assess your knowledge FACT OR FICTION?

1. According to Rogers, human nature is inherently positive. **True** / **False**
2. Rogers believed that only severely disturbed individuals acquire conditions of worth. **True** / **False**
3. Maslow argued that almost all self-actualized individuals are sociable and easy to get along with. **True** / **False**
4. Many claims of humanistic models are difficult to falsify. **True** / **False**

Answers: 1. T (p. 559); 2. F (p. 559); 3. F (p. 560); 4. T (p. 560)

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TRAIT MODELS OF PERSONALITY: CONSISTENCIES IN OUR BEHAVIOR

14.8 Describe trait models of personality, including the Big Five.

14.9 Identify key criticisms of trait models.

In contrast to most personality theorists we've reviewed, proponents of trait models are interested primarily in describing and understanding the *structure* of personality. Much like early chemists who strove to identify the elements of the periodic table, trait theorists aim to pinpoint the major traits of personality, which as we've learned are relatively enduring dispositions that affect our behaviors across situations.

Identifying Traits: Factor Analysis

Invoking personality traits as causes of behavior has its challenges. To start with, we must avoid the *circular reasoning fallacy* (see Chapter 1). We might conclude that a child who kicks others on the playground is aggressive. But in asking how we know that this child is aggressive, we might respond "because he kicks other children on the playground." Note that this answer merely restates the same evidence we used to infer that the child was aggressive in the first place. To avoid this logical trap, we need to demonstrate that personality traits predict behaviors in novel situations or correlate with biological or laboratory measures.

From there, we need to narrow down the pool of possible traits. As Gordon Allport observed, there are over 17,000 terms in the English language referring to personality traits: shy, stubborn, impulsive, greedy, cheerful, and so on (Allport & Odbert, 1936). To reduce this enormous diversity of traits to a much smaller of underlying traits, trait theorists use a statistical technique called **factor analysis**. This method analyzes the correlations among responses on personality measures to identify the underlying "factors" that give rise to these correlations.

TABLE 14.7 presents the correlations among six different variables—sociability, popularity, liveliness, risk-taking, sensation seeking, and impulsivity—in a hypothetical

Claiming that a child is "aggressive" merely because he engages in aggressive behavior gives us no new information and is an example of circular reasoning. To be meaningful, personality traits must do more than merely describe behaviors we've already observed.

factor analysis
statistical technique that analyzes the correlations among responses on personality inventories and other measures

TABLE 14.7 An "Eyeball" Factor Analysis of Six Variables. Follow along as we describe this correlation matrix of six personality measures (the 1.00s on the diagonal represent the correlation of each variable with itself, which is a perfect correlation).

	MEASURES					
	VARIABLE 1 SOCIABILITY	VARIABLE 2 POPULARITY	VARIABLE 3 LIVELINESS	VARIABLE 4 RISK-TAKING	VARIABLE 5 SENSATION SEEKING	VARIABLE 6 IMPULSIVITY
Variable 1	1.00	.78	.82	.12	.07	−.03
Variable 2		1.00	.70	.08	.02	.11
Variable 3			1.00	.05	.11	.18
Variable 4				1.00	.69	.85
Variable 5					1.00	.72
Variable 6						1.00

FACTOID

Individuals' handshakes can tell us something about their Big Five personality traits. Research demonstrates that people with firm handshakes tend to be somewhat higher in extraversion and openness to experience, and lower in neuroticism, than people with limp handshakes (Chaplin, 2000).

? Research shows that the Big Five trait of openness to experience predicts art preferences (Feist & Brady, 2004). Which painting above would a person high in openness to experience be most likely to prefer, and why? (See answer upside down on bottom of page.)

Big Five
five traits that have surfaced repeatedly in factor analyses of personality measures

lexical approach
approach proposing that the most crucial features of personality are embedded in our language

Answer: Painting on the top. Openness to experience is correlated with preference for abstract art, probably because this trait is related to unconventionality and tolerance for ambiguity.

correlation matrix: A table of correlations. As we look over this correlation matrix, we'll notice that only some of the cells contain numbers; that's because correlation matrixes present each correlation only once. (That's why, for example, the matrix displays the correlation between variables 1 and 4 only once.) We can see that variables 1 through 3 are highly correlated, as are variables 4 through 6. But these two sets of variables aren't correlated much with one another, so the correlation matrix suggests the presence of two factors. We might call the factor comprising variables 1 through 3 (in blue) "extraversion," and we might call the factor comprising variables 4 through 6 (in green) "fearlessness." The formal technique of factor analysis uses much more rigorous statistical criteria to accomplish the same goal as the "eyeball method" we just walked you through.

The Big Five Model of Personality: The Geography of the Psyche

Although there's no complete consensus among trait theorists regarding the most scientifically supported model of personality structure, one model has amassed an impressive body of research evidence. This model, the **Big Five**, consists of five traits that have surfaced repeatedly in factor analyses of personality measures.

The Big Five were uncovered using a **lexical approach** to personality, which proposes that the most crucial features of human personality are embedded in our language (Goldberg, 1993). The logic here is simple. If a personality trait is important in our daily lives, it's likely that we talk a lot about it. The Big Five emerged from factor analyses of trait terms in dictionaries and works of literature. According to Paul Costa, Robert McCrae, and their collaborators (Costa & McCrae, 1992; Widiger, 2001), these five dimensions are:

- *Openness to Experience,* sometimes just called "Openness"—open people tend to be intellectually curious and unconventional;
- *Conscientiousness*—conscientious people tend to be careful and responsible;
- *Extraversion*—extraverted people tend to be social and lively;
- *Agreeableness*—agreeable people tend to be sociable and easy to get along with; and
- *Neuroticism*—neurotic people tend to be tense and moody.

We can use either of two waterlogged acronyms—OCEAN or CANOE—as a handy mnemonic for remembering the Big Five. According to Big Five advocates, we can use these factors to describe all people, including those with psychological disorders. Each of us occupies some location on all five of these dimensions. A severely depressed person, for example, may be low in Extraversion, high in Neuroticism, and about average on the other three dimensions.

The Big Five appear in people's ratings of personality even when researchers ask participants to describe people they've only seen, not met (Passini & Norman, 1966). This finding suggests that we harbor *implicit personality theories,* that is, intuitive ideas concerning personality traits and their associations with behavior. The popular dating website eHarmony.com uses the Big Five to match prospective partners, although the research evidence for its success is minimal (see Chapter 11). The work of Samuel Gosling and others suggests that the Big Five, plus a sixth trait of dominance, also emerge in studies of chimpanzee personality (Gosling, 2001, 2008; King & Figueredo, 1997), although it's difficult to exclude the possibility that raters in these studies are *anthropomorphizing*—that is, unintentionally imposing their implicit personality theories on chimpanzees.

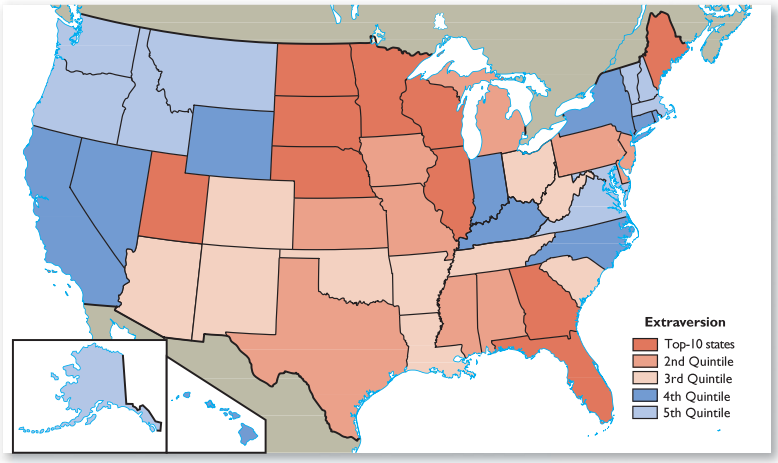
THE BIG FIVE AND BEHAVIOR. The Big Five predict many important real-world behaviors. High Conscientiousness, low Neuroticism, and perhaps high Agreeableness are associated with successful job performance (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991) and grades in school (Conard, 2006; Heaven, Ciarrochi, & Vialle, 2007). In some but not all studies, Extraversion has been positively correlated with successful performance among salespersons (Furnham & Fudge, 2008). Three researchers (Rubenzer, Faschingbauer, & Ones, 2000) asked presidential biographers to rate the U.S. presidents from George

Washington through George W. Bush. Scores on Openness to Experience were correlated positively with independently assessed ratings of presidents' historical greatness. Interestingly, Agreeableness was (slightly) *negatively* correlated with historical greatness, suggesting that the best presidents often aren't always the easiest to get along with. In addition, conscientiousness is positively associated with physical health and even life span (Martin & Friedman, 2000), probably because conscientious people are more likely than others to engage in healthy behaviors, like exercising regularly and avoiding smoking (Bogg & Roberts, 2004).

Are you a dog person or a cat person? Recent research suggests that scores on the Big Five can help predict the answer: Dog people tend to have somewhat higher scores than cat people on extraversion, agreeableness, and conscientiousness, whereas cat people tend to have somewhat higher scores than dog people on neuroticism and openness to experience (Gosling & Sandy, 2010).

CULTURAL INFLUENCES ON THE BIG FIVE In seeking to address enduring questions concerning the cross-cultural relevance of personality, researchers have discovered that the Big Five are identifiable in China, Japan, Italy, Hungary, and Turkey (De Raad et al., 1998; McCrae & Costa, 1997; Triandis & Suh, 2002). Nevertheless, there may be limits to the Big Five's cross-cultural universality. Openness to experience doesn't emerge clearly in all cultures (De Raad et al., 2002) and some investigators have found dimensions in addition to the Big Five. For example, personality studies in China have revealed an additional "Chinese tradition" factor that encompasses aspects of personality distinctive to Chinese culture, including an emphasis on group harmony and saving face to avoid embarrassment (Cheung & Leung, 1998). Moreover, studies in Germany, Finland, and several other countries suggest the presence of a factor comprising honesty and humility in addition to the Big Five (Lee & Ashton, 2004).

Individualism-Collectivism and Personality. Cross-cultural researchers have devoted considerable attention to a key dimension relevant to personality we first encountered in Chapter 10: *individualism-collectivism.* People from largely individualistic cultures, like the United States, tend to focus on themselves and their personal goals, whereas those from largely collectivist cultures, primarily in Asia, tend to focus on their relations with others (Triandis, 1989). People from individualistic cultures usually report higher self-esteem than those from collectivist cultures (Heine et al., 1999). In addition, personality traits may be less predictive of behavior in collectivist than individualistic cultures, probably because people's behavior in collectivist cultures is more influenced by social norms (Church & Katigbak, 2002).



Research by Peter Rentfrow, Samuel Gosling, and Jeff Potter (2008) shows that the Big Five traits differ across geographical regions. Here, for example, is a map of the levels of extraversion across the 50 U.S. states. This research raises intriguing questions: For example, does living in relatively isolated states, like Idaho or Alaska, make one introverted, or are introverted people drawn to living in isolated states?

Still, we shouldn't oversimplify the distinction between individualistic and collectivist cultures. Only about 60 percent of people in individualist cultures possess individualist personalities, and only about 60 percent of people in collectivist cultures possess collectivist personalities (Triandis & Suh, 2002). Furthermore, Asian countries differ markedly in their levels of collectivism, reminding us of the perils of stereotyping and overgeneralization (see Chapter 13). For example, although Chinese are generally more collectivist than Americans, Japanese and Koreans aren't (Oyserman, Coon, & Kemmelmeier, 2002).

ALTERNATIVES TO THE BIG FIVE. The Big Five is a useful system for organizing individual differences in personality. Nevertheless, there's reason to question the lexical approach, as people may not be consciously aware of all important features of personality (J. Block, 1995). As a consequence, our language may not adequately reflect these features. In addition, there's no Big Five factor corresponding to morality (Loevinger, 1993), despite the centrality of this variable to many theories of personality, including those of Freud and his followers. Still other psychologists, like Hans Eysenck (1991), Auke Tellegen (1982), and

C. Robert Cloninger (1987) maintain that three dimensions rather than five offer the most accurate model of personality structure. According to them, the Big Five dimensions of Agreeableness, Conscientiousness, and (low) Openness to Experience combine to form one larger dimension of impulse control or fearfulness along with the dimensions of Extraversion and Neuroticism. The "Big Three" model of personality structure is a worthy alternative to the Big Five (Harkness et al., 2008).

Personality research reveals that prisoners and firefighters tend to receive equally high scores on measures of sensation seeking, suggesting that they may have channeled their basic tendencies into dramatically different characteristic adaptations.

Basic Tendencies versus Characteristic Adaptations

Personality traits don't tell the whole story of why we differ from each other. The story of Jack and Oskar underscores the distinction between *basic tendencies* and *characteristic adaptations* (Harkness & Lilienfeld, 1997; McCrae & Costa, 1995). Basic tendencies are underlying personality traits, whereas characteristic adaptations are their behavioral manifestations. The key point is that people can express their personality traits in dramatically different ways. In Jack and Oskar's case, the same basic tendencies—intense loyalty and devotion to social causes—were expressed in markedly different characteristic adaptations: Jack's Judaism and profound dislike of Germans and Oskar's Nazism and profound dislike of Jews.

Sensation seeking (Zuckerman, 1979), or the tendency to seek out new and exciting stimuli, offers another example of this distinction. High sensation seekers enjoy parachute jumping, sampling spicy foods, and living life in the fast lane. In contrast, low sensation seekers dislike risk, adventure, and novelty; when they go out to eat, they always go to the same restaurant and they always order chicken parmigiana, for example. Interestingly, the average sensation-seeking scores of firefighters and prisoners are essentially identical, but significantly higher than those of average college students (Zuckerman, 1994). Apparently, people can express tendencies toward risk taking and danger seeking in either socially constructive (firefighting) or destructive (crime) outlets. Why some sensation seekers end up in firehouses and others in prisons remains mysterious.

Can Personality Traits Change?

Longitudinal studies (see Chapter 10) demonstrate that prior to age 30, personality traits sometimes change over time. Openness, extraversion, and neuroticism tend to decline a bit from the late teens to early thirties, whereas conscientiousness and agreeableness tend to increase a bit (Costa & McCrae, 1992; Srivastava et al., 2003). Yet studies also show that the levels of most traits don't change much after age 30 and change even less after about age 50 (McCrae & Costa, 1994; Roberts & DelVecchio, 2000). We don't know whether psychotherapy can change personality, although many psychologists today are even less optimistic about this prospect than they were in Freud's day.

In the best seller *Listening to Prozac*, Peter Kramer (1993) sparked interest in the possibility that medication can change personality traits. He coined the term *cosmetic psychopharmacology* to describe the use of medications to produce long-term alterations in personality. According to Kramer, there's anecdotal evidence that certain mood-altering medications, like Prozac, Paxil, and Zoloft (see Chapter 16), produce calmness and decreased shyness, even among people without mental illness (Concar, 1994). He argued that these drugs may allow us to become "better than well." Although the evidence is preliminary, the results of one study demonstrate that well-adjusted people who ingest Paxil experience less hostility and more interest in socializing than those who ingested a placebo (Knutson et al., 1988). In a more recent study, Paxil—compared with a placebo—increased levels of extraversion and decreased levels of neuroticism among people with clinical depression (Tang et al., 2009).

Kramer's arguments raise intriguing scientific, practical, and ethical questions. On the scientific side, might our personalities, which we think of as being an intrinsic part of ourselves, be more malleable than we supposed? On the practical and ethical sides, could cosmetic psychopharmacology have any important disadvantages? As we learned in Chapter 11, evolutionary psychologists argue that many emotions serve essential adaptive

functions. Anxiety, for example, may be a crucial warning signal of potential danger. If we reduced most people's anxiety levels, could we inadvertently produce a civilization of passive citizens blissfully unconcerned about impending disaster? Although this alarmist scenario seems unlikely in anything other than a science fiction thriller, it's clear that cosmetic psychopharmacology poses significant challenges that have yet to be resolved.

Trait Models Evaluated Scientifically

Trait theory was highly influential through the early and mid-twentieth century. Then in a bombshell 1968 book, *Personality and Assessment,* Walter Mischel called the very notion of personality traits into question, embroiling the field of trait psychology in heated controversy for over a decade.

WALTER MISCHEL'S ARGUMENT: BEHAVIORAL INCONSISTENCY. As we noted earlier, psychologists had long assumed that traits influence behavior across many situations. But in his review of the literature, Mischel found low correlations among different behaviors presumed to reflect the same trait. For example, he cited a study by Hugh Hartschorne and Mark May (1928) that had examined the correlations among behavioral indicators of honesty among children. Hartschorne and May concocted situations that allowed children to behave either honestly or dishonestly, giving them the opportunity to steal a dime, change answers on an exam, and lie. Surprisingly, the correlations among children's behavior across these situations were low, with none exceeding .30. So children who steal, for example, aren't much more likely than other children to cheat. Numerous researchers have reported similar findings in adults for such traits as dependency, friendliness, and conscientiousness (Bem & Allen, 1974; Diener & Larson, 1984; Mischel, 1968). People, it seems, aren't nearly as consistent across situations as most of us believe.

Mischel concluded that measures of personality aren't especially helpful for what they were designed to do—forecast behavior. Some psychologists later tried to explain our persistent belief in the predictive power of personality traits in terms of our cognitive biases, especially the fundamental attribution error (see Chapter 13). For them, we "see" people's personalities all around us because we mistake situational influences on their behavior, such as peer pressure, for personality influences (Bem & Allen, 1974; Ross & Nisbett, 1991). Explore

Explore Mischel's Theory of Personality on mypsychlab.com

PERSONALITY TRAITS REBORN: PSYCHOLOGISTS RESPOND TO MISCHEL. Were Mischel's criticisms valid? Yes and no. As Seymour Epstein (1979) noted, Mischel was correct that personality traits aren't highly predictive of isolated behaviors, such as lying or cheating in a single situation. Nevertheless, in several studies Epstein showed that personality traits are often highly predictive of *aggregated* behaviors, that is, composites of behavior averaged across many situations. If we use a measure of extraversion to predict whether our friend will attend a party next Saturday night, we'll probably do only slightly better than chance. In contrast, if we use this measure to predict our friend's behavior across an average of many situations—attendance at parties, friendliness in small seminars, and willingness to engage in conversations with strangers—we'll probably do rather well. Contrary to Mischel's initial conclusions, personality traits can be useful for predicting overall behavioral trends—such as whether someone will be a responsible employee or a difficult marital partner (Kenrick & Funder, 1988; Rushton, Brainerd, & Presley, 1983; Tellegen, 1991).

In contrast to other personality theories we've reviewed, trait models are primarily efforts to *describe* individual differences in personality rather than to *explain* their causes. This emphasis on description is both a strength and a weakness. On the one hand, these models have advanced our understanding of personality structure and helped psychologists to predict performance in jobs, even the job of leader of the world's largest superpower. On the other hand, some trait models don't provide much insight into the causes of personality. Although the Big Five, for example, do a decent job of capturing personality differences among people, they don't shed much light on the origins of these differences.

Some researchers, like Hans Eysenck, have tried to remedy this shortcoming. For example, according to Eysenck (1973), the personality dimension of extraversion–introversion is produced by differences in the threshold of arousal of the reticular activating system (RAS). As we learned in Chapter 3, the RAS controls alertness and is responsible for keeping us awake. If your RAS is still functioning at this late point in the chapter, you might be wondering how RAS activity is related to extraversion and introversion. Although the following hypothesis is paradoxical, Eysenck argued that extraverts have an *underactive* RAS: They're habitually underaroused and bored. So they seek out stimulation, including other people, to jack up their arousal (recall the Yerkes-Dodson law from Chapter 11). In contrast, introverts tend to have an overactive RAS: They're habitually overaroused, and try to minimize or shut out stimulation, again including other people. Interestingly, extraverts, unlike introverts, prefer loud to soft music (Geen, 1984; Kageyama, 1999). Although the evidence for Eysenck's hypothesis isn't entirely consistent (Gray, 1981; Matthews & Gilliland, 1999), his theorizing demonstrates that trait theories can generate fruitful hypotheses concerning the relations between personality traits and biological variables.

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assess your knowledge FACT OR FICTION?

1. One limitation of the Big Five model is that researchers have identified these traits only in American culture. **True / False**
2. Research demonstrates that after late childhood, the levels of most personality traits virtually never change over the life span. **True / False**
3. Personality traits typically predict behavior in a single situation with high levels of accuracy. **True / False**
4. According to Eysenck, extraverts tend to be less aroused than introverts. **True / False**

Answers: 1. F (p. 563); 2. F (p. 564); 3. F (p. 565); 4. T (p. 566)

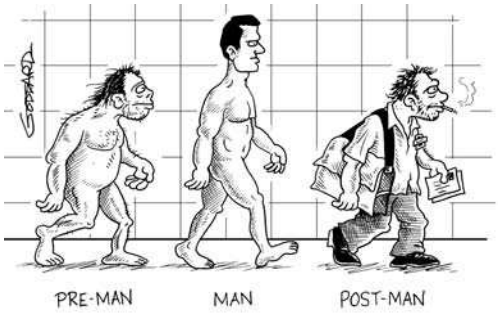
PERSONALITY ASSESSMENT: MEASURING AND MISMEASURING THE PSYCHE

14.10 Describe structured personality tests, such as the MMPI-2, and their methods of construction.

14.11 Describe projective tests, particularly the Rorschach, and their strengths and weaknesses.

14.12 Identify common pitfalls in personality assessment.

Personality wouldn't be helpful to psychologists if they had no way of measuring it. That's where personality assessment enters into the picture: It offers us the promise of detecting individual differences in personality in a scientifically rigorous fashion. But developing accurate tools to measure personality is easier said than done.



Traditional beliefs persist that those with protruding foreheads and low brow lines are less intelligent or cultured than other people. (© Clive Goddard/www.CartoonStock.com)

falsifiability
CAN THE CLAIM BE DISPROVED?

Famous—and Infamous—Errors in Personality Assessment

Indeed, personality psychology has long been plagued by a parade of dubious assessment methods. Phrenology, which we encountered in Chapter 3, purported to detect people's personality traits by measuring the patterns of bumps on their heads. Related to phrenology was *physiognomy,* popular in the 18th and 19th centuries, which claimed to detect people's personality traits from their facial characteristics (Collins, 1999). The term "lowbrow," which today refers to someone who's uncultured, derives from the old belief that most nonintellectual people have protruding foreheads and a low brow line. This claim, like virtually all other claims of physiognomy, has been falsified. Still, physiognomy may contain a tiny kernel of truth. Research suggests that women do better than chance at figuring out which men are most interested in children merely by looking at still photographs of their faces (Roney et al., 2006), although it's not clear to which features of men's faces observers