process might lead to a heterosexual or homosexual orientation, and his theory provides a model of how a comprehensive psychological analysis can include genetic, cultural, environmental and cognitive processes. Many more firmly grounded efforts of this sort are needed in relation to many more outcomes.

Evolutionary

A third new paradigm also has biological roots. However, it is so different from the biological approaches just discussed that it is best considered separately. Neuroanatomic, physiological and genetic approaches to personality all focus on the biological substrate of individual differences in behavioral patterns. The evolutionary approach to personality, by contrast, focuses on the possibility that behavioral patterns common to all people—human nature itself—has a biological foundation that can be illuminated by considering the evolutionary history of the human species.

Evolutionary ideas became an important part of biology beginning with Darwin (1859). Whereas Darwin himself offered some theorizing about the roots of behavior, the modern field of evolutionary psychology can be said to have begun with the "sociobiology" of the entomologist Wilson (1975), and current major advocates include Buss (1999), Kenrick (2000), and Simpson and Gangestad (Simpson et al 1999). Their work shares the key idea that during the "environment of evolutionary adaptation" humans with certain behavioral propensies were particularly likely

to survive and leave descendants. For example, humans who defended territory, nurtured children, and strove for domination were more likely to successfully reproduce than humans who did not do these things, with the result that their ultimate descendants—members of the present generation—generally have all of these behavioral tendencies.

Although no serious scientist doubts the theory of evolution, the evolutionary approach to psychology has been questioned on several grounds. One ground is that evolutionary theorists seem quick to assume that quite specific behavioral patterns—for example, the tendency of women to seek mates who have large amounts of money (Buss 1989), or of men to kill wives suspected of infidelity (Wilson & Daly 1996)—are directly determined by biological mechanisms. Yet no such mechanism that would allow genetic or physiological determination of human behavior to such a precise degree has ever been specifically identified. It might seem more plausible to posit that to the degree that behavioral patterns are biologically hard-wired, the wiring produces general capacities and propensities. Evolutionary theorists, in response, point to examples such as bird songs and spider web–spinning to show that specific behaviors can be built into an organism. Still, proximal biological or even psychological mechanisms in humans are almost totally missing from evolutionary theorizing. As one writer has observed,

> It would be refreshing to hear evolutionary psychologists directly
> acknowledge the importance of empirically evaluating whether those
> human social preferences posited to be adaptations are indeed genetically
> specified. Skeptical ... psychologists might be more receptive to evolutionary
> accounts ... if these critical and controversial points were put forth as
> hypotheses that need to be tested rather than as forgone conclusions.
> (Berry 2000, p. 325)

A second source of controversy—perhaps intentionally stirred—is the specific focus of many current theorists on sexual behavior. A large proportion of both theorizing and empirical research within evolutionary personality psychology has focused on such topics as sexual attraction, sexual jealousy, mating strategies, rape, and even uxoricide (spousal murder).

On the one hand, reproduction is a natural place for evolutionary theorizing to focus because of the obvious relevance to the basic mechanism of evolution, and this focus has yielded the secondary gain of drawing large amounts of attention, including from the popular press, on evolutionary theorizing. On the other hand, the traditional division of labor, resources, and power between the sexes is a fundamental aspect of many cultures, leaving many if not most of the phenomena addressed by evolutionary theorists susceptible to cultural explanation (Eagly & Wood 1999).

Perhaps just as consequentially, some of the evolutionary theorizing concerning sexuality has aroused the ire of feminists and others who believe it seeks to justify older men's obsessions with younger women, young women's obsessions with older men's money, the unequal distribution of material resources and power between the sexes, and even rape. Readers who find distasteful accounts of how

rape is a naturally evolved reproductive strategy that is adaptive for males who can obtain mates no other way (Thornhill & Palmer 2000) are likely to develop, perhaps unfairly, a negative view of evolutionary theorizing in general. To the degree that evolutionary psychology begins to balance its emphasis across other behavioral patterns with adaptive implications, these controversies will become less of a distraction, and the approach may be better evaluated on its scientific merits rather than on political grounds.

The third source of difficulty for evolutionary psychology is a by-product of its greatest strength. Its greatest strength is its ability to account for a wide range of behaviors, from preferences for salty foods to strivings to achieve dominance, that otherwise would have to be accepted as having become part of human nature for no particular reason. Pinker's (1997) ambitious survey vividly demonstrates how evolutionary theorizing can organize a broad sweep of behavioral phenomena. This very breadth, however, makes the theory difficult to test in any convincing way. The ability of evolutionary psychology to explain nearly everything is not an absolute virtue.

BASIC RESEARCH ISSUES

Imbalance in the Personality Triad

The empirical study of personality properly encompasses three elements: the person, the situation, and behavior. Ideally, knowledge about any two of these should lead to an understanding of the third. If we know everything about a person, and everything about his or her situation, we should be able to predict what he or she will do. By the same token, a knowledge of a person and his or her behavior should lead us to understand the situation, and a knowledge of a situation and a behavior should lead us to understand the person.

The traditional psychology of personality traits has used descriptions of persons to predict their behavior in implicitly specified classes of situations (e.g. sociability predicts behavior only in social situations) (Johnson 1997). In a parallel manner, Bem & Funder (1978) conceptualized situations in terms of "template-behavior pairs" that described how certain kinds of people would be predicted to behave in them. More recently, Mischel's (1999) CAPS theory of personality described *if…then* profiles in which persons are described in terms of how they behave in specified situations.

Despite these starts, the personality triad is unbalanced because two out of three of its elements have received only a small amount of attention in theory and research. The person element is well studied and almost all personality theory and assessment focuses on the variables that characterize a person's psychology so as to make him or her different from other people. Particular effort has gone into attempts to discern which of these variables are the most critical, such as investigations of the big five, personality typologies, and *if…then* profiles. These

attempts to identify the fundamental aspects of persons may not have achieved consensus, but no one can argue that the issue has been ignored.

The case is very different for situations and behaviors. For all the arguments that the situation is all-important (Ross & Nisbett 1991), little is empirically known or even theorized about how situations influence behavior, or what the basic kinds of situations are (or, alternatively, what variables are useful for comparing one situation with another). Evidence for the importance of situations is typically obtained by subtraction; that is, if a personality variable is found to correlate with a behavior with an $r = .40$, the remaining 84% of the variance is assigned to the situation by default. Yet this is clearly an illegitimate practice. It would be just as plausible to assign the remaining variance to other personality variables that were not measured (Ahadi & Diener 1989) as it is to assign it to situational variables that were also not measured. Moreover, the assigning of behavioral variance to a situation by subtraction provides no information about how the situation's influence came about or what aspects of the situation were crucial. In the words of one writer, "...situations turn out to be 'powerful' in the same sense as Scud missiles [the erratic weapons used by Iraq during the Persian Gulf war] are powerful: They may have huge effects, or no effects, and such effects may occur virtually anywhere, all over the map" (Goldberg 1992, p. 90).

A conceptualization of the key variables for characterizing the psychologically effective aspects of situations is sorely needed, as is a method for assessing these variables. A few starts towards this goal have been offered over the years (Bem & Funder 1978, Moos 1973, Frederiksen 1972, Van Mechelen & De Raad 1999), but the enterprise can still be considered only barely begun.

If little is known about situations, even less is known about behaviors. Behaviorism, the approach that judging by its label one might think would address this issue, historically has treated behaviors as functionally interchangeable. A bar press is much the same as a linguistic utterance from the perspective of behavioral theory (Skinner 1957). Other research programs have zeroed in on particular behaviors seen as intrinsically important (e.g. criminal behavior, obedience, altruism) or on behaviors that serve as convenient dependent variables for investigations of theoretical interest (e.g. reaction times, written responses on attitude questionnaires). Techniques for measuring behavior typically are similarly ad hoc.

At a broader level, only the most tentative efforts can be reported. Bakeman & Gottman (1997) provided general guidelines for the coding of observed behaviors at a low and specific level of analysis. Buss & Craik (1983) offered an "act frequency" approach that raised a possibility of someday reconceptualizing traits in terms of frequencies of classes of relevant behaviors. Funder and colleagues (Funder et al 2000) presented a "behavioral Q-sort" that provides 64 general descriptors to characterize an individual's behavior in a particular observed context. Funder & Colvin (1991) demonstrated properties of these behaviors that differentiated the ones that manifest more and less consistency. However, none of these efforts achieved the goal of identifying the fundamentally important variables for

the classification of behavior. Indeed, very little progress has even been made towards the task of counting behaviors. The reader might verify the difficulty of the latter issue by asking himself or herself: How many behaviors have you performed so far today?

Need for Descriptive Data

The typical research strategy in personality (as well as social) psychology is based upon explicit or implicit hypothesis testing, and data are gathered for the purpose of supporting or disconfirming a theoretical idea. This is a time-honored and proven strategy for scientific progress, but some commentators have begun to note its downside (Greenwald 1999, Hogan 1998). When data are gathered only for the purpose of hypothesis testing, basic descriptive data rarely enter the literature.

For personality psychology, this omission has become critical, as after three-quarters of a century of research on traits the catalog of basic facts concerning the relationships between personality and behavior remains thin. If, for example, one were to go to the literature and look for a list of contextualized behaviors that had been shown to be robustly associated with, say, extraversion, one would find surprisingly little. There would be no shortage of hypotheses tested concerning extraversion (e.g. do extraverts respond less intensely than introverts to lemon juice on the tongue), and an outright surplus of data concerning the correlations among extraversion questionnaires and other similar measures, but as for what extraverts have been observed to actually do, beyond some indication that they speak loudly (Scherer 1978), little would be found. Even less information is available about the behavioral correlates of other personality traits.

When Mischel (1968) challenged trait psychology for concrete examples of where a trait measure directly predicted behavior, or where one behavior predicted another, the trait psychologists were caught flat-footed. They had gathered very little such data, and both sides returned repeatedly (even embarrassingly often) to a summer camp study published by Hartshorne & May in 1928. Some new behavioral data relevant to personality have been reported in the intervening years (e.g. Block & Block 1980, Mischel & Peake 1982, Funder & Colvin 1991), but less than one might expect, given their fundamental importance.

The reasons for this lack are twofold. First, relative to other sciences, psychology devalues descriptive data (Greenwald 1999). A researcher willing to incur the effort to map out the behaviors that are associated with one or more important personality traits would find grant reviewers and journal editors typically unsympathetic. The counter-intuitive hypothesis will almost always win out over basic data gathering. Second, as mentioned above, even to the degree that the institutional obstacles could be overcome, a would-be data gatherer might be daunted by the lack of consensus concerning what behaviors to measure and which situational contexts to measure them in.

These reasons for neglect are of course not justifications. Personality psychology will make an important step towards fulfilling its potential when it begins to

assemble a comprehensive inventory of facts concerning the associations between personality and behavior, directly observed in a wide range of situations.

Need for a Broader Range of Data

As the preceding discussion implies, the facts important to personality psychology go beyond those that can be gathered by questionnaires. The construction and intercorrelation of self-report measures of personality is an economical and fruitful research method utilized both by trait psychologists and their social-cognitive brethren (e.g. Cervone & Shoda 1999). The method is limited, however, because people are imperfectly trustworthy when it comes to describing themselves, because correlations among questionnaires can reflect method variance (and even item overlap) as much as substantive relationships, and most fundamentally, because questionnaire responses are not what psychologists wish ultimately to know about. Psychologists want and need to know what people actually do, think, and feel in the various contexts of their lives.

Several related schemes for classifying data beyond questionnaires have been offered (Block & Block 1980, Cattell 1950, Funder 2001, Moffitt 1991). The other types include life-outcome data (such as health outcomes, job performance, criminal record), peers' reports (reputation), interviews, diary and beeper reports of daily experience, and—most difficult of all—direct behavioral observation (Funder et al 2000). All of these other kinds of data are much more difficult and expensive to gather than questionnaire data, which probably helps to explain why they are employed relatively rarely. Personality psychology will become a more relevant and firmly rooted discipline to the extent that, in coming years, this imbalance begins to be remedied.

INSTITUTIONAL ISSUES

Programs and Training

Someday a comprehensive history will be written of the permanent damage to the infrastructure of personality psychology wreaked by the person-situation debate of the 1970s and 1980s. Even as enthusiasm for the substance of personality research has revived, the institutional consequences continue. Indeed, one reason for the trend, noted above, for so much personality research being done by investigators not affiliated with formal programs in personality may be that there are so few formal programs to be affiliated with. The graduate programs in personality psychology that were shrunken beyond recognition or even abolished during the 1970s and 1980s have not been revived.

As already noted, interest in the substance of personality psychology continues unabated and may even be increasing, but two side effects of the field's institutional depletion present causes for concern. First, the intellectual continuity of personality psychology is threatened as few graduate students learn about

the field in an environment where the field is well understood or, sometimes, even respected. Second, some of the hard-won, basic methodological knowledge of personality psychology is not being transmitted to new generations (Aiken et al 1990). Consider the surprising number of studies within the social-cognitive approach that utilize brief self-report scales of unknown and unexamined reliability and construct validity. This widespread casual attitude toward measurement is not malicious; very likely, the investigators simply never learned the basic technology of personality assessment because they were never taught how it was relevant.

Ironically, at the same time that basic psychometric training is becoming rare, psychometric technology continues to develop apace into daunting techniques that make full use of the increased availability of computer power. These techniques, however, do not always shed unique new light on the substantive phenomena to which they are applied (Wilkinson and the Task Force on Statistical Inference, 1999). The advance of knowledge in the coming decades will be enhanced to the extent that some attention can be redirected from esoteric new technologies back to basic psychometric instruction. Even more so, psychological research will be improved to the degree that faculty in all its subdisciplines become aware that basic training in psychometrics—the essentials of measurement, reliability, and validity—is a crucial part of the preparation of any PhD in psychology.

Relations with Other Subfields

Personality psychology has close conceptual ties to three other subfields.

Clinical Psychology   First, it has a long historical, as well as conceptual, association with clinical psychology; many of the classic personality theorists were and some theorists still are clinical practitioners. A basic issue in this relationship concerns the degree to which psychopathological syndromes are qualitatively distinct phenomena, or extremes on dimensions of normal personality (Krueger et al 2001). The continuity position seems to be winning (Clark et al 1997, Frances 1993).

A particularly persuasive demonstration comes from analyses of a longitudinal sample in New Zealand, which found a close relationship between several aspects of personality and the development of psychopathologies (Krueger et al 2001). In another study, variations in well-being measured by a tool for assessment of clinical depression had important implications for behavior and well-being even in a population where no one was clinically depressed (Furr & Funder 1998). Another piece of evidence comes from a recent study that found the antidepressant paroxetine [related to fluoxetine (Prozac)] reduced levels of negative affect in nondepressed persons who did not have a history of mental disorder either in themselves or their first-degree relatives (Knutson et al 1998). This finding suggests that some treatments aimed at specific disorders such as depression might exert their influence by affecting underlying personality variables (Krueger et al 2001), which may in turn help explain why "antidepressants" like paraoxetine and

fluoxetine are helpful in the treatment of so many putatively different affective and anxiety disorders (Dunner 1998). They may affect a trait or traits that underlie a wide range of psychopathology.

Developmental Psychology   Developmental psychology is the second related subfield. The personality of preverbal children is called temperament, but otherwise the difference between temperament and personality is slight (Caspi & Siva 1995). To the extent that research in developmental and personality psychology can become integrated, the benefits could be substantial for both sides. It would be useful to better understand how adult personality is related to its temperamental precursors (Clark & Watson 1999, Rothbart et al 2000). Also, personality psychology might do well to learn some of developmental psychology's ingenious methods for assessing personality in small persons who will not fill out trait questionnaires.

Social Psychology   Relations with a third related subfield, social psychology, historically have been problematic. Important topics such as the accuracy of personality judgment require research that draws upon both fields (e.g. Funder 1999). Yet many social psychologists still seem to think that an important part of their mission is to teach the world that only situations, and not personality, have an important effect on behavior (Conner 2000). Moreover, it appears as if part of the professional identity of some social psychologists is tied up in an insistence on not using trait measures or any part of conventional psychometric technology, even when their research topics (e.g. individual differences in emotion, self-evaluation, or goal orientation) fall squarely in the personality domain.

There is reason to expect that this attitudinal obstacle to integrating the two fields will be overcome as new generations of psychologists take charge, leaving the debates of their forebears in the unlamented past. In the long run, a hybrid field of personality and social psychology may be in the offing. The advantages and disadvantages of such an outcome depend upon what is gained and lost by each side in the merger. Will schemas become recognized as traits, or will traits be reconceptualized as schemas? Will conventional psychometrics be forgotten by the merged field, only to have to be reinvented by a subsequent generation? Will social psychologists move away from their ingenious simulated microcosms of social situations and creative choices for behavioral dependent variables, towards the seductively convenient administration of questionnaires? Or will both social and personality psychologists add valuable methodological tools to their repertoire, and finally appreciate that concepts from both fields can be fruitfully applied to questions concerning persons, situations, and behaviors?

CONCLUSION

It is not really possible to doubt that personality psychology has an active and productive future. It may revive as an independent field with a separate identity, institutional memory, and research and educational infrastructure, or it may be

absorbed into a hybrid of social psychology, or it may continue on in some other form that cannot presently be anticipated. Under whatever disciplinary flag, however, someone will always ask how individuals are different from each other, how behavior changes, how people perceive, think, and plan, how people experience reality, and even what might be going on in the regions of the mind usually hidden from view (Funder 1998). The basic questions of personality psychology will simply not go away.

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