

14. Traits, Types, and Temperament in Personality Development

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... for my part I venture the opinion that all of the infrahuman vertebrates in the world differ less from one another in psychological functioning and in complexity organization than one human being does from any other.

—Gordon Allport¹

... the trouble with traits is that there are too many of them! . . . The answer to this problem . . . is a statistical method called factor analysis.

—Raymond B. Cattell²

Gordon Allport's Psychology of the Individual

What's in a (Trait) Name?

Grumpy, Bashful and Happy were three of the seven dwarves whose names also summarized their dominant personality traits. In life, there are probably few people who are so one-dimensional, but occasionally one does find an individual who exhibits some particular trait that makes him or her stand out in an exceptional way. Following are a few examples of such purported dominant traits in well-known historical figures.

Most readers will know immediately that Ronald Reagan was known as the “great communicator,” and that Lincoln was nicknamed “Honest Abe.” Former president Harry Truman was nicknamed “give-‘em-Hell Harry.” George Washington was known for his honesty and integrity. The legendary Don Juan was a “seducer,” or indeed, himself a “Don Juan,” as the term derived from his very name has come to mean. Similarly, “sadism” was derived from the name of the Marquis de Sade, who had a rather peculiar fascination with that subject. Another historical character whose name became an adjective

was Nicolo Machiavelli (as in “Machiavellian,” or given to the use of power and expediency).

Allport’s Dispositional Perspective

Gordon Allport (1961) claimed that very few people can be described well by a single characteristic, which he referred to as a *cardinal disposition*. However, most people can be described by a relatively small number of *central dispositions* (perhaps 5 to 10), which characterize their personalities in terms of characteristic reactions and behaviors that most of their acquaintances immediately recognize (e.g., thrifty, compulsive, ironic, hard-working, level-headed, flighty, big-hearted). Allport also recognized that people aren’t always consistent and predicable (far from it!), so he noted as well that people can be categorized by a larger number of *secondary dispositions* which are somewhat less consistent, but nonetheless, can be applied in particular situations. Thus, a studious introvert may ordinarily be arduous and intense (central traits) but might occasionally be magnanimous and exuberant (secondary traits) – not necessarily a “bookworm” in every situation.

Cardinal Traits as Media Labels: Do They Reflect Subtle Biases?

Winston Churchill was known for his “iron-will,” but British Prime Minister Margaret Thatcher was nicknamed the “iron lady.” Marilyn Monroe was a talented actress – probably more so than is sometimes recognized – but like it or not, the term “sex goddess” resonates with many people of her era as an apt descriptor of Monroe.

Reflecting on these adjectives, the reader might ask: (a) Was Thatcher’s trait “label” more derisive than Churchill’s, and if so, was this deserved? Why or why not? (b) Was Monroe accurately described as a “sex goddess”? If you have any knowledge of her background, would you suggest the same or a different name for her cardinal trait?

To what extent were these (and other) traits created or perpetuated by the individuals themselves, and to what extent by the public or by the media? Can you think of any examples where politicians have

deliberately placed a label on an opponent where that label has come to be permanently (and perhaps unfortunately) associated with that person? If so, does this label truly represent a cardinal trait? To what extent do labels prevent a deeper understanding of the personalities of the individuals involved?

Allport (1961) also distinguished between *common traits*, which characterize most people (and can be often be found as descriptors in fortune cookies), such as “ambitious,” “pleasant,” or “helpful,” from what he called *personal dispositions*. He preferred the latter term to personal traits because a disposition represents a characteristic that is relatively stable and enduring, and predisposes a person to act in accordance with that characteristic. In other words, personal dispositions not only describe an individual’s personality; they represent behavioral tendencies as well – and they are peculiar to that individual³. Personal dispositions can be placed on a continuum, ranging in salience from cardinal (rare in most people) to central to secondary dispositions. Personal dispositions also differ from personal habits (e.g., always starting the day with a cup of black coffee) in that dispositions are more generalizable than habits, the latter referring to very specific behaviors in rather specific situations.

A Psychology Focused on the Person

Allport believed in the uniqueness of each individual, and unlike most psychologists, he advocated the in depth study of individual persons. Each person’s combination of personal dispositions, including the ways in which these are organized and how they interact with one another, formed a unique pattern of individuality: It is absolutely true that no two people are alike. Allport thus believed that the psychology of “Sue Smith” or “Bob Bates” was worth knowing. The study of individual lives over time appealed to Allport. He used the term *morphogenic* to describe this kind of research on individuals, and contrasted this approach to the usual study of statistical averages, or the *nomothetic* approach, that prevails in psychology. Although Allport’s emphasis on the individual did not receive as much attention as he had hoped it would in his own time, *psychobiography* (psychological life histories of individuals, often though not always

famous people) as well as personal memoirs (e.g., McCourt, 1996) are quite popular today.

Proactive Motivation

Allport's perspective on psychology was far different from Freud's. Allport focused on psychologically normal or healthy people whereas Freud based his theories on his neurotic patients; and Allport was much more interested in conscious processes than in the psychological unconscious.

He believed that both psychoanalysts and behaviorists were *reductionists* who saw people's behavior in as mainly reactive. In both cases the person was seen as seeking a *homeostatic balance*, or a reduction of needs, in which the person is satisfied when biological and psychological needs of deficiency are met. But Allport viewed people as *proactive* in their motivations. In other words, people seek opportunities and challenges for personal growth and development beyond merely satisfying their basic needs. Allport's views thus anticipate the later humanists, such as Rogers and Maslow (Chapter 16) and their conceptualizations of self-actualization. His proactive perspective is also compatible with Albert Bandura's social cognitive approach (Chapter 11).

Functional Autonomy

One of Allport's more interesting contributions to the psychology of development is his notion of the *functional autonomy* of motives. Allport believed that it was fruitful to view most motives as contemporary, or as satisfying some current need, as opposed to some historical need. This notion is not as obvious as it may sound. Freud, for example, viewed many needs as neurotic and grounded in past, as when a person is fixated at an earlier stage of development. For example, someone who is overly compulsive or neat, Freud thought, was fixated or "stuck" at the anal stage of development.

Consider the example of a woman who maintains a very carefully tended garden, with very neat rows of petunias, daisies, and primroses. Further imagine that this garden is the delight of the neighborhood. Freudians might see her behavior as compulsive, having been rooted in childhood frustrations with over-controlling parents at around the age of two or three years. Allport, however, would view the woman's past experiences as irrelevant for

interpreting her present behavior. Perhaps she began her hobby as a means of dealing with some inner compulsion (which may or may not have been related to early childhood experience). But today it is more the case that she simply likes and enjoys making a beautiful garden. That is, the original motive (whatever it may have been) for her seemingly (to some) compulsive behavior is no longer the primary reason for her present behavior. There is no need to look for hidden, unconscious motives for such behavior in Allport's opinion. The woman's motive is functionally autonomous and it needs no further explanation.

The Measurement of Trait Dimensions

The Lexical Approach

Allport and Odbert (1936) were noted for their exhaustive listing of over 18,000 adjectives gleaned from a dictionary that were descriptive of individuals; hence, these were potentially common traits. They narrowed this list down by deleting terms that just didn't seem descriptive of "personality" as ordinarily conceived – however, the final list was still in excess of 4,500 words! Lists of such adjectives form the basis of the so-called *lexical approach* to the study of personality (defining personality in terms of ordinary language) that was continued by many other researchers over the years – including Raymond B. Cattell, Lewis R. Goldberg, Warren T. Norman, Oliver P. John, and Paul Costa and Robert McCrae (John & Srivastava, 1999). As will be seen, these researchers employed the statistical technique of factor analysis to trait adjectives or brief descriptive phrases depicting traits or behaviors to arrive at clusters or groupings of traits that characterize individuals. Although they were concerned with the psychology of individual differences, their psychometric approach was still basically nomothetic in that they believed that most people can adequately be described in terms of a relatively few number of factors, or "super-traits." From the different combinations of individual profiles on these few factors, a large number of personality types can be identified.

How Many Basic Personality Traits are there?

The number of “basic” personality traits has long been a matter of debate in psychology. To some extent this debate continues even to this day. But a clue to the way psychologists have approached this dilemma is given in Cattell’s opening quote to this chapter. Psychologists have used the statistical method of factor analysis as a means of identifying basic personality traits. (Recall from Chapter 6 that this method was also used by psychometricians in their attempts to identify the basic dimensions of intelligence.)

Cattell’s Sixteen Source and Surface Traits

Raymond Cattell’s 16PF personality questionnaire (Cattell and others, 1993) was designed to measure 16 factors, or basic personality traits. Thirteen of these 16 dimensions he called *surface traits*, which are basic personality descriptive traits, and three he referred to as *source traits*, which underlie surface traits, and in fact cause them through their interactions (see Table 14.1).

All of Cattell’s traits are *bipolar dimensions*, meaning that these are continuous variables in which extreme scores at either end represent opposing characteristics. Hence factors are sometimes labeled by these extremes; so for example, the first source trait is called “reserved/outgoing.” Low scores are typical of a person who is quite reserved (or introverted, in Jung’s, 1921/1971, typology) and a person who scores quite high is outgoing (or extraverted, according to Jung). But only people at the extremes can really be called “types,” and indeed, there are a range of scores possible on this dimension (as on the others), with most people falling somewhere in the middle of the range.

For Cattell, the three basic source traits reserved/outgoing, less/more intelligent, and emotionally unstable/emotionally stable are the most basic trait dimensions that best characterize personality. Cattell differs from most theorists in that intelligence is usually not considered a dimension of personality (although a related dimension called “openness to experience” might come close – see below). If the intelligence dimension is omitted, then Cattell and Eysenck (who is discussed next) appear to be very close on their ideas about what constitutes the most basic dimensions of personality, when Cattell’s

source traits are compared to Eysenck's rather minimal number of factors.

As with most kinds of psychological data, individual profiles can be made for the 16 dimensions, as can profile averages for different groups. But don't forget that averages can be misleading – any given person in a given group (such as airline pilots or college professors) could have a profile that's much different from the average.

Eysenck's Two to Three Factors

Hans Eysenck originally believed that just two bipolar factors could account for most of the basic observed differences in personality. Eysenck's two original dimensions were *extraversion* (or at the opposite end, *introversion*) and *neuroticism* (with opposite pole *emotional stability*).

Virtually all trait theorists have endorsed an introversion-extraversion factor – clearly a tribute to Carl Jung's (1921/1971) original insight in identifying this fundamental psychological dimension. Not all theorists define this trait continuum exactly the same way as did Jung, however. For Jung, introverts were not defined by social phobias or shyness, but rather, by an inward, subjective orientation. However, a tendency to avoid large groups or unfamiliar people and to be less inclined toward impulsivity and risk taking (as Eysenck and others describe this trait) often goes along with such an orientation. Jung believed that extraverts were more outwardly focused, and this kind of orientation also seems to fit well with Eysenck's conception: Extraverts are sociable and outgoing, and much more adventuresome than are introverts.

People high in neuroticism tend to be anxious and tense, and are often depressed, moody, or touchy. At the other pole for this factor, emotionally stable people are calm and relaxed, and not easily upset.

Like Cattell and most other trait theorists, Eysenck believed that personality traits were normally distributed in the population, and that only people who were at the end points of the continuum formed clear "types." But it is interesting to note the dichotomy that results when one considers only these extremes, from which the following typology can be developed, and related to some very ancient ideas about personality. The Greek physician Hippocrates identified four personality types that he believed were each related to an excess of

four bodily fluids, or humors: sanguine (blood), phlegmatic (phlegm), choleric (yellow bile), and melancholy (black bile). Although today’s scientists do not believe that personality is related to these particular fluids, the types themselves are still recognizable in Table 14.2. (But readers should recognize that this table simplifies Eysenck’s dimensions.)

Table 14.1
Cattell’s Sixteen Personality Factors as Bipolar Dimensions

<i>Source Traits:</i>		
Reserved	vs.	Outgoing
Less intelligent	vs.	More intelligent
Emotionally unstable	vs.	Emotionally stable
 <i>Surface Traits:</i>		
Submissive	vs.	Dominant
Serious	vs.	Happy-go-lucky
Expedient	vs.	Conscientious
Timid	vs.	Venturesome
Tough-minded	vs.	Sensitive
Trusting	vs.	Suspicious
Practical	vs.	Imaginative
Forthright	vs.	Shrewd
Self-Assured	vs.	Apprehensive
Conservative	vs.	Experimenting
Group-dependent	vs.	Self-sufficient
Undisciplined	vs.	Controlled
Relaxed	vs.	Tense

In years of working in a mental hospital, Eysenck came to believe that his two dimensions were not quite adequate for describing personality, so he added a third: *Psychoticism*. A person who is high in psychoticism is often antisocial and indifferent toward others, and is often hostile. People who are low on this dimension tend to be warm and caring toward others. The Eysenck Personality

Questionnaire – Revised (EPI-R; Eysenck & Eysenck, 1993) is used to measure these three dimensions of personality.

Table 14.2

Hippocrates’ Types and the Extremes of Eysenck’s Two Dimensions of Personality

Extraversion		
Neuroticism	Low (Introversion)	High (Extraversion)
Low (Emotionally Stable)	Phlegmatic (listless)	Sanguine (relaxed)
High (Neurotic)	Melancholic (depressed)	Choleric (irritable)

Eysenck’s neuroticism and extraversion are obviously quite similar to two of Cattell’s three source traits. Eysenck believed (like Cattell) that a relatively small number of “supertraits” or, in the lingo of the factor analyst, “higher order factors,” could account for most of the important differences between people. Eysenck believed that his three factors were rooted in verifiable biological processes, and that these represent true differences between people that are genetically based in heredity.

Five Factors: The “Just Right” Number?

Many researchers felt that 16 factors (per Cattell) were too many for a parsimonious description of personality, and at the same time, that Eysenck’s three were too few. Although there still exist some disagreements, five factors seems to be the number that is most widely accepted today. Leonard Goldberg (1981) first referred to

these as the **Big Five** factors of personality.

The five factors include the ubiquitous extraversion and neuroticism (consistently identified by many investigators over the years), as well as agreeableness, conscientiousness, and openness. Note that a rearrangement of the first letters of these terms results in an OCEAN of possibilities for personality patterns, depending on one's relative rank on each factor. More complete descriptions of each are (using common adjectives):

- **Extraversion** (versus introversion): sociable, adventuresome, outgoing, risk-taking (versus shy, reserved, bookish, cautious).
- **Neuroticism**, or emotional instability (versus emotional stability): depressed, self-conscious, anxious, guilty, touchy (versus calm, even tempered).
- **Agreeableness** (versus disagreeableness): cooperative, trustworthy, sympathetic, compliant (versus argumentative, difficult, uncaring).
- **Conscientiousness** (versus non-conscientiousness): Ordered, dutiful, and disciplined (versus lazy, disorganized, haphazard).
- **Openness**, or openness to experience; open-mindedness; intelligence (versus closed to new experience): Curiosity, imagination, interest in the world (versus conventionality, dullness).

Evaluating the Big Five. As with other models considered in this book based on factor analysis of intelligence or personality, the Big Five factors can be seen as higher-order factors, supported by more specific measures. Neuroticism, for example, is built upon many lower-order factors, such as depression and anxiety. A person who scores high on neuroticism does not necessarily score high on each of the supporting constructs, but perhaps only some (e.g., one may be anxious and depressed without feeling guilty). So these factors represent very broad constructs, and they do not obviate the need to study more specific variables that form the lower-order factors that comprise them.

Scales that measure these five factors include (among many others) the NEO-PR-I (Costa & McCrae, 1992) and the Big Five Inventory (or BFI: John, Donahue, & Kentle, 1991). Research using

the Big Five factor model has been astonishingly consistent in replicating these factors across many different populations (e.g., across genders and cultures), methods (types of measurement; e.g., self-ratings versus ratings by others), and instruments.

According to John and Srivastava (1999), the openness factor alone remains the one possible exception to the very broad generalizability of the Big Five. Reservations include first, in terms of naming this factor, what it should be called. Some have called it “intelligence,” some “culture,” and some “openness to experience,” indicating a lack of complete consensus on the exact nature of the factor. Second, this factor seems to be more difficult to identify consistently in cross-cultural studies, especially in non-Western cultures. (Some of the difficulties may be due to problems in translation.) Nevertheless, John and Srivastava believe the Big Five model represents the best general working model for personality psychologists to date. And overall they note that “the existence of cross-cultural universals would be consistent with an *evolutionary interpretation* of the way individual differences have become encoded as personality categories into the natural language” (1999, p. 106, emphasis added).

Trait theorists have often been accused of being too descriptive, and lacking in a theoretical basis for their approach, which is largely empirical. But McCrae and Costa (1996; 1999) describe a five factor theory (FFT) of personality based on the Big Five factors. Space limitations preclude a detailed summary of their theory, but it assumes that people have basic, biological tendencies grounded in the five factors (i.e., these traits are at least partially inherited), and that people’s characteristic adaptations (behaviors in a variety of situations) are influenced by both these tendencies and external factors (cultural norms; specific situations). They describe the FFT as “a Grand Theory in the sense that it attempts to provide an overview of the functioning of the whole person across the complete lifespan . . . FFT is closely tied to the empirical findings it summarizes, and its vision of human nature, at least at the phenotypic level, is not far removed from folk psychology” (1999, pp. 150 – 151).

Some critics of the Big Five factors think that these are too broad – that there might be other major factors of personality that these miss. And perhaps they fail to capture all the subtleties of the

constructs that underlie them. Jack Block (1995) and Dan McAdams (1992) have criticized the Big Five factor model on the grounds that it is less than a complete theory of personality.

Another very telling criticism came from Albert Bandura (1999) who noted that Big Five items often consist of behavior descriptions (e.g., “I work hard to accomplish my goals”). He argues that such items are not descriptive of personality traits but rather of *past* behavior tendencies, and that using them to predict future conscientious behavior amounts to *reification* of the construct (i.e., falsely concluding a phenomena is something “real,” when essentially this relationship is close to tautological). Bandura believes that “. . . the discriminative personality structures are in the *self system*, not in the behavioral expression” (p. 166, emphasis added).

But the evidence seems clear that, *at least as broad descriptors*, the Big Five are here to stay: They cannot be ignored as major factors that are based on strong and consistently replicable research.

How do the Big Five Related to Other Taxonomies? Eysenck believed that his three factors represented traits that were highly heritable. Lee Ann Clark and David Watson (1999) contrast Eysenck’s “Big Three” factors with the Big Five. They and other theorists have worked within a Big Three framework as an alternative to the Big Five. In relating these two models, they note that Eysenck’s psychoticism (they prefer the term *disinhibition*, with opposite pole *constraint*) is negatively correlated with both agreeableness and conscientiousness, though not to neuroticism. In this sense, psychoticism (or disinhibition), can be conceived as a combination of very low scores on agreeableness and conscientiousness. However, the Big Three have no clear relationship to openness.

Eysenck was an iconoclast who espoused a psychobiological explanation of traits; therefore he felt that Freudian psychoanalysis and related forms of therapy were not of much use (Eysenck, 1953). Also, comparative studies of adoptive and non-adoptive fraternal and identical twins suggested a strong heritability factor in many personality traits, two of which (extraversion and neuroticism) have also been identified as belonging to the Big Five⁴.

Cattell’s 16 dimensions may be a little harder to place, but (a) reanalysis of Cattell’s data by Tupes and Christal (1961) produced

five factors similar to the Big Five, and as already noted (b) two of his three source traits appear to measure extraversion and neuroticism by themselves.

Specialized (Limited) Personality Measures

Not all personality tests are intended as complete inventories. Many of these are instead designed to measure fairly specific aspects of personality, and usually do so in greater detail than overall measurement instruments, such as those designed to assess the Big Five. In some cases researchers wish to construct limited measures of psychological variables in order to study their correlations with other kinds of variables (attitudes and behaviors, for example), or to predict such variables. Examples include global or general self-esteem (e.g., Rosenberg, 1965), or more specific aspects of self-concept (e.g., Fleming & Whalen, 1990); need for approval (Crowne & Marlowe, 1964); or even the very specialized trait “Machiavellianism” (Christie & Geis, 1970). Others are interested in clinical assessment and diagnosis; hence, the Beck Depression Inventory-II (Beck and others, 1996) is a widely used measure of depression, and the Spielberger State and Trait Anxiety Test (STAI; Spielberger and others, 1983) measures not only the trait of anxiety (i.e., being a generally anxious person), but also the test taker’s current state of anxiety, which is partly situational.

Clinical Personality Inventories: The MMPI-2. Some psychologists have constructed personality scales that (unlike most of those discussed so far) are not designed to measure normal aspects of personality, but rather, attempt to identify psychopathology. There are many such inventories, but the most widely known and widely used today is the MMPI-2 (Butcher and others, 1989). This test is long – over 500 items! The items are short, descriptive statements, answered on a true-false-cannot say basis. Items that resemble MMPI-2 questions might look like these examples: “I often have stomach upsets,” or “I like to pretend I’m someone else.” MMPI-2 scales were derived from subsets of the items on an *empirical basis* rather than by factor analysis: Scores from clinical populations (such as hospitalized schizophrenics) are compared to people from the general population, and items that differentiate the two groups comprise the scale. For

example, mean scores for schizophrenics on the Schizophrenic scale are significantly higher than are scores for the normal population.

There are 10 clinical scales for the MMPI-2: Hypochondriasis, Depression, Hysteria (related to Freudian repression), Psychopathic deviate, Masculinity-Femininity, Paranoia, Psychasthenia (anxiety and obsessive thought), Schizophrenia, Hypomania, and Social introversion (shyness). There are also three validity scales, designed to detect faking or laziness, known as L (which measures responding in a “good” direction; a kind of defensiveness), F (feigning psychopathology), K (detects subtle defensiveness; used for statistical corrections of scale scores), and ? (Cannot Say). Too many items not answered on the Cannot Say scale may indicate illiteracy, laziness, or defiance. In addition to these scales which were intentionally built into the test, many research studies have also identified additional empirical scales that are useful in detecting other kinds of psychological problems; for example, alcoholism (MacAndrew, 1965).

Interpretation of MMPI-2 scores requires special training and practice. The clinician does not simply look at scores in isolation, but at the subject’s entire profile, including validity scale scores. Diagnosis of psychological disorders is not made on the basis of MMPI-2 scores alone, but only in conjunction with other test results and clinical interviews, and with medical and psychological histories.

Projective Personality Tests for Clinical Diagnosis. As with the MMPI-2 and other clinical personality inventories, projective tests were designed for diagnosing psychological disorders. Projective tests require clients to interpret ambiguous stimuli, such as a random but symmetrical blotch of ink on paper, as in the well-known ***Rorschach Test*** (Rorschach, 1921), commonly known as the “Ink Blot” test. Such tests were originally designed to uncover unconscious thoughts and motives, with the clinician interpreting the client’s story in terms of its presumed latent content, as is done in dream interpretation (refer to the discussion of Freudian psychotherapy in Chapter 8).

Another very well-known projective test is Henry Murray’s ***Thematic Apperception Test***, or TAT, created in collaboration with Christiana Morgan and other colleagues (Morgan & Murray, 1935; Murray, 1938). Murray was very interested in basic psychological

needs – the need for power, for achievement, for nurturance, and so on – and he designed his test with the idea that the clinician could discover hidden needs, motives, or repressed thoughts and feelings in general using this instrument. The TAT consists of a series of cards with drawings depicting people in ambiguous situations. The client is asked to make up a stories based on these scenes. Interestingly, the very last card is just a blank white surface.

Evaluation the Quality of Tests and Testing: A Smattering of Psychometrics

Standardized Testing Conditions. In order to be useful, psychological tests must be given under uniform conditions. For example, the examiner always reads or recites the same instructions to the test takers, and the test’s manual gives an allowable range of responses to questions from the person or person’s taking the test. In other words, the testing experience should be essentially the same for everyone who is tested. If not – for example, if excessive noise distracts the test taker – then the tests results may be invalid.

Establishment of Norms. Norms refer to published data giving summary information about test scores that are useful in interpreting results. These include basic statistics, such as means, standard deviations, and percentiles, as well as the capability to compare individual scores to different reference groups. Thus, statistics are usually broken down by age or grade, gender, and possibly by other demographic categories. Individual scores are compared with statistics which are based on large samples from a well-defined population, given under standardized conditions.

Reliability. A test’s reliability is the extent to which it measures a trait consistently. One way to assess consistency is to give a test to a norming group on two occasions, then to correlate the scores. The correlation should be high for a reliable test. This is called ***test-retest reliability***. Correlations between scores on the first and second half of the test should also be high (provided all items purport to measure the

same trait or ability); this is called *split-half reliability*. If scores are based on the judgment of observers, then observer's scores can also be correlated. Again, for good reliability, these correlations should be high. This is often called *inter-rater reliability*, also known as *inter-scorer* reliability.

Validity. In simplest terms, a test is valid to the extent that it measures what it purports to measure. **Content validity** refers to the extent to which the items on a test actually relate to the trait or ability being assessed. This is often a matter for judgment, based on expert opinion. For example, does a mathematical placement test contain a sample of all the kinds of skills one would need to prepare one for college? Consult a panel of experienced math teachers to be sure.

If a test purports to measure mechanical aptitude, for example, then it should be a good predictor of future success as a mechanic. The kind of validity in which a test score is correlated with some measure of future performance is called **predictive validity**.

A test that purports to diagnose psychological disorders can be evaluated for validity by noting that high scores on (say) depression correlate with another, existing test of depression, or with the clinical diagnosis or depression (based on interviews with psychiatrists, for example). Correlation with present (as opposed to future) criterion is called **concurrent validity**.

(This is intended as a very brief and cursory introduction to psychometric concepts. For further information – on other kinds of reliability and validity methods, for example – refer to a book on testing, such as Gregory, 2013; or Anastasi and Urbina, 1997.)

Other types of projective tests include **sentence completion tests** (e.g., the Rotter Incomplete Sentences Blank; Rotter, Lah, & Rafferty, 1992) and **figure drawing tests** (e.g., Draw-A-Person Test or DAP; Machover, 1949). A sentence completion test usually consists of a number of items like “When I’m in a bad mood I _____.” The client fills in the blank. Figure drawing tests are even more freeform; the client is asked to draw a person, tree, house, family, and so forth. Proponents claim that these tests are especially useful for children,

who are often unable or reluctant to discuss emotional problems or family difficulties, particularly when there is suspected child abuse in the family. Most projective tests are based on psychodynamic theory, and interpretation is very much like Freudian interpretation of dreams or free associations. The projective tests can offer a standardized method for presenting stimuli, as well as guidelines for interpreting responses. But in general they are notoriously unreliable.

The Projective Paradox. In the study of tests most frequently used in the United States, Watkins and others (1995) found that three of the top five were projective tests or methods (sentence completion methods, Rorschach, and TAT). Gregory (2013) noted the paradox in the continued wide-spread use of projective tests, given their questionable psychometric characteristics. Virtually all of these are lacking in inter-rater reliability (any two clinicians are likely to produce vastly differing interpretations and diagnosis). The evidence for validity is also, on the whole, rather poor. Why, then, do these tests enjoy such widespread use?

Gregory cites the fallacy of ***illusory validation*** as one reason. Clinicians, like the rest of us, tend to notice mainly confirming evidence, but they ignore evidence that contradicts their diagnosis. (Another good example of illusory validation is seen in people who tell you how much they win after gambling in Las Vegas or Reno – not really likely, at least not in the long run, according to the objective odds. On the other hand, they tend not to notice how much they lose.) A related reason is probably simple tradition: These tests have been around so long and used so extensively that people tend to believe that they *must* be valid.

But there is at least one good reason for justifying the use of projective tests despite their psychometric drawbacks, and that is for establishing ***rapport*** with a client. These tests can be good “icebreakers” to get people talking about themselves; and in so doing, they can provide information that the clinician can follow up on with further inquiries.

There is indeed a strong tradition of using projective tests in psychological diagnosis. But using a method simply because it has been used by one’s predecessors seems the least valid of reasons for continuing to employ such methods.

How well do Traits Predict Behavior?

One of the most important tasks of psychology is predicting people's behavior. Such predictions are based in part on knowledge of the persons under study, including dispositional variables or traits and other attributes, such as their attitudes and the kinds of situations that they encounter. For example, how well will a child fare in her first day of school given an assessment of her temperament in early childhood, including factors such as shyness and irritability?

In the late 1960s Walter Mischel (1968) shook up the world of personality research by questioning the ability of personality psychologists to meaningfully and accurately predict behavior based on personality assessment data alone. He argued convincingly that such predictions were difficult and where research did show some relationship of personality variables to behavior the correlations were usually quite small (in the .30 to .40 range). Mischel believed that this paucity of data in support of predicting behavior from personality variables was because so much of behavior is *situation specific*. A test may indicate, for example, that a person tends to be aggressive or perhaps docile and submissive, but such assessments of one's presumed general tendencies are rather unstable and do not necessarily generalize from one situation to another, making consistency of prediction very problematic. Think, for example, of a person who is very aggressive in one situation – perhaps the manager of a baseball team who quickly becomes angered by an umpire's close call – but not in another; he may be very patient and helpful in coaching players who are in a batting slump. Mischel would rightly argue that taking the situation into account – in this case, whether or not the other party in the two-way interaction was threatening and confrontive, or was in fact needful and grateful for help. In other words, the same person can be *both* aggressive *and* supportive, depending on circumstances. Thus Mischel argued that, above and beyond personality measurement, knowledge of the situation is essential to predicting behavior. This position in psychology is known as *interactionism*. Norman Endler and David Magnusson (e.g., 1976; 1977) have also argued strongly from this perspective.

More recently Mischel and his colleague Yuichi Shoda (Mischel & Shoda, 1995; 1999) have formulated a “cognitive-affective personality system” or CAPS that examines the personality-situation interaction from a more creative perspective. They argue that personality traits (as measured by personality inventories) are consistent over time, but *not* over situations. Every person has some degree of variability from one situation to another; yet they also tend to be consistent within *similar* situations. They conceptualize their CAPS model symbolically as: If A then X; but if B then Y; where A and B represent different situations, X and Y different behaviors. For example, at a high school dance (situation A) Betty may be shy about approaching boys (behavior X). But while practicing on her debate team (situation B) she might behavior very (verbally) aggressively toward boys in her class (behavior Y). These are the simplest aspects of the model of course; they also take into account many variables, such as people’s expectancies, beliefs, values, goals, attitudes, emotions, competencies, and perceptions.

Some personality theorists, such as Gordon Allport and Henry Murray, had earlier attempted to address the need to consider situations as well as persons in their research because they were already focused on the individual (consider Allport’s morphogenic approach and Murray’s “personology;” Hall & Lindzey, 1998). But Mischel’s challenge to psychology proved a wake-up call to many in the field of personality research. It should be clear, however, the interactionist position is consistent with current theorizing in developmental psychology which stresses the individual in context.

Personality Typologies

A Typology Based on Eysenck’s Neuroticism and Extraversion Factors

The idea that there clear-cut personality types can be identified has been around for centuries. As noted, the Greek physician Hippocrates identified four bodily fluids, called humors, which he believed needed to be in balance for good health. Galen, a Roman physician, identified personality types associated with an excess of each humor. The four types can still be found in persons who score at the extreme ends of two of Eysenck’s factors, as earlier seen in Table 14.2.

Like Cattell and most other trait theorists, Eysenck believed that personality traits were normally distributed in the population. But it is interesting to note the dichotomy that results when one considers only these extremes, from which the following typology can be developed, and related to some very ancient notions about personality.

Types (and typologies) can be useful, as long as one recognizes their limitations. Most people just don't fit clearly and cleanly into categories. Types exist only for those individuals who score on extreme points on scales measuring certain kinds of personality traits. But historically it is interesting to note some theories in psychology that are based on typologies, discussed next. Many writers even question the validity of typologies, such as those based on the MBTI (discussed in Chapter 15) or other measures, viewing them as nothing more than descriptors with (usually) socially desirable characteristics (e.g., Grant, 2013). However, as of this writing, Gerlach and others (2018) have proposed four basic types they have identified based on a very large sample of more than 1.5 million participants. Resulting types are based on their responses to the "Big 5" factors. They identify these as role models (high on all factors except neuroticism), reserved, self-centered (narcissistic), and "average."

Personality and Body Type

Is the shape of one's body related to personality? (Is Santa jolly because he's fat? Are short people insecure and "Napoleonic"? Are thin people more sensitive or "thin skinned"?) Most of these notions seem rather silly and can easily be dismissed – all it takes is a single counterexample to invalidate a stereotype. (Can you think of someone you know who is both overweight *and* depressed?) But back in the early part of the 20th century Ernest Kretschmer (1921/1925) published a book titled *Physique and Character* in which he identified four types of people based on body shape: ***Athletic*** (muscular), ***asthenic*** (thin), ***pyknic*** (round, or heavy), and ***dysplastic***, which is a catch-all category for those who didn't fit neatly into any of the others. Based on clinical observation, he claimed that asthenics were more prone to schizophrenia, with bipolar disorder (then called manic-depressive disorder) more common among the other types.

Kretschmer did find exceptions in that some pyknics were schizophrenic and some of the other types were bipolar, so the data

showed only statistical trends. But his findings were based on correlations and no causative factors could be clearly isolated. A plausible explanation of these in terms of a third variable that could mediate the relationship between body type and diagnosis is simply age, which was not controlled for by Kretschmer: Bipolar disorder is more common later in life, whereas schizophrenic episodes tend to begin in youth. People also tend to put on more weight as they age, hence the correlations between the disorders and body types appear to be spurious.

Correlational data can indeed present problems in interpretation. William Sheldon, writing in the 1940s to the 1960s, also found correlations between body type and personality (e.g., Sheldon, Lewis, & Tenney, 1969). He developed a complex method for categorizing people according to body shape called *somatotyping*. But he labeled the most extreme types in a manner similar to Kretschmer: *Endomorphs* were thin, *ectomorphs* plumpish, and *mesomorphs* athletic.

Sheldon correlated body type with temperament. He found that ectomorphic types tended to be *cerebrotonics* (shy and nervous) and endomorphs tended to be *vicerotonics* (sociable, pleasure driven, and prone to gluttony; the “fat and jolly” stereotype). But mesomorphs were somatotonics, who enjoy physical activity and risk-taking.

Sheldon believed that one’s body type was genetically determined, hence, a person’s temperament is largely controlled by one’s genetic makeup, rather than by life’s experience. His correlations between personality and somatotype tended to be higher than those reported by subsequent investigators. Nevertheless, small to moderate correlations between somatypes, personality types, and even occupational choice exist and cannot be dismissed; however, as with all correlational findings, they do need to be further explained rather than accepted uncritically as causative⁵.

In summary, contrary to popular opinion, no reliable research has shown a consistent relationship between body type and personality.

Personality Types A and B and Cardiovascular Disease: The Evolution of a Construct

Two cardiologists – Meyer Friedman and Ray Rosenman (1981)–

noted that many of their heart attack patients had a distinct pattern of personality traits. Their *Type A personality* characteristics included extreme impatience, competitiveness, irritation and aggression toward others, and a sense of time urgency (they tend to be in a hurry!). In contrast, *Type B personality* characteristics are opposite types who were relaxed and easy-going. In a longitudinal study lasting for eight years these researchers tracked male patients of both types. They found that Type A's were at much greater risk for coronary artery disease (CAD); in fact, they were twice as likely to develop heart disease as Type B's (Friedman & Rosenman, 1974).

Note that Type A personality consists of a cluster of related variables, not a single trait. Also, Type A and Type B personalities represent the endpoints on a continuum of intercorrelated traits. As with most psychological traits, there are few "pure" types at either end. It is therefore notable that, of those who had heart attacks in the Friedman-Rosenman study, two-thirds were true Type A's, but *none at all* were "pure" Type B's. This was true even after controlling for other factors, such as age, smoking habits, and so forth. But because Type A's consist of several different variables, researchers began to wonder whether or not all of these were implicated in CAD.

Further research has shown that neither time-consciousness nor competitiveness nor high achievement motivation is, by itself, a key variable. People who work hard and intensely to achieve their life goals are not necessarily at risk for CAD. Rather, the key variable seems to be *hostility* (Mathews and others, 1977; Miller and others, 1996). People who are hostile view others defensively, blaming them for their frustrations and failures. This generates a kind of perpetual anger toward others, which in turn, triggers stress; and it is that kind of stress reaction which is the real killer. The person with hostile anger tends to have high blood pressure and produce higher level of stress hormones (Lyness, 1993). It is as though they are constantly living under stress, and experience "fight or flight" reactions. And, increased levels of hormones tend to build up arterial plaque – a form of CAD that can eventually lead up to a heart attack.

Research has also emphasized cognitive factors related to self-concept (Contrada and others, 1999), such as (a) perceived lack of control (here the hostility toward others comes into play); (b) the contingencies associated with self-esteem (that is, with the idea that

one's self-worth is contingent or dependent upon one's achievements); (c) devaluation of the motives of others; or (d) the belief that life is a competitive "zero-sum game," in which there are clear winners and losers (Price, 1982). This line of reasoning suggests that it is how people *think about themselves and others* that increases levels of stress, and therefore, contributes to CAD.

Temperament: Constitutionally Based Personality Traits and Dispositions

Rothbard and Bates on Temperament

Temperament refers to tendencies or dispositions that are constitutionally based. In other words, one comes into the world with certain "built in" dispositions that are observable early in infancy. Temperament is thus due in large part to one's genetic makeup, but may also be influenced by other factors such as fetal exposure to toxins or maternal infections, all of which precede one's birth. This may not be news to parents, who often notice marked differences in their children's temperament: one child may be calm and secure while a sibling is irritable and restless.

Mary Rothbard and John Bates (2006, p. 100) define temperament as "constitutionally based individual differences in emotional, motor, and attentional reactivity and self-regulation." Note that this is a two-part definition. First, *reactivity* refers to degree of emotionality (e.g., fearfulness), physical reactions (e.g., crying; fleeing), and attention. Reactivity can be measured in terms of duration and intensity (e.g., how long and how intense are crying episodes). Second, *self-regulation* pertains to the child's own ability to control or moderate his/her reactivity. Rothbard and Bates view temperament as a subset of personality: ". . . personality includes much more than temperament, particularly the content of thought, skills, habits, values, defenses, morals, beliefs, and social and cognition" (p. 100). Similarly, Caspi and Shiner (2006) state that ". . . most temperament researchers continue to focus on individual differences that emerge early in life, include differences in emotional processes, and have a presumed biological basis . . . However, most contemporary researchers also recognize that temperament is shaped by *both*

hereditary and environmental influences and that temperament includes components of self-regulation and emotion” (p. 303, emphasis added).

But to what extent might any or even all personality dispositions be constitutionally based – in part or in total? Psychodynamic theory as well as many of the other theories considered in this book, stress the critical importance of the first few years of life in shaping personality. Although it is widely accepted today that psychological traits result from an interaction between heredity and environment, the pendulum of fashion has swung increasingly to the nature (or heredity) side of the nature/nurture divide within the last few decades. The fact that infants may exhibit certain characteristic ways of responding early in life does not always mean that these won’t change, however, and experience can play a vital role, as will be seen.

The New York Longitudinal Study

Two researchers, Alexander Thomas and Stella Chess, conducted a lengthy and comprehensive longitudinal study of temperament known as the New York Longitudinal Study (NYLS). First begun in 1956, Thomas and Chess (1977) published their results after 20 years of research. They structured their observation of infants along several dimensions, for example, general level of activity, rhythmicity (regularity of cycles of feeding, sleeping, and so forth), distractibility, and intensity of reactions. Based on their behavior ratings they found three dominant behavioral themes in infants:

1. The *easy child* (about 40% of sample). This child is cheerful, adaptive, and usual regular in routine.
2. The *difficult child* (about 10%). The difficult child is the opposite in temperament in comparison to the easy child. This child is a handful – irritable with intense emotional reactions, disturbed by novel situations, and not very fond of schedules!
3. The *slow-to-warm-up* child (about 15%). This child is in between the others, adjusting only gradually to novel experiences, relatively inactive overall, and it simply takes more time for them to adapt.

Note that these three types account for only about 65% of the babies. The remaining types were just less consistent and more difficult to clearly classify. But the observed behavior categories seemed well-established in the first three months of life. Later work has improved on the NYLS in terms of understanding the basic dimensions of infancy and childhood as discussed next.

Research on Temperament in Infants and Children

Mary Rothbart and John Bates (2006) reviewed numerous studies that attempted to measure dimension of temperament in infants and children since the NYLS types were reported. Variables of concern often had different labels, yet they tended to be conceptually similar. Four reliable, broad dimensions of temperament were found, as well as a tentative fifth. These were:

1. **Positive affect and activity level** (extraversion, surgency).
2. **Fearful distress** (display of distress at novel objects; unwillingness to approach these).
3. **Irritable distress** (general negative emotionality).
4. **Effortful control/task persistence.**
5. **Agreeableness/adaptability.**

They noted some similarities of these to the Big Five factors of personality, though they also stated that they were not necessarily identical with them.

Perhaps it may seem odd that child development specialists and personality psychologists have not jointly studied the continuity of temperamental traits in infancy with major personality traits in adulthood. But then perhaps it isn't so strange, given that a longitudinal study of this magnitude would take many years to complete. Participants in such a study would be difficult to track over such a lengthy period of the lifespan, and such a study would also be extremely expensive (Kagan & Fox, 2006).

Biology Plus Experience: Studies of Shy, Inhibited Children

Some children exhibit a kind of fearful shyness at a very early age. Jerome Kagan and Nathan Fox (2006) distinguished between two kinds of shyness. Social shyness, or wariness of strangers,

characterizes many infants, and may be related to early experience. But shyness can also be a form of behavior that is associated with children who are inhibited with respect not only to strangers, but also to novel objects and unfamiliar situations. The *inhibited or reactive* child represents only a portion of shy children. Kagan and Fox believe that the temperamental differences in the inhibited children are due to differences in brain structure, notably, the amygdala and associated neural pathways that are involved in the limbic system of the brain, and the sympathetic nervous system. More specifically, these structures are more easily aroused by external stimuli. The inhibited child's heart rate and blood pressure as well as general state of arousal are more easily activated by novelty. Behaviorally, both fear and avoidance reactions are more common for these children, such as increased muscle tension, crying, or backing away from the feared object or person. About 20% of the four-month old children studied were of this inhibited, high reactive type, and about 40% were, by contrast, low reactive children.

What is very interesting is that many (about a third) of the children who seemed temperamentally reactive in infancy were not particularly fearful by their second year of life (Arcus, 2001). A few even seemed fearless. In the Arcus study it was found that “a nurturing parent who consistently protected her high-reactive infant from all minor stresses made it more, rather than less, difficult for that child to control an initial urge to retreat from strangers and unfamiliar events. Equally accepting mothers who set firm limits for their children, making mundane age-appropriate demands for cleanliness or conformity, helped their high-reactive infants overcome their fearfulness” (Kagan & Fox, 2006, p. 204, commenting on the Arcus study). Thus it appears that there are potential dangers in overprotection of children who are reactive and inhibited, but conversely, parents can instill a sense of security in these children by their own positive actions.

On the Development of Traits and Temperament: Some Big Questions and Tentative Answers

The biggest question may seem to be “Who is right?” regarding the role of heredity versus environment in personality trait and

temperament development. Or to put it differently, are all of us limited in potential – in what we might become – from the time we are born into this world? Of course this is just the same old refrain of the nature/nurture controversy, applied this time more specifically to personality. By now social scientists know better than to assume a single, all-encompassing viewpoint on this controversy. The question is not one of choosing between genetic endowments on the one hand, and life's experiences on the other: developmental scientists know that both contribute and interact (as with intelligence, physical abilities, and so on). But they also do recognize that heredity has a greater role in personality development than was once thought. Think of the behaviorists, especially Watson and Skinner (per Chapter 10), and their extreme environmental emphasis by contrast. Eysenck, among others, represents the opposite point of view; he believed that personality type and temperament were essentially the same, with most of what constitutes a person's personality defined by a very small number of dimensions – and each of these largely determined by heredity.

A certain amount of research supports Eysenck's views. His Big Three traits do have moderately strong heritability coefficients, based on twin and adoptive studies (Clark & Watson, 1999) – and so do the Big Five factors for that matter (Loehlin and others, 1998). For instance, differences in the nervous systems of introverts and extraverts have upheld Eysenck's hypothesis that introverts work better under conditions of low noise, whereas extraverts seem to prefer at least some additional stimulation from the outside, when concentration is a factor (e.g., Eysenck, 1990, 1994; Stelmack, 1997). Think of studying with rock or hip-hop music on the radio – this works for some students, but not others. Introverts react more; they have lower thresholds in the brainstem's reticular activating system for toleration of noise, and electroencephalograms show that they have more cortical arousal when stimulated by music or other forms of "noise" at low levels (Stelmack, 1990), making it harder for them to concentrate under such conditions.

It seems almost certain that a child who exhibits an introverted personality in infancy can never become a true extravert – or vice versa. But that does not mean that introverts cannot develop an "extraverted side" (or again, vice versa) later in life. Indeed, the

development of different “sides” of one’s personality was considered an important part of psychological development in later life by Carl Jung (see Chapter 15).

Kagan and Fox’s (2006) perspective on development of traits and temperament is one of the wisest and most informed. They claim that: “. . . new discoveries imply that a child’s experiences might be able to mute or enhance an initial temperamental disposition. Specifically, an infant born with a physiology that contributed to high reactivity and fearfulness, but who experienced subsequently a supportive environment without major uncertainties, might undergo physiological changes in those brain circuits that mediate emotional reactivity and become minimally distressed. *The initial genetic endowment is not deterministic and the phenotype is subject to modification by experience* (p. 218, emphasis added).”

Kagan and Fox further state that: “It is reasonable to be optimistic about the future of developmental psychology if scientists search for the coherent profiles that emerge from biological predispositions and life histories, and *do not insist on reducing each profile either to the action of genes or the consequences of experiences* (p. 217, emphasis added).”

For Thought and Discussion

1. Think of someone you know (or someone famous who is not listed in this chapter) whom you believe can be described by a single cardinal trait. What is it? Describe that person's personality (traits or actions) in terms of this trait.
2. Do you agree with Allport, that studying a single individual in depth is part of what psychologists should do? Before you answer, think of psychologically oriented biographies and memoirs, and what they might offer.
3. Think of someone who is very conscientious and agreeable, and then think of someone who is the opposite. Share a brief description of these people. How do (or would) you relate to them?
4. Do you think that hiring practices should be based on results of personality tests (such as the MMPI-2)? Why or why not? Does this raise any ethical issues in your mind?
5. Sheldon thought that body type and temperament were largely determined by genetics. Try to think of a counterexample in which the correlations between one or more of his physical types (endomorph, ectomorph, mesomorph) and temperament (viceratonia, cerebrotonia, and somatonia, respectively) might be caused by environmental factors.
6. Think of someone you know who is a Type A personality, then another person who is a Type B. How well do you get along with each of these people? Which (if either) type do you think *you* are?
7. Why might meditation be recommended to a person with coronary artery disease?
8. If you are a member of a family with more than one child (think of your siblings or your own children), think about how similar and how different these children are from one another. Briefly describe the ways in which they are similar in personality dispositions, and then about ways in which they are different. Where the differences occur, can you readily find an explanation in different early experiences? Or do you think that the children were "just different" from the beginning?

9. Take a closer look at Rothbart and Bates' five dimensions of temperament for children. Which of the Big Three, and of the Big Five personality "supertraits," do you think each resembles?

Notes

1. Allport (1962; cited in Lindzey & Hall, 1965, p. 241).
2. Cattell (1966, p. 55).
3. Allport was a stickler for language – to do him justice, his exact definition of disposition is repeated here as: “a generalized neuropsychic structure (peculiar to the individual), with the capacity to render many stimuli functionally equivalent, and to initiate and guide consistent (equivalent) forms of adaptive and stylistic behavior” (1961, p. 373). His definition of personality is also famous for its exactitude; personality for Allport was: “the dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought” (1937, p. 48).
4. Refer to the earlier chapter on intelligence (Chapter 5) for a more extended discussion of heritability of traits.
5. Those interested in more details on research using Sheldon’s types can consult Hall & Lindzey (1970); but note that their later edition (Hall, Lindzey, & Campbell, 1997) dropped Sheldon from their list of theorists.

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