



Costa

Thomas was at a local bar with a few long-time friends, but one of them—Samuel—said something that really upset Thomas, who had had one too many to drink. Thomas stood up, pushed Samuel, and started a fight then and there. Clarisse, a friend of Samuel's, pulled Thomas off before anyone got seriously hurt. Clarisse didn't know Thomas well but was absolutely convinced that he was an aggressive, impulsive jerk and told Thomas as much as the three went storming out of the bar. Samuel, surprisingly, came to Thomas's defense and said "You know, Thomas is really a good guy. That wasn't like him—he must have been having a rough day. Give him a break."

Is Thomas an aggressive jerk or just having a rough day? Can we say Thomas is aggressive and impulsive without knowing anything else about Thomas's personality? Is this the way he normally is? What about when he is not drunk? Does he act aggressively and impulsively in other situations? Does the situation (rough day) explain best how Thomas acted or is it more accurate to explain his actions by his personality (aggressive jerk)?

These are the kinds of questions that psychologists ask. Social psychologists are likely to explain Thomas's behavior by the situation (rough day). Personality psychologists are more likely to attribute Thomas's behavior to enduring traits. A trait, as you recall from the opening chapter, makes people unique and contributes to the consistency of how they behave in different situations and over time. Traits are the focus of study of many personality psychologists, but historically different psychologists had their own particular list of personality traits they focused on and there was little consensus as to what the major dimensions of personality were. This was at least the case until the 1980s when the field converged on an answer: there are five major dimensions of personality, namely extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These are the so-called "Big Five" traits of personality and their widespread adoption and acceptance owes much to the research and theory of Robert McCrae and Paul Costa.

Overview of Trait and Factor Theories

How can personality best be measured? By standardized tests? Clinical observation? Judgments of friends and acquaintances? Factor theorists have used all these methods and more. A second question is: How many traits or personal dispositions does a single person possess? Two or three? Half a dozen? A couple of hundred? More than a thousand? During the past 25 to 45 years, several individuals (Cattell, 1973, 1983; Eysenck, 1981, 1997a) and several teams of researchers (Costa & McCrae, 1992; McCrae & Costa, 2003; Tupes & Christal, 1961) have taken a factor analytic approach to answering these questions. Presently, most researchers who study personality traits agree that five, and only five, and no fewer than five dominant traits continue to emerge from factor analytic techniques—mathematical procedures capable of sifting personality traits from mountains of test data.

Whereas many contemporary theorists believe that five is the magic number, earlier theorists such as Raymond B. Cattell found many more personality traits, and Hans J. Eysenck insisted that only three major factors can be discerned by a factor analytic approach. In addition, we have seen that Gordon Allport's (see Chapter 12) commonsense approach yielded 5 to 10 traits that are central to each

person's life. However, Allport's major contribution to trait theory may have been his identification of nearly 18,000 trait names in an unabridged English language dictionary. These trait names were the basis for Cattell's original work, and they continue to provide the foundation for recent factor analytic studies.

The Five-Factor Theory (often called the Big Five) includes neuroticism and extraversion; but it adds openness to experience, agreeableness, and conscientiousness. These terms differ slightly from research team to research team, but the underlying traits are quite similar.

The Pioneering Work of Raymond B. Cattell

An important figure in the early years of psychometrics was Raymond B. Cattell (1905–1998), who was born in England but who spent most of his career in the United States. Cattell had only an indirect influence on McCrae and Costa. They did, however, share techniques and ideas, even if their approaches also had some real differences. Because some familiarity with Cattell's trait theory enhances the understanding of McCrae and Costa's five-factor theory, we briefly discuss Cattell's work and compare and contrast it with that of McCrae and Costa.

First, Cattell and McCrae and Costa both used an **inductive method** of gathering data; that is, they began with no preconceived bias concerning the number or name of traits or types. Other factor theorists, however, have used the **deductive method**, that is, they have preconceived hypotheses in mind before they begin to collect data.

Second, Cattell used three different media of observation to examine people from as many angles as possible. The three sources of data included a person's life record (L data) derived from observations made by other people; self-reports (Q data) obtained from questionnaires and other techniques designed to allow people to make subjective descriptions of themselves; and objective tests (T data), which measure performance such as intelligence, speed of responding, and other such activities designed to challenge people's maximum performance. In contrast, each of McCrae and Costa's five bipolar factors is limited to responses on questionnaires. These self-reports confine McCrae and Costa's procedures to personality factors.

Third, Cattell divided traits into *common traits* (shared by many) and *unique traits* (peculiar to one individual). He also distinguished *source traits* from trait indicators, or *surface traits*. Cattell further classified traits into *temperament*, *motivation*, and *ability*. Traits of temperament are concerned with *how* a person behaves, motivation deals with *why* one behaves, and ability refers to *how far* or *how fast* one can perform.

Fourth, Cattell's multifaceted approach yielded 35 primary, or first-order, traits, which measure mostly the temperament dimension of personality. Of these factors, 23 characterize the normal population and 12 measure the pathological dimension. The largest and most frequently studied of the normal traits are the 16 personality factors found on Cattell's (1949) Sixteen Personality Factors Questionnaire (16 PF Scale). By comparison, the NEO-Personality Inventory of Costa and McCrae yields scores on only five personality factors.

Basics of Factor Analysis

A comprehensive knowledge of the mathematical operations involved in **factor analysis** is not essential to an understanding of trait and factor theories of personality, but a general description of this technique should be helpful.

To use factor analysis, one begins by making specific observations of many individuals. These observations are then quantified in some manner; for example, height is measured in inches; weight in pounds; aptitude in test scores; job performance by rating scales; and so on. Assume that we have 1,000 such measures on 5,000 people. Our next step is to determine which of these variables (scores) are related to which other variables and to what extent. To do this, we calculate the **correlation coefficient** between each variable and each of the other 999 scores. (A correlation coefficient is a mathematical procedure for expressing the degree of correspondence between two sets of scores.) To correlate 1,000 variables with the other 999 scores would involve 499,500 individual correlations (1,000 multiplied by 999 divided by 2). Results of these calculations would require a table of intercorrelations, or a *matrix*, with 1,000 rows and 1,000 columns. Some of these correlations would be high and positive, some near zero, and some would be negative. For example, we might observe a high positive correlation between leg length and height, because one is partially a measure of the other. We may also find a positive correlation between a measure of leadership ability and ratings on social poise. This relationship might exist because they are each part of a more basic underlying trait—self-confidence.

With 1,000 separate variables, our table of intercorrelations would be quite cumbersome. At this point, we turn to *factor analysis*, which can account for a large number of variables with a smaller number of more basic dimensions. These more basic dimensions can be called *traits*, that is, factors that represent a cluster of closely related variables. For example, we may find high positive intercorrelations among test scores in algebra, geometry, trigonometry, and calculus. We have now identified a cluster of scores that we might call Factor M, which represents mathematical ability. In similar fashion, we can identify a number of other factors, or units of personality derived through factor analysis. The number of factors, of course, will be smaller than the original number of observations.

Our next step is to determine the extent to which each individual score contributes to the various factors. Correlations of scores with factors are called **factor loadings**. For example, if scores for algebra, geometry, trigonometry, and calculus contribute highly to Factor M but not to other factors, they will have high factor loadings on M. Factor loadings give us an indication of the purity of the various factors and enable us to interpret their meanings.

Traits generated through factor analysis may be either unipolar or bipolar. **Unipolar traits** are scaled from zero to some large amount. Height, weight, and intellectual ability are examples of unipolar traits. In contrast, **bipolar traits** extend from one pole to an opposite pole, with zero representing a midpoint. Introversion versus extraversion, liberalism versus conservatism, and social ascendancy versus humility are examples of bipolar traits.

In order for mathematically derived factors to have psychological meaning, the axes on which the scores are plotted are usually turned or *rotated* into a specific mathematical relationship with each other. This rotation can be either orthogonal

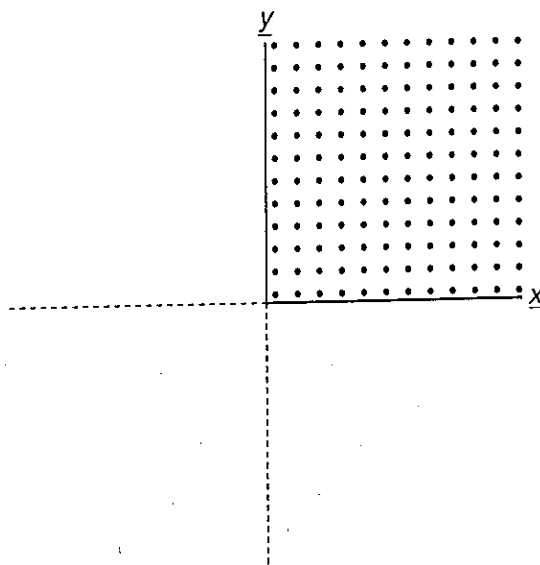


FIGURE 13.1 Orthogonal axes

or oblique, but advocates of the Five-Factor Theory favor the **orthogonal rotation**. Figure 13.1 shows that orthogonally rotated axes are at right angles to each other. As scores on the x variable increase, scores on the y axis may have any value; that is, they are completely unrelated to scores on the x axis.

The **oblique method**, which was advocated by Cattell, assumes some positive or negative correlation and refers to an angle of less than or more than 90° . Figure 13.2

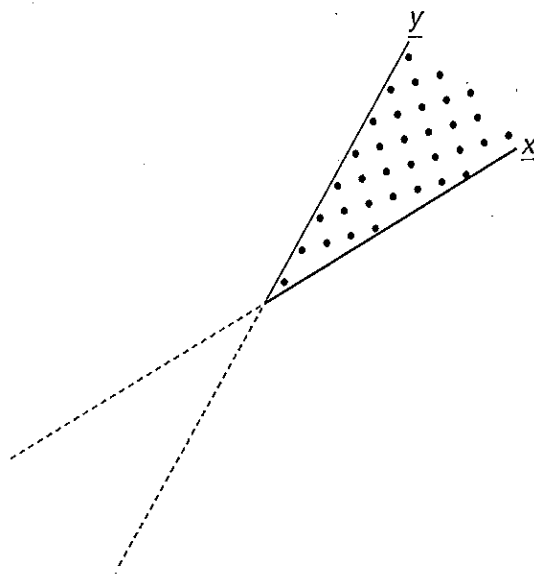


FIGURE 13.2 Oblique axes

depicts a scattergram of scores in which x and y are positively correlated with one another; that is, as scores on the x variable increase, scores on the y axis have a tendency also to increase. Note that the correlation is not perfect; some people may score high on the x variable but relatively low on y and vice versa. A perfect correlation ($r = 1.00$) would result in x and y occupying the same line. Psychologically, orthogonal rotation usually results in only a few meaningful traits, whereas oblique methods ordinarily produce a larger number.

The Big Five: Taxonomy or Theory?

In Chapter 1, we defined a taxonomy as a classification of things according to their natural relationships. We also suggested that taxonomies are an essential starting point for the advance of science, but that they are not theories. Whereas theories generate research, taxonomies merely supply a classification system.

In the following discussion of McCrae and Costa's Five-Factor Model (FFM), we will see that their work began as an attempt to identify basic personality traits as revealed by factor analysis. This work soon evolved into a taxonomy and the *Five-Factor Model*. After much additional work, this model became a theory, one that can both *predict* and *explain* behavior.

Biographies of Robert R. McCrae and Paul T. Costa, Jr.

Robert Roger McCrae was born April 28, 1949 in Maryville, Missouri, a town of 13,000 people located about 100 miles north of Kansas City. Maryville is home to Northwest Missouri State, the town's largest employer. McCrae, the youngest of three children born to Andrew McCrae and Eloise Elaine McCrae, grew up with an avid interest in science and mathematics. By the time he entered Michigan State University, he had decided to study philosophy. A National Merit Scholar, he nevertheless was not completely happy with the open-ended and non-empirical nature of philosophy. After completing his undergraduate degree, he entered graduate school at Boston University with a major in psychology. Given his inclination and talent for math and science, McCrae found himself intrigued by the psychometric work of Raymond Cattell. In particular, he became curious about using factor analysis to search for a simple method for identifying the structural traits found in the dictionary. At Boston University, McCrae's major professor was Henry Weinberg, a clinical psychologist with only a peripheral interest in personality traits. Hence, McCrae's interest in traits had to be nourished more internally than externally.

During the 1960s and 1970s, Walter Mischel (see Chapter 18) was questioning the notion that personality traits are consistent, claiming that the situation is more important than any personality trait. Although Mischel has since revised his stance on the consistency of personality, his views were accepted by many psychologists during those years. In a personal communication dated May 4, 1999, McCrae wrote: "I attended graduate school in the years after Mischel's (1968) critique of trait psychology. Many psychologists at the time were prepared to believe that traits were nothing but response sets, stereotypes, or cognitive fictions."

That never made any sense to me, and my early research experience showing remarkable stability in longitudinal studies encouraged the belief that traits were real and enduring." Nevertheless, McCrae's work on traits while in graduate school was a relatively lonely enterprise, being conducted quietly and without much fanfare. As it turns out, this quiet approach was well-suited to his own relatively quiet and introverted personality.

In 1975, 4 years into his PhD program, McCrae's destiny was about to change. He was sent by his advisor to work as a research assistant with James Fozard, an adult developmental psychologist at the Normative Aging Study at the Veterans Administration Outpatient Clinic in Boston. It was Fozard who referred McCrae to another Boston-based personality psychologist, Paul T. Costa Jr., who was on the faculty at University of Massachusetts at Boston.

After McCrae completed his PhD in 1976, Costa hired him as project director and co-principal investigator for his Smoking and Personality Grant. McCrae and Costa worked together on this project for 2 years, until they both were hired by the National Institute on Aging's Gerontology Research Center, a division of the National Institutes of Health (NIH) housed in Baltimore. Costa was hired as the chief of the section on stress and coping, whereas McCrae took the position as senior staff fellow. Because the Gerontology Research Center already had large, well-established datasets of adults, it was an ideal place for Costa and McCrae to investigate the question of how personality is structured. During the 1970s, with the shadow of Mischel's influence still hanging heavily over the study of personality and with the concept of traits being nearly a taboo subject, Costa and McCrae conducted work on traits that ensured them a prominent role in the 40-year history of analyzing the structure of personality.

Paul T. Costa, Jr. was born September 16, 1942 in Franklin, New Hampshire, the son of Paul T. Costa, Sr. and Esther Vasil Costa. He earned his undergraduate degree in psychology at Clark University in 1964 and both his master's (1968) and PhD (1970) in human development from the University of Chicago. His longstanding interests in individual differences and the nature of personality increased greatly in the stimulating intellectual environment at the University of Chicago. While at Chicago, he worked with Salvatore R. Maddi, with whom he published a book on humanistic personality theory (Maddi & Costa, 1972). After receiving his PhD, he taught for 2 years at Harvard and then from 1973 to 1978 at University of Massachusetts-Boston. In 1978, he began working at the National Institute of Aging's Gerontology Research Center, becoming the chief for the Section on Stress and Coping and then in 1985 chief for the Laboratory of Personality & Cognition. That same year, 1985, he became president of Division 20 (Adult Development and Aging) of the American Psychological Association. Among his other list of accomplishments are fellow of American Psychological Association in 1977 and president of International Society for the Study of Individual Differences in 1995. Costa and his wife, Karol Sandra Costa, have three children, Nina, Lora, and Nicholas.

The collaboration between Costa and McCrae has been unusually fruitful, with well over 200 co-authored research articles and chapters, and several books, including *Emerging Lives, Enduring Dispositions* (McCrae & Costa, 1984), *Personality in Adulthood: A Five-Factor Theory Perspective*, 2nd ed. (McCrae & Costa, 2003), and Revised NEO Personality Inventory (Costa & McCrae, 1992).

In Search of the Big Five

The study of traits was first begun by Allport and Odbert in the 1930s and continued by Cattell in the 1940s and by Tupes, Christal, and Norman in the 1960s (see John & Srivastava, 1999, for a historical review of the Five-Factor Model, or the Big-Five).

In the late 1970s and early 1980s, Costa and McCrae, like most other factor researchers, were building elaborate taxonomies of personality traits, but they were not using these classifications to generate testable hypotheses. Instead, they were simply using factor analytic techniques to examine the stability and structure of personality. During this time, Costa and McCrae focused initially on the two main dimensions of neuroticism and extraversion.

Almost immediately after they discovered N and E, Costa and McCrae found a third factor, which they called openness to experience. Most of Costa and McCrae's early work remained focused on these three dimensions (see, for example, Costa & McCrae, 1976; Costa, Fozard, McCrae, & Bosse, 1976). Although Lewis Goldberg had first used the term "Big Five" in 1981 to describe the consistent findings of factor analyses of personality traits, Costa and McCrae continued their work on the three factors.

Five Factors Found

As late as 1983, McCrae and Costa were arguing for a three-factor model of personality. Not until 1985 did they begin to report work on the five factors of personality. This work culminated in their new five-factor personality inventory: the NEO-PI (Costa & McCrae, 1985). The NEO-PI was a revision of an earlier unpublished personality inventory that measured only the first three dimensions; N, E, and O. In the 1985 inventory, the last two dimensions—agreeableness and conscientiousness—were still the least well-developed scales, having no subscales associated with them. Costa and McCrae (1992) did not fully develop the A and C scales until the Revised NEO-PI appeared in 1992.

Throughout the 1980s, McCrae and Costa (1985, 1989) continued their work of factor analyzing most every other major personality inventory, including the *Myers-Briggs Type Indicator* (Myers, 1962) and the *Eysenck Personality Inventory* (H. Eysenck & S. Eysenck, 1975, 1993). For instance, in a direct comparison of their model with Eysenck's inventory, Costa and McCrae reported that Eysenck's first two factors (N and E) are completely consistent with their first two factors. Eysenck's measure of psychoticism mapped onto the low ends of agreeableness and conscientiousness but did not tap into openness (McCrae & Costa, 1985).

At that time, there were two major and related questions in personality research. First, with the dozens of different personality inventories and hundreds of different scales, how was a common language to emerge? Everyone had his or her own somewhat idiosyncratic set of personality variables, making comparisons between studies and cumulative progress difficult. Indeed, as Eysenck (1991a) wrote:

Where we have literally hundreds of inventories incorporating thousands of traits, largely overlapping but also containing specific variance, each empirical finding is strictly speaking only relevant to a specific trait. This is not the way to build a unified scientific discipline. (p. 786)

Second, what is the structure of personality? Cattell argued for 16 factors, Eysenck for three, and many others were starting to argue for five. The major accomplishment of the Five-Factor Model (FFM) has been to provide answers to both these questions.

Since the late 1980s and early 1990s, most personality psychologists have opted for the Five-Factor Model (Digman, 1990; John & Srivastava, 1999). The five factors have been found across a variety of cultures, using a plethora of languages (McCrae & Allik, 2002). In addition, the five factors show some permanence with age; that is, adults—in the absence of catastrophic illness such as Alzheimer's—tend to maintain the same personality structure as they grow older (McCrae & Costa, 2003). These findings prompted McCrae and Costa (1996) to write that “the facts about personality are beginning to fall into place” (p. 78). Or as McCrae and Oliver John (1992) insisted, the existence of five factors “is an empirical fact, like the fact that there are seven continents or eight American presidents from Virginia” (p. 194). (Incidentally, it is not an empirical fact that this earth has seven continents: Most geographers count only six.)

Description of the Five Factors

McCrae and Costa agreed with Eysenck that personality traits are bipolar and follow a bell-shaped distribution. That is, most people score near the middle of each trait, with only a few people scoring at the extremes. How can people at the extremes be described?

Neuroticism (N) and extraversion (E) are the two strongest and most ubiquitous personality traits, and Costa and McCrae conceptualize in much the same way as Eysenck defined them. People who score high on *neuroticism* tend to be anxious, temperamental, self-pitying, self-conscious, emotional, and vulnerable to stress-related disorders. Those who score low on N are usually calm, even-tempered, self-satisfied, and unemotional.

People who score high on *extraversion* tend to be affectionate, jovial, talkative, joiners, and fun-loving. In contrast, low E scorers are likely to be reserved, quiet, loners, passive, and lacking the ability to express strong emotion (see Table 13.1).

Openness to experience distinguishes people who prefer variety from those who have a need for closure and who gain comfort in their association with familiar people and things. People who consistently seek out different and varied experiences would score high on openness to experience. For example, they enjoy trying new menu items at a restaurant or they like searching for new and exciting restaurants. In contrast, people who are not open to experiences will stick with a familiar item, one they know they will enjoy. People high on openness also tend to question traditional values, whereas those low on openness tend to support traditional values and to preserve a fixed style of living. In summary, people high on openness are generally creative, imaginative, curious, and liberal and have a preference for variety. By contrast, those who score low on openness to experience are typically conventional, down-to-earth, conservative, and lacking in curiosity.

The *Agreeableness Scale* distinguishes soft-hearted people from ruthless ones. People who score in the direction of agreeableness tend to be trusting, generous, yielding, acceptant, and good-natured. Those who score in the other direction are generally suspicious, stingy, unfriendly, irritable, and critical of other people.

TABLE 13.1

Costa and McCrae's Five-Factor Model of Personality

Extraversion	High Scores	Low Scores
	affectionate joiner talkative fun loving active passionate	reserved loner quiet sober passive unfeeling
Neuroticism	High Scores	Low Scores
	anxious temperamental self-pitying self-conscious emotional vulnerable	calm even-tempered self-satisfied comfortable unemotional hardy
Openness	High Scores	Low Scores
	imaginative creative original prefers variety curious liberal	down-to-earth uncreative conventional prefers routine uncurious conservative
Agreeableness	High Scores	Low Scores
	softhearted trusting generous acquiescent lenient good-natured	ruthless suspicious stingy antagonistic critical irritable
Conscientiousness	High Scores	Low Scores
	conscientious hardworking well-organized punctual ambitious persevering	negligent lazy disorganized late aimless quitting

The fifth factor—*conscientiousness*—describes people who are ordered, controlled, organized, ambitious, achievement focused, and self-disciplined. In general, people who score high on C are hardworking, conscientious, punctual, and persevering. In contrast, people who score low on conscientiousness tend to be disorganized, negligent, lazy, and aimless and are likely to give up when a project becomes

difficult. Together these dimensions make up the personality traits of the five-factor model, often referred to as the "Big Five" (Goldberg, 1981).

Evolution of the Five-Factor Theory

Originally, the five factors constituted nothing more than a taxonomy, a classification of basic personality traits. By the late 1980s, Costa and McCrae became confident that they and other researchers had found a stable structure of personality. That is, they had answered the first central question of personality: What is the structure of personality? This advance was an important milestone for personality traits. The field now had a commonly agreed-on language for describing personality, and it was in five dimensions. Describing personality traits, however, is not the same as explaining them. For explanation, scientists need theory, and that was the next project for McCrae and Costa.

McCrae and Costa (1996) objected to earlier theories as relying too heavily on clinical experiences and on armchair speculation. By the 1980s, the rift between classical theories and modern research-based theories had become quite pronounced. It had become clear to them that "the old theories cannot simply be abandoned: They must be replaced by a new generation of theories that grow out of the conceptual insights of the past and the empirical findings of contemporary research" (p. 53). Indeed, this tension between the old and new was one of the driving forces behind Costa and McCrae's development of an alternative theory, one that went beyond the five-factor taxonomy.

What then is the alternative? What could a modern trait theory do that was missing from the classic theories? According to McCrae and Costa, first and foremost, a new theory should be able to incorporate the change and growth of the field that has occurred over the last 25 years as well as be grounded in the current empirical principles that have emerged from research.

For 25 years, Costa and McCrae had been at the forefront of contemporary personality research, developing and elaborating on the Five-Factor Model. According to McCrae and Costa (1999), "neither the model itself nor the body of research findings with which it is associated constitutes a theory of personality. A theory organizes findings to tell a coherent story, to bring into focus those issues and phenomena that can and should be explained" (pp. 139–140). Earlier, McCrae and Costa (1996, p. 78) had stated that "the facts about personality are beginning to fall into place. Now is the time to begin to make sense of them." In other words, it was time to turn the Five-Factor Model (taxonomy) into a Five-Factor Theory (FTT).

Units of the Five-Factor Theory

In the personality theory of McCrae and Costa (1996, 1999, 2003), behavior is predicted by an understanding of three central or core components and three peripheral ones. The three central components include (1) basic tendencies, (2) characteristic adaptations, and (3) self-concept.

Core Components of Personality

In Figure 13.3, the central or core components are represented by rectangles, whereas the peripheral components are represented by ellipses. The arrows represent dynamic

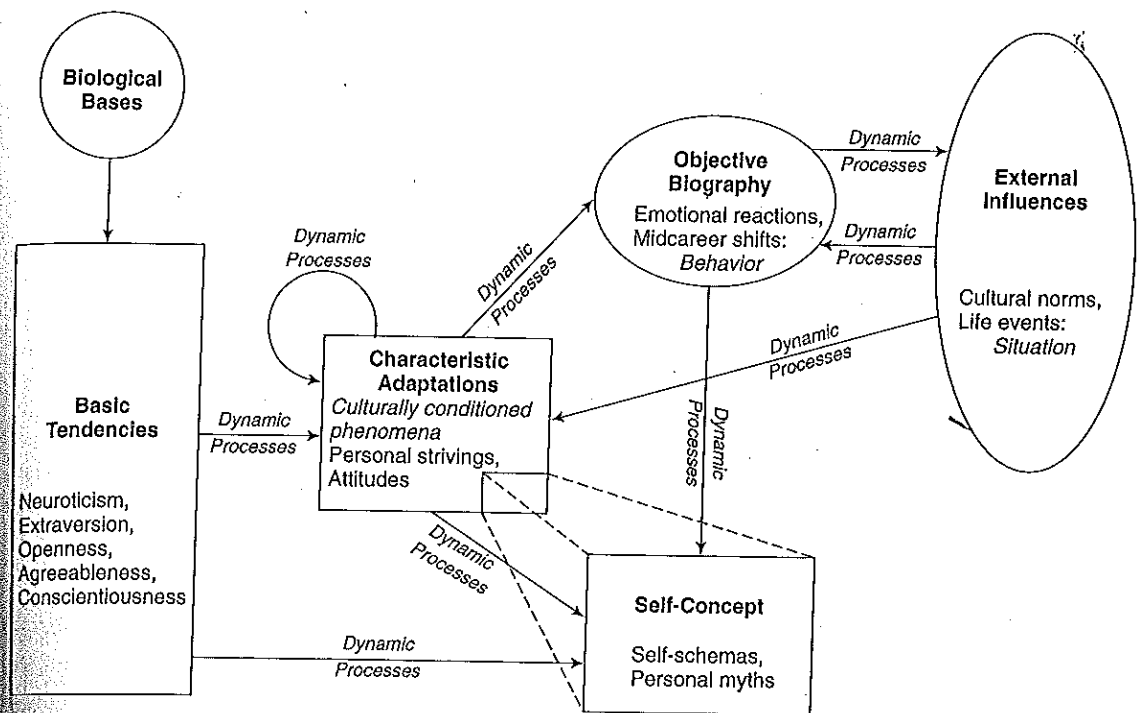


FIGURE 13.3 Operation of the personality system according to FFT. Arrows indicate the direction of causal influences, which operate through dynamic processes. Adapted from McCrae and Costa (1996).

processes and indicate the direction of causal influence. For example, objective biography (life experiences) is the outcome of characteristic adaptations as well as external influences. Also, biological bases are the sole cause of basic tendencies (personality traits). The personality system can be interpreted either cross-sectionally (how the system operates at any given point in time) or longitudinally (how we develop over the lifetime). Moreover, each causal influence is dynamic, meaning that it changes over time.

Basic Tendencies As defined by McCrae and Costa (1996), **basic tendencies** are one of the central components of personality, along with characteristic adaptations, self-concept, biological bases, objective biography, and external influences. McCrae and Costa defined basic tendencies as

the universal raw material of personality capacities and dispositions that are generally inferred rather than observed. Basic tendencies may be inherited, imprinted by early experience or modified by disease or psychological intervention, but at any given period in an individual's life, they define the individual's potential and direction. (pp. 66, 68)

In earlier versions of their theory, McCrae and Costa (1996) made it clear that many different elements make up basic tendencies. In addition to the five stable personality traits, these basic tendencies include cognitive abilities, artistic talent, sexual orientation, and the psychological processes underlying acquisition of language.

In most of their later publications, McCrae and Costa (1999, 2003) focused almost exclusively on the personality traits: more specifically, the five dimensions (N, E, O, A, and C) described in detail above (see Table 13.1). The essence of basic tendencies is their basis in biology and their stability over time and situation.

Characteristic Adaptations Core components of Five-Factor Theory include the characteristic adaptations, that is, acquired personality structures that develop as people adapt to their environment. The principal difference between basic tendencies and characteristic adaptations is their flexibility. Whereas basic tendencies are quite stable, characteristic adaptations can be influenced by external influences, such as acquired skills, habits, attitudes, and relationships that result from the interaction of individuals with their environment. McCrae and Costa (2003) explained the relationship between basic tendencies and characteristic adaptations, saying that the heart of their theory "is the distinction between basic tendencies and characteristic adaptations, precisely the distinction that we need to explain the stability of personality" (p. 187).

All acquired and specific skills, such as the English language or statistics, are characteristic adaptations. How quickly we learn (talent, intelligence, aptitude) is a basic tendency; what we learn is a characteristic adaptation. Moreover, our dispositions and tendencies are the direct influence on our characteristic adaptations. Characteristic responses are shaped and molded by basic tendencies. What makes them characteristic is their consistency and uniqueness; hence, they reflect the operation of enduring personality traits. Echoing Allport, they are adaptations because they are shaped as a response to what the environment has to offer us at any given moment. They allow us to fit into or adapt to our environment on an ongoing basis.

Understanding how characteristic adaptations and basic tendencies interact is absolutely central to the FFT. Basic tendencies are stable and enduring whereas characteristic adaptations fluctuate, making them subject to change over a person's lifetime. Characteristic adaptations differ from culture to culture. For instance, the expression of anger in the presence of a superior is much more taboo in Japan than it is in the United States. Distinguishing between stable tendencies and changing adaptations is important because this distinction can explain both the stability of personality and the plasticity of personality. Thus, McCrae and Costa have provided a solution to the problem of stability versus change in personality structure. Basic tendencies are stable, while characteristic adaptations fluctuate.

Self-Concept McCrae and Costa (2003) explain that self-concept is actually a characteristic adaptation (see Figure 13.3), but it gets its own box because it is such an important adaptation. McCrae and Costa (1996) wrote that it "consists of knowledge, views, and evaluations of the self, ranging from miscellaneous facts of personal history to the identity that gives a sense of purpose and coherence to life" (p. 70). The beliefs, attitudes, and feelings one has toward oneself are characteristic adaptations in that they influence how one behaves in a given circumstance. For example, believing that one is an intelligent person makes one more willing to put oneself into situations that are intellectually challenging.

Does self-concept need to be accurate? Learning theorists such as Albert Bandura (Chapter 17) and humanistic theorists such as Carl Rogers (Chapter 10) or Gordon

osta (1999, 2003) focused ically, the five dimensions ble 13.1). The essence of ty over time and situation.

Factor Theory include the structures that develop as a result of the interaction between basic tendencies and external influences, such as the environment. (p. 103) explained the relationship between basic tendencies and characteristic adaptations, saying that the heart of the theory is "the concept of personality" (p. 187). The theory is based on the relationship between basic tendencies (e.g., intelligence, aptitude) and characteristic adaptations. Moreover, the theory states that our characteristic adaptations are shaped by basic tendencies. What is more, the theory states that the environment has to offer us a challenge to our environment on an individual level.

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orists such as Albert Bandura
ers (Chapter 10) or Gordon

Allport (Chapter 12) believe that the conscious views people have of themselves are relatively accurate, with some distortion perhaps. In contrast, psychodynamic theorists would argue that most of the conscious thoughts and feelings people have of themselves are inherently distorted and the true nature of the self (ego) is largely unconscious. However, McCrae and Costa (2003) include personal myths as part of a person's self-concept.

Peripheral Components

The three peripheral components are (1) biological bases, (2) objective biography, and (3) external influences.

Biological Bases The Five-Factor Theory rests on a single causal influence on personality traits, namely biology. The principal biological mechanisms that influence basic tendencies are genes, hormones, and brain structures. McCrae and Costa have not yet provided specific details about which genes, hormones, and brain structures play what role in their influence on personality. Advances in behavioral genetics and brain imaging have begun and will continue to fill in the details. This positioning of biological bases eliminates any role that the environment may play in the formation of basic tendencies. This should not suggest that the environment has no part in personality formation—merely that it has no direct influence on basic tendencies (see Figure 13.3). The environment does influence some components of personality. This underscores the need to distinguish the main two components of the model—basic tendencies and characteristic adaptations (McCrae & Costa, 1996, p. 187).

Objective Biography The second peripheral component is **objective biography**, defined as “everything the person does, thinks, or feels across the whole life-span” (McCrae & Costa, 2003, p. 187). Objective biography emphasizes what has happened in people’s lives (objective) rather than their view or perceptions of their experiences (subjective). Every behavior or response becomes part of the cumulative record. Whereas theorists such as Alfred Adler (style of life) or Dan McAdams (personal narrative) emphasize the subjective interpretations of one’s life-story, McCrae and Costa focus on the objective experiences—the events and experiences one has had over one’s lifetime.

External Influences People constantly find themselves in a particular physical or social situation that has some influence on the personality system. The question of how we respond to the opportunities and demands of the context is what **external influences** is all about. According to McCrae and Costa (1999, 2003), these responses are a function of two things: (1) characteristic adaptations and (2) their interaction with external influences (note the two arrows going into the objective biography ellipse in Figure 13.3).

McCrae and Costa assume that behavior is a function of the interaction between characteristic adaptations and external influences. As an example, they cite the case of Joan, who is offered tickets to see the opera *La Traviata* (an external influence). But Joan has a long personal history of detesting opera (a characteristic adaptation) and therefore refuses the offer (an objective biography). To elaborate, Joan may well have a basic tendency toward being closed (rather than