

# AGREEABLENESS: A DIMENSION OF PERSONALITY

WILLIAM G. GRAZIANO

TEXAS A&M UNIVERSITY

NANCY EISENBERG

ARIZONA STATE UNIVERSITY

This chapter is devoted to agreeableness as a dimension of personality. This review is composed of three parts. First, we will briefly review conceptualizations and definitions of the dimension, and summarize the history of research on the dimension. Second, we will consider theoretical perspectives on agreeableness. Finally, we will focus on a special case of agreeableness, the prosocial personality.

## I. CONCEPTUALIZATIONS OF AGREEABLENESS

### A. Historical Review of Labels for Agreeableness

What is agreeableness? In the past, a basic dimension has been recognized, but it has received different labels from theorists. There may be disagreement on the origins and labels, but descriptions of the basic dimension for the phenomena of agreeableness show remarkable communalities. For example, Adler (1938/1964) suggested that successful resolution of all three problems requires *Gemeinschaftsgefühl*, or “social interest,” manifested in such traits as cooperation and empathy, selflessness, and identification with others. In keeping with the psychoanalytic ap-

proach to attachment, Horney (1945) linked the positive approach to others as part of dependency in response to feelings of inadequacy.

Within the psychometric tradition, Fiske (1949) labeled the dimension "conformity." In their reanalysis of six major studies, Digman and Takemota-Chock (1981) suggested the label "friendly compliance vs. hostile noncompliance." Hogan (1983) offered the label "likability." Digman and Inouye (1986) later suggested that their dimension of friendly compliance is similar, if not identical, to the "love-hate" dimension in circumplex models of personality (e.g., Leary, 1957). More recently, Johnson and Ostendorf (1993) suggested that the meaning of agreeableness is probably determined by how a researcher chooses to rotate factor axes relative to other personality dimensions. Depending on the rotation, agreeableness may be meaningfully seen as either "possessing a pleasant disposition" or "conforming to others' wishes."

In the Wiggins circumplex model of personality (e.g., Wiggins, 1980; Wiggins & Broughton, 1985), the personality dimension of "warm-agreeable" is explicitly linked to the motivational orientation of altruism, but the dimension is seen as not orthogonal to other motivational orientations (e.g., cooperation, martyrdom) and other dispositions, such as being gregarious and unassuming.

Given the scope of this particular dimension and the sweep of conceptualizations, the potentially relevant research literature is large. We were forced to establish restrictive criteria for inclusion in this review. The primary focus will be on more recent, empirically based work on "natural language" individual differences in adults (Goldberg, 1981). Special attention will be given to those differences associated with the "Big Five" bipolar dimension of agreeable-disagreeable, as formulated by Norman (1963) and Tupes and Cristal (1961).

## **B. Agreeableness in the Natural Language**

A major source of information about personality comes from language. Cattell (1957) observed that over the centuries, the "pressure of urgent necessity" has induced people to generate verbal symbols for every important aspect of an individual person's behavior that is likely to affect interpersonal interaction. If agreeableness is an important dimension in the natural language of personality, then it should appear with some frequency in vocabulary and language use.

In 1936 Allport and Odbert published their monumental psycholexical analysis of trait names. These authors examined 17,953 terms in the 1925 edition of *Webster's New International Dictionary* that were descriptive of personality or personal behavior. The terms were divided into four separate lists, or columns. The major purpose of the columns was to separate "neutral" words (Column 1) from censorial, evaluative words (Column 3). Column 1 words symbolized what Allport and Odbert believed were "real" (quotes by Allport & Odbert) traits of personality.

By contrast, words in Columns 2, 3, and 4 were regarded as less value neutral and less control to personality. For present purposes, Column 3 is especially relevant. It was the longest of the four lists and contained character evaluations such as

“agitating,” “amiable,” “agreeable,” and “appealing.” Allport and Odbert were uncertain about the status of these words as trait names; they appeared to be value estimates. The authors even went so far as to suggest that words in Column 3 “should be avoided by psychologists unless they are prepared to deal with the subject of social judgment . . .” (p. vii).

It is important to recognize one important point. The Allport–Odbert list is the major source of terms for linguistic analysis of personality terms. In their attempt to reduce the large number of Allport–Odbert trait words into a more manageable set, many subsequent researchers have largely limited themselves to the words in Column 1. This occurred despite the fact that the reliability of the original classification was not very high by modern standards (see Allport & Odbert, 1936, pp. 34–36). Consider, for example, Cattell’s (1957) approach. Having limited himself to Column 1, Cattell proceeded to reduce the list to 171 terms by having subjects rate the words on meaning. Cluster analyses further shortened the list to a “standard reduced personality sphere” of 42–46 clusters. This reduced sphere has been used repeatedly (e.g., Bond & Forgas, 1984, Digman & Takemoto-Chock, 1981; Norman, 1963; Tupes & Cristal, 1961) and forms the foundation for much work on what is now known as the Big Five dimensions of personality. (Of course, not all studies rely on Cattell’s reduced sphere; see John [1990] and John, Angleitner, & Ostendorf [1988] for reviews and thoughtful critiques; see also Peabody & Goldberg [1989] for a discussion of problems in Cattell’s item selection.)

Given this state of affairs, one might not have expected factor-analytic studies of personality based on the standard reduced personality sphere to uncover a major dimension devoted primarily to “social evaluation.” Nonetheless, when Digman and Takemoto-Chock (1981) reanalyzed data from six major, large-scale studies, the first factor to emerge was labeled “friendly compliance vs. hostile non-compliance.”

## II. THEORETICAL PERSPECTIVES ON AGREEABLENESS

### A. Natural Language Perspectives on Agreeableness

#### 1. Evolutionary Analyses

In his classic paper, Goldberg (1981) extended rigorously the analysis of personality language outlined earlier by Cattell. The heart of Goldberg’s analysis can be captured in a single sentence: “Those individual differences that are of the most significance in the daily transactions of persons with each other will eventually become encoded in our language” (pp. 141–142). A corollary is that the more important an individual difference is in human transactions, the more languages will have a term for it. Goldberg suggests that each of the Big Five dimensions concerns answers to five universal questions individuals ask about strangers they are about to meet. One of the five questions is, “Is X *agreeable* (warm and pleasant) or *disagreeable* (cold and distant)?” (p. 161).

Also building on the Big Five, but employing a theoretical tack different from that used by Goldberg, Hogan (1983) takes a bioevolutionary approach. Hogan argues that personality languages has its origins in group processes. He argues that certain individual differences (e.g., cooperativeness) were more important in promoting the survival of the group than were others (e.g., aesthetic sensitivity) during the long period of human evolution. Survival-related individual differences should be especially conspicuous in the language of personality description. Hogan explicitly argues that the evolutionary acquisition of personality language terms is mediated through social consensus. It is reputational consensus in dispositional attribution that is important; that is, people who know or watch an individual will come to an agreement on the person's tendencies. In this analysis, the language of individual differences evolved as a vehicle for assessing social consensus about an individual's value to a group (cf. Baron's, 1988, ecological approach to social perception).

The pictures offered by Goldberg and Hogan are speculative; furthermore, they are painted with a broad brush. Evolutionary analyses can become complicated by many tangential issues (e.g., frequency-dependent selection); here we consider only the most direct issue, the evolution of sensitivity to a general dimension. For a more detailed analyses of heritability of individual differences in agreeableness-related behaviors, see Graziano (1994) and Loehlin (1992, pp. 56–64).

If we recognize that 99% of human evolution occurred when humans lived in hunting/gathering bands consisting of approximately 30 individuals, and if we recognize that cooperation is seen as an essential attribute in such groups (e.g., Konner, 1975), then it is plausible that an individual's agreeableness might be a dimension receiving special attention (Cosmides & Tooby, 1992; Graziano, Jensen-Campbell, Todd, & Finch, in press). It is not implausible that dispositioned disagreeableness and selfishness could lead to exclusion from social groups (Jensen-Campbell, Graziano, & West, 1995). Additional analyses of the dynamics of group inclusion and exclusion are offered by social psychologists.

## ***2. Social Psychological Analyses***

What might be the functional value of individual agreeableness to the group? One explanation is related to the need for group action. Groups ordinarily have tasks to accomplish, and the accomplishment is easier when group members hold a consensus on the task and a means for accomplishing it. In the language of the early group-dynamics researchers, group locomotion is more easily achieved the more cohesive the members of the group (e.g., Festinger, 1950).

If an individual holds a nonnormative viewpoint about group action, social pressures will be brought to bear on the deviant to induce group consensus, and thus cohesion. Pressure will appear first in communication patterns. Group members will direct many communications toward the deviant, with the intent of gaining conformity (e.g., Dabbs & Ruback, 1987; Schachter, 1951). If this kind of pressure fails to gain compliance, and the individual persists stubbornly in the nonnormative

opinion, then there would be important consequences for both the individual and the group.

If a consensus forms that the deviant will not change toward the normative position, then communications to the deviant will drop off drastically. The deviant will no longer be viewed as a member of the group (e.g., Wilder, 1986). The ultimate consequence is that the individual will be effectively eliminated from the group. Such an outcome is clearly costly for both the group and the individual. From the group's perspective, the personal resources the individual might have provided to the group are now lost. Property might be confiscated and compliance might be forced, but these actions are costly compared with obtaining a "willing conversion." From the individual's perspective, rejection has occurred.

If an individual holds a deviant viewpoint and is cut off from the group, he or she may no longer be allowed to draw on group resources, and the individual's very survival may be questionable. As regards the group, it will now be smaller, and possibly poorer in resources, but the group as a whole will be more cohesive and will be better able to accomplish goals consensually defined as important. Thus group goal attainment, group cohesion, and individual influenceability are interconnected. One of the best documented conclusions in the groups' literature is that in high cohesive groups, individuals tend both to exert influence on other group members and to be susceptible to other individual's influence attempts (Collins & Raven, 1969).

If this line of theoretical speculation is valid, then it is possible to see how agreeableness might have evolved as an important dimension in determining an individual's value to a group. That is, norms for evaluating group members could be expected to include dimensions about agreeableness. If the norms were functional and had some adaptive significance, then they could be perpetuated through social transmission over very long periods (e.g., Campbell, 1988; Jacobs & Campbell, 1961). Individuals would be evaluated through the norms, and noncompliance with the norm could lead to exclusion. If there were a consensus that an individual was chronically unwilling to go along with others, was uncooperative, and gave few individual resources to the group, then that individual's potential contribution to the group would be small. Such an individual would be a force against cohesion and group locomotion. Outcomes of individual group members will not be maximized, at least in task-based groups, when cohesion is low (e.g., Bjerstedt, 1961; Schachter, 1951; cf. McGrath, 1964).

### ***3. Convergence in Social Assessment of Agreeableness***

For attributions of group members along a dimension of agreeableness to serve a useful function, members of the group must reach a consensus on such attributions. To assess convergence in attributions, one must measure concordance between two or more raters who view common targets. Norman and Goldberg (1966) provided clear evidence that peers do converge in their judgments. Costa, McCrae, and their colleagues have used older, nonstudent adults participating in the Baltimore Longitudinal Study to probe this hypothesis. In a paper focusing specifically on

the agreeableness dimension, Costa, McCrae, and Dembroski (1989) found a .30 intraclass correlation among 884 pairs of 344 peers raters for 101 targets on the agreeableness dimension. The corresponding intraclass correlation for extraversion was .53. None of the divergent correlations exceeded .15 in absolute value. McCrae and Costa (1987) reported peer intraclass correlations on agreeableness ranging from .28 to .38 (NEO scale), and from .36 to .43 (adjective factor scores). The corresponding intraclass correlations for extraversion were .38 to .52 (NEO scale) and .37 to .59 (adjective factor scores).

A small number of studies, however, report fewer encouraging results for agreeableness. Albright, Kenny, and Malloy (1988) used the Social Relations Model approach to partition variance attributable to raters and targets. Albright et al. found that perceiver variance emerged on judgments of all traits, but the highest perceiver variance appeared on traits about agreeableness. Of the five dimensions assessed, the lowest proportion of target variance (4%) appeared on judgments of agreeableness. The highest proportion of target variance appeared on traits of extraversion (approximately 27%). Albright et al. concluded that the construct of agreeableness showed little or no interrater agreement. Watson (1989) computed peer rater convergence as a function of number of peer raters. The Spearman Brown reliability of peer rating of agreeableness ranged from a low of .21 for one rater to a high of .57 for five raters. The corresponding values for extraversion ranged from .36 (one rater) to .73 (five raters). One interpretation of these studies is that agreeableness is less easily seen than extraversion, particularly in minimally acquainted peers. Watson's data suggest, however, that as the number of raters used to form consensus increases, significant convergence can be achieved. We will return to the issue of salience and level of convergence in peer evaluation when we consider the Wiggins circumplex interpretation of agreeableness.

Smith and Kihlstrom (1987) conducted five rigorous laboratory social cognition studies to probe the hypothesis that the Big Five dimensions function as schemas. More specifically, each of the trait dimensions of the Big Five might be understood as a cognitive structure that organizes the lexicon of relevant but lower order traits. As a clear cognitive structure, agreeableness seemed to fare worse than the remaining dimensions of the Big Five.

Peabody and Goldberg (1989) reported research that is potentially relevant to the interpretation of the Smith and Kihlstrom program of research. These authors note that potential bias that can occur when samples are restricted to homogeneous targets, such as a rater and his or her friends. Peabody and Goldberg found that such restriction reduces the sizes of all factors, but especially that of agreeableness. From the perspective of Peabody and Goldberg, the tightly controlled program of laboratory studies conducted by Smith and Kihlstrom involved internal judgments; there was relatively little room for variations in stimulus materials involving agreeableness.

Taken together, the bulk of the evidence provides qualified support for the natural language approach articulated by Goldberg (1981) and expanded by Hogan (1983). The strongest support appears in more naturalistic studies with large samples

provided with an adequate range of trait words (e.g., Costa et al., 1988; Graziano, Jensen-Campbell, & Hair, 1996; Graziano, Jensen-Campbell, Steele, & Hair, 1996; Norman & Goldberg, 1966). There is convergence across raters in the assessment of agreeableness, and the peer consensus correlates significantly with self-ratings of agreeableness. Weak or disconfirming evidence appears in less naturalistic laboratory studies (e.g., Smith & Kihlstrom, 1987). In both kinds of studies, agreeableness is less easy for naive perceivers to assess, particularly when the assessment is based on a small number of observations of strangers (e.g., Albright et al., 1988; Watson, 1989). The precise mechanism of social cognition that is responsible for judgments of agreeableness remains unclear. Agreeableness probably does not operate as an omnibus cognitive schema in perceivers through which the relevant lower order traits in others are organized (Smith & Kihlstrom, 1987).

It is interesting that agreeableness can be seen at all, given the obstacles it faces. Intuitively, one might think that agreeableness would be especially difficult to assess in strangers. The situational press surrounding interaction with strangers, or at least the kinds of interactions assessed in most psychological research, is one that requires mildly positive behavior. There is a very serious restriction in range on the relevant agreeableness cues. Other dimensions might be easier to assess. For example, conscientiousness might be assessed through the tidiness of a stranger's clothing or hair; extraversion might be assessed through the stranger's desire to talk over and beyond the demands of polite interaction. Furthermore, agreeableness may be predominantly an affective evaluation, and may be a broader, more diffuse reaction. As such, we might expect intuitively that it would be harder to identify reliably, especially in situations involving limited interaction. On the whole, these intuitions are off the mark: Agreeableness *can* be seen, even in strangers.

#### 4. *Circumplex Analysis of Agreeableness*

Wiggins' (1991) approach to natural language and personality considers two major themes that appear to underlie many descriptions of interpersonal behavior. The first theme or dimension of interpersonal behavior is "agency," the condition of being a differential individual, and its manifestation in striving for mastery and power. The second theme is "communion," the condition of being part of a larger spiritual or social community, and its manifestation in striving for intimacy, union, and solidarity with that larger entity. For present purposes, we will restrict ourselves to the part of Wiggins' conceptualization that is most relevant to the dimension of agreeableness and its links to natural language and group processes.

Wiggins (1991) demonstrates that agency and communion are two distinct orthogonal dimensions, not bipolar ends of a single dimension. Within a given group, seeing all possible combinations of agency and communion should be possible, with interpersonal behaviors appearing as "blends." To illustrate, a sociable, exhibitionist person represents a blend of high agentic and high communal orientation, while a deferential, trusting person represents a blend of high communal and low agentic orientation.

Wiggins discusses ways in which natural language forms of address reflect the operation of agency and communion in different languages. One illustration involves a "nonreciprocal power semantic" (Brown & Gilman, 1960). Specifically, the singular form of address in many languages requires a socially important choice. If the person being addressed is a subordinate, the appropriate choice is T (e.g., "tu" in Latin, Italian, French, and Spanish; "tea" in Russian; and "du" in German). If the person is a superior, however, the appropriate choice is V (e.g., "vos" in Latin, "vous" in French, and "vea" in Russian). Choices of this sort are public acknowledgments of power and dominance, and within the framework of Wiggins' analysis reflect the interpersonal behaviors of agency.

Earlier forms of language apparently had no clear rules for differential use of T and V among equal status peers. Gradually, persons of equal status came to address each other with T as an expression of the "solidarity semantic." That is, language use evolved to allow expression of feelings of solidarity, intimacy, and similarity. In Wiggins' terms, language use evolved to reflect not only the dynamics of power and dominance ("agency"), but also the feelings of intimacy and group cohesiveness ("communion"). Apparently, this pattern is not restricted to Indo-European languages (e.g., White, 1980).

The approach taken by Wiggins may suggest some refinements to the natural language approach taken by Goldberg (1981) and Hogan (1983). Whether the agentic and communal differences appear in a single individual or are separated into a task leader and a socioemotional leader (e.g., Bales, 1958), both characteristics seem important to effective group functioning (Raven & Rubin, 1983, p. 501). Precisely where does agreeableness fit on the agency–communion circumplex?

McCrae and Costa (1989b) probed this question by jointly factoring the Wiggins revised Interpersonal Adjective Scales (IAS-R) with peer and spouse ratings on NEO-PI for a sample of 315 adults. Their analyses suggest that the Big Five dimensions of Extraversion and Agreeableness represent rotations of the agency and communion dimensions (or vice versa; factor analysis does not recognize the primacy of any particular rotational position of any axis.) If one visualizes agency as an axis running from north (high agency) to south (low agency) and communion from east (high communion) to west (low communion), agreeableness runs from southeast (agreeable) to northwest (disagreeable). In other words, agreeableness represents a low-agentic–high-communal orientation.

McCrae and Costa (1989b) claim certain advantages for the five-factor model over the circumplex. First, Wiggins' circumplex model and its dimensions are essentially interpersonal and describe the relations between two people. According to McCrae and Costa, concepts like love and warmth and communion may be adequate for research on social psychology, but may not be the best concepts for understanding enduring dispositions in individuals. More specifically, a dimension like agreeableness may include more than interpersonal elements (e.g., styles of cognition and affect). The relative diversity of interpersonal behaviors might be parsimoniously explained not by "blends" of interrelated dimensions but by a small set of orthogonal underlying causes.



There is an intuitive appeal to this reductionistic argument. Before it is accepted however, some problems should be noted. First, it is simply incorrect to assume that “the belief that most variables should load on a single factor follows from the parsimony principle that traits are more likely to have one cause than two” (McCrae & Costa, 1989b, p. 592). In fact, the principle of parsimony is conditional: Given an array of accounts, all of which are comparably adequate to explain a phenomenon, we should accept the simplest. At this juncture, it is premature to assume that the five-factor solution provides a simpler account of communal behavior or its cause than does the circumplex. Nor is it clear why “traits are more likely to have one cause than two,” or for that matter 20 (cf. Ahadi & Diener, 1989). Causal identification is a complex business, dependent on such diverse variables as level of observation, mode of analysis, and substantive question being asked (Cook & Campbell, 1979, pp. 10–36; Houts, Cook, & Shadish, 1986). The principle of parsimony is irrelevant to the choice between the two approaches here.

Second, it may not be wise to attempt to partition a dimension like agreeableness into interpersonal and non-interpersonal components. It is true that the agreeableness dimension has correlations with such allegedly non-interpersonal variables as the Myers–Briggs dimension of feeling (e.g., McCrae & Costa, 1989a). Still, if we remove the interpersonal aspects of this dimension, then to what coherent set of processes or behaviors might this dimension predict? Furthermore, removing the interpersonal elements severs one promising link in the nomological network of agreeableness involving the evolution of natural language and group behavior (e.g., Cattell, 1957; Goldberg, 1981; Hogan, 1983; Johnson & Ostendorf, 1993). The basic rationale for the natural language approach focuses on the interpersonal aspects of personality; presumably, differences that are of the most significance in the daily transactions of persons with each other become encoded in language (Goldberg, 1981, p. 142).

Third, the circumplex approach might help explain outcomes of lab studies that raise troubling questions about the precise mechanisms underlying the operation of the Big Five. For example, the Smith and Kihlstrom (1987) studies suggested that agreeableness did not operate as an organizing cognitive schema for relevant lower order traits, and that the Big Five dimensions in general lacked “semantic coherence.” If dimensions are conceptualized as a circumplex (i.e., not all dimensions are orthogonal), however, results like those reported by Smith and Kihlstrom become more explicable.

## **B. Biologically Based, Emotional-Motivational Perspectives on Agreeableness**

### ***1. Biological-Affect Perspective as a Complement to a Natural Language–Cognition Perspective***

So far, we have considered agreeableness largely from a cognitive perspective. That is, we focused on agreeableness in terms of people’s knowledge of agreeableness,

in both themselves and others. The natural language approach is itself cognitive in orientation in that it emphasizes the interdependence among language, social perception, and personality. There are, however, three potential limitations to this perspective. First, the cognitive approach is primarily descriptive, not explanatory. That is, it describes how persons might organize impressions of agreeableness, but it is less clear on the mechanisms that induce some persons to be more chronically agreeable than others. Second, even within the framework of a natural language approach, the word "agreeable" connotes an affective element in the evaluation and the perception of motivational dispositions in the target of evaluation. Affective and motivational elements of agreeableness are probably not described (much less explained) adequately by models that focus on cognition, language, and rational evaluations (e.g., Adelman & Zajonc, 1989; Zajonc & Markus, 1984).

Third, the cognitive approach has not established clear connections to the literature linking positive emotions to prosocial behavior. That literature focuses on relatively short-term effects and situationally induced emotions, but it is possible that chronic emotional states have a similar relation to positive social behavior (e.g., Cunningham, 1985, 1986; Eisenberg et al., 1989). Space limitations preclude a review of the literature on emotions and prosocial behavior here. Instead, we will focus on explanations of possible links between chronic emotions and individual differences in agreeableness. See Watson and Clark (this volume, Chap. 29) for a detailed analysis of positive emotional processes from a personality perspective. There is, of course, no reason to assume that cognitive and affective/motivational models of agreeableness-related behaviors are mutually exclusive alternatives, or even incompatible (e.g., Eisenberg, 1986; Eisenberg et al., 1989; Tellegen, 1985).

## ***2. Temperament and Agreeableness***

Individual differences in agreeableness in adults may have a temperamental basis. At the very least, there is evidence for the long term stability of disagreeable behavior across the life span. Ill-tempered boys become men who are described as undercontrolled, irritable, and moody (Caspi, Bem, & Elder, 1989). In discussing their temperamental dimension of emotionality, Buss and Plomin (1984) suggest that in comparison with unemotional people, emotional people become distressed when confronted with emotional stimuli, and they react with higher levels of emotional arousal. As a consequence, they may be harder to soothe when stressed. Rowe and Plomin (1977) found a correlation of  $-.42$  between ratings of children's emotionality and those of their soothability. In one especially unpleasant form of disagreeableness, childhood aggression, chronic differences in emotional responding may play a key role. Perry and Perry (1974) found that chronically aggressive children react more aggressively when provoked and "require" more suffering from their victims before ending an attack than do nonaggressive children. Apparently, chronically aggressive children are not easy to placate or to soothe. Buss and Plomin (1984) suggest that the underlying arousal in emotionality is due to an overactive sympathetic division of the autonomic nervous system.

As a result of certain biological predispositions, individuals may be likely to follow a particular developmental trajectory leading to more or less agreeableness (for an excellent general review of the biological bases of temperament, see Rothbart, 1989). At this juncture, it is not clear how such mechanisms might operate, but individual differences in agreeableness may emerge as part of the ontogeny of systems of excitation and inhibition. If we can assume that agreeableness is associated with the inhibition of negative affect, then models linking brain lateralization and inhibition are relevant to this discussion.

### 3. *Neurology and Agreeableness*

Kinsbourne and Bemporad (1984) suggest a multiaxial, ontogenic model to explain the development of self-regulatory processes. In this model, the left frontotemporal cortex controls action over external change, including the planning and sequencing of acts (the “go” system). The right frontotemporal cortex controls internal emotional arousal (the “no go” system). The two systems operate synergistically, using information provided by posterior centers. Damage to the right orbital frontal cortex is associated with emotional disinhibition. Rothbart (1989) notes a parallel line of thinking in Luria’s work in that the modulation of social behavior in accordance with the context is associated with the right frontal lobes. Damage to the left dorsolateral frontal area is associated with inaction and apathy. The normative evidence suggests that the right hemisphere develops sooner than the left.

Fox and Davidson (1984) suggest that there are differences in hemispheric specialization for affect. The left hemisphere is associated with positive affect and approach, while the right hemisphere is associated with negative affect and avoidance. Toward the end of the first year of life, development of commissural transfer permits left hemisphere inhibition of right hemisphere function. Two consequences are the inhibition of negative affect and the possibility of behavioral alternations between approach and avoidance.

The two models outlined here are normative-developmental in focus and describe a supposedly universal pattern of neurological ontogeny. However, if there were individual differences in the timing or completeness of any of these lateralization processes (as there surely must be), then there would be implications for origins of agreeableness. That is, during ontogeny individuals may differ in the strength or timing of their left hemispheric connections, or in commissural transfer. With these differences, there would be corresponding differences in emotional expression and in the inhibition of negative affect. Differences in expression in turn would lead to different socialization experiences. From a developmental perspective, even if the delayed ontogeny of inhibition were temporary, there could be long-term consequences. In one example, mothers report decreases in feelings of attachment for their 3-month-old infants if crying and other forms of negative affect do not decrease (i.e., come under inhibitory control), as they do in most infants (Robson & Moss, 1970). Longitudinal research on disruptions in mother–infant attachment has shown patterns of persistent disagreeableness such as aggression and

noncompliance, particularly in boys (e.g., Renken, Egeland, Marvinney, Mangs-dorf, & Sroufe, 1989).

A second speculative candidate involves neuroregulatory amines (Panskepp, 1986). These neurochemical systems apparently operate globally to influence shifts in vigilance and tendencies to act. For the present purposes, work by Cloninger is most relevant. Specifically, Cloninger (1987) speculates that norepinephrine functioning is related to reward dependence, which includes such behavior as being emotionally dependent (versus coolly detached), warmly sympathetic (versus tough-minded), sentimental, and sensitive to social cues. The bulk of the research on neuroregulatory amines has focused on psychiatric disorders, with relatively little work on normal adult personality processes (for a more detailed treatment, see Rothbart, 1989).

#### ***4. Approach–Avoidance and Agreeableness***

Another explanation for agreeableness involves conflict between approach and avoidance motives (cf. Graziano, Jensen-Campbell, & Hair, 1996; Jensen-Campbell, Graziano, & Hair, 1996). Infante and Rancer (1982) offer a model of argumentativeness with two independent motives of approach and avoidance of arguments. That is, people differ in feelings of excitement in advocating positions on controversial issues, and in attacking others' positions (approach). People also differ in their motivation to avoid arguments. The motive to avoid arguments is seen as a debilitating factor, weakening the tendency to approach arguments by the anxiety associated with arguing. The motives to approach and to avoid arguments are independent, so that it is possible to be high on both motives, low on both, or high on one but low on the other.

In this approach, the chronically argumentative person experiences favorable excitement and has a strong tendency to approach arguments, while feeling no inhibition nor tendency to avoid arguments. The chronically nonargumentative person shows the opposite pattern of approach and avoidance. Infante and Rancer hypothesize that the expression of dispositional argumentativeness is moderated by the perceived probability of success in a particular argument and the importance (incentive value) of success in winning that argument. In this system, persons with similar levels of the two motives (e.g., high approach and high avoidance) should be more susceptible to situational influences than persons with different levels of the two motives. That is, persons high in approach but low in avoidance will be likely to argue across a range of incentive and probability of success conditions; persons high in both motives will be more responsive to variations in the incentives and probabilities of success in different situational contexts (see Perry, Williard, & Perry [1990] for a similar analysis of incentive and expectation effects in the selection of victims in children's aggression).

Infante and Rancer developed a 20-item scale and reported alpha reliabilities for the approach and avoidance components and resultant difference score ranging from .86 to .91. The correlation between self-ratings and friends' evaluations of

argumentativeness (approach) was .54. The approach score component correlated .30 with a choice to participate in a debate and  $-.39$  to avoid a debate. From the present perspective, it is possible that the individual differences identified by Infant and his colleagues are part of the larger construct of agreeableness.

### 5. *Hostility and Agreeableness*

Yet another explanation of agreeableness involves emotions associated with hostility. In their efforts to identify the “active ingredient” in the Type A link to coronary heart disease, Costa et al. (1988) consider the variable Potential of Hostility, as scored from Rosenman’s (1978) Structured Interview (SI). This study also provided a wealth of information about correlates of agreeableness, as measured by the NEO-PI. Costa et al. note that much of the confusion surrounding the role of anger and hostility in cardiovascular disease is probably due to the fact that there are both neurotic and antagonistic forms of hostility. The experience of hostility is not the same as the expression of hostility. Across two replicating samples of college students ( $N = 208$ ), self-reports of the experience of anger were correlated over  $+.60$  with NEO-Neuroticism, but approximately  $-.33$  with NEO-Agreeableness. Self-reports of anger expression, however, correlated  $.00$  with Neuroticism, and approximately  $-.40$  with Agreeableness. Peer ratings of the focal subjects showed essentially the same pattern, but correlations involving peer ratings of subjects’ experience of anger were somewhat lower. In general, both the self-reported experience and the expression of hostility are negatively related to Agreeableness; this evaluation is corroborated in peer reports.

More interesting, perhaps, are the correlations of various forms of hostility taken from the SI with personality. Across both samples, all four forms of hostility (Hostile Content, Hostile Intensity, Hostile Style, and Potential for Hostility) had relatively small but significant negative correlations with Agreeableness. The correlations involving peer ratings, however, were generally nonsignificant. Costa et al. note that the college samples showed considerable restriction in range on the hostility variables; with a fuller range, larger correlations might have been seen (see Matthews, 1988). Costa et al. note that in 1988, there were no conclusive data linking agreeableness to coronary heart disease. At the very least, data from their study raise some intriguing questions. Costa et al. suggest that in their efforts to identify the “toxic component of Type A,” researchers should not restrict themselves to a narrow view of antagonistic behaviors, and should supplement their use of the standard SI with measures of agreeableness.

The literature we have outlined in this section suggests that there are probably important links between emotional/motivational processes and individual differences in agreeableness. It also suggests that these emotional processes may have a biological base, and are further modified by life experiences as persons move through the life span. Differences in agreeableness are probably related to important socio-emotional and health outcomes. Clearly, the interconnection among these variables is worthy of future research.

### III. THE PROSOCIAL PERSONALITY

#### A. Definition of Prosociality and Scope of Analyses

In this section, we examine prosocial tendencies as one form of agreeableness. Prosocial behavior typically is defined as voluntary behavior intended to benefit another (regardless of whether the behavior is motivated by altruism or baser forms of motivation, such as rewards and social approval). Thus, it overlaps considerably with natural language trait words associated with agreeableness such as "sympathetic," "generous," "kind," "helpful," and "considerate" (see Goldberg, 1992). Because people may act in kind, considerate, and helpful ways for a variety of reasons and it is often impossible to assess individuals' motives for their prosocial actions, we focus on the broader category of prosocial behavior rather than solely on altruistic behavior (which is a type of prosocial behavior). However, it is possible that altruism and constructs such as sympathy, other-oriented moral reasoning, and perspective taking are more closely related to agreeableness than is prosocial behavior (Penner & Fritzsche, 1993).

In this section, we briefly summarize the literature concerning the existence of stable individual differences in prosocial proclivities. The evidence for the role of situational variables in prosocial behavior is persuasive (see Dovidio, 1984; Krebs & Miller, 1985) but is less central to this volume than are data concerning the role of personality variables; therefore, we do not review the enormous literature demonstrating that prosocial behavior varies as a function of a variety of situational factors. Rather, we focus primarily on the literature concerning stable individual differences in prosocial responding and the possible bases of those dispositions (much of which is developmental in focus).

To examine the role of dispositional factors in prosocial behavior, we review research concerning several issues: (1) the role of biology in prosocial tendencies; (2) the relation of prosocial tendencies to social learning variables believed to induce individual differences in prosocial responding; (3) consistency in prosocial responding across time; (4) consistency in prosocial responding across situations; and (5) the relation of prosocial behavior to various person/personality variables. Next we briefly sample studies stemming from an interactional perspective. Given our space constraints, our reviews are illustrative rather than detailed; nonetheless, we try to present an overview of the various types of data that are relevant to determining the role of personality in altruism.

#### B. The Biological Bases of Prosocial Behavior

##### 1. Sociobiology

Recent interest in sociobiology has stimulated much discussion concerning the evolutionary bases of prosocial behavior. A variety of mechanisms for the evolution of altruism in humans have been proposed, including group selection (Wynne-Edwards, 1962), kin selection (Hamilton, 1964), reciprocal altruism (Trivers, 1971),

and genetic similarity (Rushton, Russell, & Wells, 1984), all of which posit reasons why people who assist others would be more likely than less prosocial persons to ensure the survival of their genes in the gene pool (see Boorman & Leavitt, 1980; Cunningham, 1985–1986; Eisenberg, Fabes, & Miller, 1990). In recent variations on this theme, some psychologists and biologists have suggested that it is the interaction of cultural and biological factors that result in prosocial behavior being adaptive (in the reproductive sense; e.g., Batson, 1983; Hill, 1984; MacDonald, 1984).

## 2. *Heritability*

Evidence of innate, inherited differences in individuals' prosocial tendencies would provide strong support for the assertion that there is indeed a prosocial personality. However, most of the research and theorizing on the role of genetics in prosocial behavior concerns the existence of a genetic basis of prosocial behavior in the human species, not the existence of biologically based mechanisms that might be the source of individual differences in prosocial tendencies. Thus, the sociobiologists and psychologists interested in the genetic basis of altruism have done little work bearing directly on the issue of personality differences in prosocial tendencies.

Most of the limited work on inherited differences in prosocial tendencies concerns the construct of empathy. Stimulated by sociobiological ideas, Batson (1983) and M. Hoffman (1981) have proposed that the capacity for empathy is the biological substrate upon which human altruism is built. Empathy (and sympathy) has been empirically (Eisenberg Fabes, & Miller, in press) as well as conceptually (Batson, 1987; Blum, 1980; Feshbach, 1978; M. L. Hoffman, 1984; Staub, 1978) linked with prosocial behavior; therefore, if Hoffman and Batson are correct, genetically based individual differences in vicarious emotional responsivity to others could account for individual differences in prosocial behavior.

Consistent with the perspective that dispositional differences in both empathy and prosocial behavior have a biological basis, several groups of investigators have obtained high estimates of heritability (from .44 to .72) in studies of twins' self-reported empathy and prosocial behavior (Loehlin & Nichols, 1976; Matthews, Batson, Horn, & Rosenman, 1981; Rushton, Fulker, Neale, Nias, & Eysenck, 1986). These data must be interpreted with caution, however, because investigators frequently find higher relations between scores of identical twins than between scores to fraternal twins when self-report indices are used instead of other types of measures to assess aspects of personality (Plomin, 1986). However, recent work with very young children suggests that empathy-related responding is indeed partially genetically based, particularly the emotional components of empathy (Zahn-Waxler, Robinson, & Emde, 1992).

In summary, the few existing studies on the heritability of empathy and prosocial tendencies provide evidence consistent with the view that there are stable individual differences in prosocial responding. However, additional research involving behavioral indices of prosocial tendencies is needed.

### **C. The Social Learning Basis of Prosocial Behavior**

The literature concerning the influence of cultural and specific child-rearing techniques is too voluminous to review in this chapter and has been reviewed extensively elsewhere (see Eisenberg & Mussen, 1989; Moore & Eisenberg, 1984; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983). In general, however, researchers have found that prosocial responding is systematically related to both living in certain types of cultures and being exposed to specific types of socialization techniques.

Specifically, children who are routinely expected to assist in caring for others and in tasks important to the existence of the family are more prosocial than children from cultures in which such expectations are weak or absent (e.g., Whiting & Whiting, 1975). Moreover, people are relatively likely to engage in prosocial actions when they have been exposed to altruistic models, other-oriented preachings, and inductive (reasoning) modes of discipline; if they have been provided with high moral standards and opportunities to engage in prosocial activities; and if they have been exposed to such influences in a warm, supportive context. Findings supporting these conclusions have been obtained in laboratory studies and in correlational studies, and have been found in studies of real-life altruists (e.g., rescuers in Nazi Germany [Oliner & Oliner, 1988] and freedom riders in the southern part of the United States [Rosenhan, 1970]).

Although not all researchers have obtained this pattern of findings, the overall pattern is consistent enough to conclude that variations in the learning context are associated with relatively enduring individual differences in prosocial responding. Variations in learning experiences generally are believed to engender individual differences in values, motives, sociocognitive capacities, knowledge about helping, self-perceptions, and affective responses—differences associated with variations in prosocial tendencies.

### **D. Consistency of Prosocial Responding across Time and Situations**

One of the most obvious ways to study the stability of individual differences in prosocial tendencies is to examine relative consistency in those tendencies over time and situations. If there are stable differences in individuals' characteristic levels of prosocial behavior over time and situations, it is likely that this stability is due in part to aspects of the individual's personality or sociocognitive functioning (see West & Graziano, 1989).

Those investigators who have obtained longitudinal data have frequently found evidence of modest stability in individuals' relative levels of prosocial tendencies. The evidence of stability is perhaps weakest in studies of young children. For example, Dunn and Munn (1986) found low, positive but nonsignificant correlations from 18 to 24 months of age for a composite of observed sharing/helping/comforting behaviors and for giving appropriately. Similarly, Eisenberg, Wolchik, Goldberg, Engel, and Pasternack (1992) examined consistency over 6 months in 1- to 2-year-



olds' spontaneous and requested prosocial behaviors with mothers and fathers and obtained very modest evidence of consistency. The only correlations that were significant were for boys' (but not girls') requested prosocial behaviors with fathers and for boys' spontaneous behaviors with mothers.

The relatively sparse evidence of consistency in prosocial responding in the early years is not surprising given the major changes in sociocognitive capabilities (e.g., role taking, moral reasoning) and other skills, as well as socializers' behaviors, during the first years of life.

Stability in prosocial tendencies likely increases with age in childhood. Dunn and Munn (1986), in an observational study of siblings in their homes, found that older siblings (approximately 3 to 6 years of age) were more consistent over a 6-month period in their helping, sharing, and comforting behavior than were their 1- to 2-year-old siblings. Moreover, other researchers have obtained evidence of moderate stability in prosocial responding in the preschool and school years. Block and Block (1973) found that preschoolers who had been described by their nursery school teachers as generous, helpful and cooperative, empathic, considerate, dependable, and responsible at age 4 were more likely at age 5 than their peers to share a prize they had earned with another child who did not have time to earn a prize. Similarly, Baumrind (reported in Mussen & Eisenberg-Berg, 1977) found that social responsible, prosocial behavior in the preschool years (as rated by observers) was significantly correlated with similar behavior when in elementary school 5 to 6 years later.

In addition, Eisenberg et al. (1987) found that donating to charity was consistent from age 7–8 years to age 9–10 years, and from 9–10 to 11–12. Helping (e.g., helping pick up paper clips or spilled papers), which was assessed at ages 9 to 10 and 11 to 12, also was relatively stable over this 2-year period. Further, self-reported prosocial behavior and mothers' reports of children's prosocial behavior were both consistent over 4 years, as was helping by doing extra tasks for the experimenter (Eisenberg, Carlo, Murphy, & Van Court, 1993; Eisenberg, Miller, Shell, McNalley, & Shea, 1991). Finally, Bar-Tal and Raviv (1979) found that peers' and teachers' sociometric ratings of sixth graders' altruism were relatively stable over a 2-year period; however, sociometric ratings in sixth grade were not significantly related to self-reported willingness to help 2 years later.

An alternative index of stability in prosocial responding is the quality of the individual's reaction to a needy or distressed person (rather than simple quantity of a given behavior). In this regard, Radke-Yarrow and Zahn-Waxler (1984) obtained mothers' detailed reports of their 1- to 2-year-olds' naturally occurring reactions when they observed others in distress or need. They found that two-thirds of the children were stable over a 5-year period in mode of reaction. For example, if children responded emotionally, with avoidance, or with a cognitive, nonemotional response at age 2, they were likely to do so at age 7.

There are very few data concerning the stability of prosocial behavior in adolescents and adults. Oliner and Oliner (1988), in a retrospective study of Europeans who had previously rescued Jews from the Nazis in World War II, found that

rescuers were more likely than peers who did not engage in rescuing activities to report involvement in several prosocial activities during the year before their interview (e.g., feeding the sick or aged or visiting the ill; making telephone calls for a group or cause; or helping raise money for a group or cause). Thus, using a sample of verified altruists, the Oliners obtained evidence of consistency in prosocial responding over 3 to 4 decades.

On a less grand scale, Small, Zeldin, and Savin-Williams (1983) found that peers' ratings of adolescents' prosocial behavior, as well as observed prosocial behaviors, were quite stable over a 3- to 4-week period ( $r$ s ranged from .48 to .99). In another study involving adolescents, Davis and Franzoi (1991) obtained fairly high correlations between high school students' self-reports of sympathetic concern over a 2- or 3-year period ( $r$ s for the total sample ranged from .48 to .64 or .64 to .81 when corrected for measurement error); similar findings have been obtained by Eisenberg and her colleagues (1991, 1993). Given the fact that sympathetic concern is positively related to behaviors that appear to be altruistic (Batson, 1987; Davis, 1983; see Eisenberg et al., in press) and is an index of other-oriented concern (cf. Jensen-Campbell et al., 1996), the Davis and Franzoi data also can be viewed as evidence of stability in altruistic responding.

Some of the strongest evidence of consistency in prosocial responding across settings comes from studies conducted by Savin-Williams and his colleagues. They observed four groups of adolescents at summer camping outings over periods of weeks (at wilderness travel programs and travel camp programs; see Savin-Williams, Small, and Zeldin, 1981; Small et al., 1983; Zeldin, Small & Savin-Williams, 1982; see Savin-Williams, 1987). Individual differences in prosocial behavior were clearly recognized by peers after only 4 days, and these perceptions remained stable over weeks (Zeldin et al., 1982). Moreover, observed levels of prosocial behavior were highly consistent across situations (Small et al., 1983).

Obtained correlations reported in studies of cross-situational or cross-time consistency are likely minimal estimates of the true correlations. As was evidenced in Rushton's (1980) reanalysis of the Hartshorne and May data, the use of aggregated indices would doubtless increase the size of the intercorrelations in relevant research (see Epstein, 1979). Moreover, the intercorrelations would be expected to be higher if all the indices of prosocial behavior were actually indices of altruism (and, consequently, were due to higher level motivations such as sympathy and internalized values).

In summary, the evidence suggests that there is moderate stability in individuals' prosocial responding after the preschool years. However, the correlations over time vary considerably in strength. It is impressive, nonetheless, that researchers often have obtained any evidence of consistency considering that children's interpretations and understandings of the nature of kindness change with age (see Eisenberg, 1986), as do their competencies with regard to helping (e.g., Peterson, 1983). Moreover, the evidence for consistency is strengthened by the fact that some of these studies involved observational indices of prosocial behavior rather than merely self-report indices (which may be affected by memory distortions and self-presentational

concerns). In addition, it is likely that estimates of consistency in most studies were underestimated because few researchers have corrected stability coefficients for measurement error.

### **E. The Relation of Prosocial Responding to Person Variables**

If there are stable individual differences in prosociality, one would expect prosocial persons to exhibit somewhat different personal characteristics than less prosocial persons. In particular, prosocial (and particularly altruistic) persons would be expected to exhibit high levels of those characteristics that have been conceptually linked to other-oriented, moral responding—for example, role taking, sympathy and empathy, high-level moral reasoning, valuing of others, feelings of responsibility toward others, and the tendency to ascribe responsibility for others to the self (see Eisenberg et al., in press; Schwartz & Howard, 1984; Staub, 1974, 1978, 1986; Underwood & Moore, 1982). Moreover, because prosocial behavior often involves not only an other-orientation but also the ability to enact helping actions, it is reasonable to expect correlations between indices of prosocial behavior and individual competence and control, including social competence and internal locus of control.

There do seem to be some associations between prosocial behavior and those personality characteristics conceptually linked to altruism, although these relations are often not strong or very consistent. For example, prosocial responding has been positively associated with a communal orientation (Clark, Ouellett, Powell, & Milberg, 1987), nurturance (e.g., Romer, Gruder, & Lizzardo, 1986; Rushton, Chrisjohn, & Fekken, 1981; Rushton, Littlefield, & Lumsden, 1986), social interest (Crandall & Harris, 1976; Rushton et al., 1981), social extensivity (Oliner & Oliner, 1988), social responsibility (Eisenberg et al., 1989; Oliner & Oliner, 1988), and ascription of responsibility for others to the self (Eisenberg et al., 1989; Staub, 1974; see review in Schwartz & Howard, 1981, 1984). Personal norms regarding helping, presumably constructed from internalized moral values, also have been linked with prosocial behavior in several studies (see Eisenberg, 1986; Pomazal & Jaccard, 1976; Schwartz & Howard, 1984; Zuckerman & Reis, 1978), as has endorsement of altruistic values (Larrieu & Mussen, 1986; Rushton et al., 1981). Moreover, in a review of the research on the personality correlates of community mental health volunteers, Allen and Rushton (cited by Krebs & Miller, 1985) found that the following personality traits were characteristic of the volunteers: internal locus of control, social responsibility, inner directedness, achievement via independence, self-control, flexibility, superego strength, self-acceptance, capacity for intimacy, and nurturance.

The relations of prosocial behavior to sociocognitive capabilities and affective aspects of responding are perhaps more consistent than relations for the traditionally studied personality characteristics. For example, individual differences in sympathy/empathy (Eisenberg et al., in press) perspective-taking ability (Underwood & Moore, 1982), and level of moral reasoning (Blasi, 1980; Eisenberg, 1986; Underwood & Moore, 1982) have all been positively linked with prosocial responding in

reviews of the literature. Moreover, this linkage might be stronger when one considers multiple sociocognitive and affective skills. For example, Knight, Johnson, Carlo, and Eisenberg (1994) found that children who were high in sympathy, perspective taking, and the understanding of money were highest in donating money to hospitalized children.

Sociability and assertiveness are personality characteristics that are more consistently related to prosocial behavior than are most traits. Specifically, they are positively associated with children's and adolescents' performance of prosocial acts that involve social initiative and direct interaction with others (e.g., Eisenberg, Cameron, Tryon, & Dodez, 1981; Eisenberg, Pasternack, Cameron, & Tryon, 1984; Hampson, 1984; Larrieu, 1984; Murphy, 1937). A certain level of assertiveness may be necessary for people to spontaneously approach others who need assistance (Midlarsky & Hannah, 1985). Given that high levels of spontaneous prosocial behavior have been associated with high sociability, moral reasoning, and other measures of competent social behavior, children who tend to perform helping and sharing behaviors spontaneously may fall into the group of agreeable people with high extraversion or emotional stability (as identified by Johnson & Ostendorf, 1993).

In contrast, low levels of assertiveness and dominance have been associated with children's compliant prosocial behavior (e.g., assisting in response to a request; Eisenberg et al., 1981, 1984; Eisenberg & Giallanza, 1984; Larrieu, 1984). Among preschoolers, nonassertive children are viewed as easy targets by their peers, and are asked to share or assist more often than are their more assertive peers (Eisenberg et al., 1981; Eisenberg, McCreath, & Ahn, 1988). Thus, the types of prosocial acts performed by persons varying in assertiveness and sociability probably differ somewhat in terms of their social significance and motivational bases, and are differentially performed depending on the social context. We now turn to this issue of the interaction between personal characteristics and environment.

#### **F. The Interaction of Person and Environmental Variables**

Situational variables appear to interact with person characteristics in a variety of ways (see Snyder & Ickes, 1985). Because this chapter's intent is to focus on agreeableness as a person variable, we do not attempt to describe all of the myriad possible person-situation interactions in prosociality. Rather, we acknowledge these interactions with illustrative examples.

Some researchers have found that specific types of helping contexts engender prosocial action in people with particular dispositional characteristics. For example, Gergen, Gergen, and Meter (1972) asked students to volunteer for a variety of prosocial activities ranging from counseling needy students to participating in an experiment involving unusual states of consciousness. They found that students with different dispositional characteristics and motives choose different helping activities, and that there seemed to be a match between students' dispositions and

the ways in which they chose to help. It is likely that somewhat different personality traits are associated with planned versus informal helping.

In another particularly illustrative study, Romer et al. (1986) found that receptive givers, that is, people high in dispositional nurturance and need for succorance (the tendency to seek aid and support from others, especially when in need), were predisposed to help when compensation was expected. In contrast, adults who were high in nurturance and were more inner sustaining (independent) were more likely than receptive givers to help when compensation was not expected (and helped less than receptive givers when compensation was expected). People low in nurturance and high in succorance helped least, regardless of compensation. The results of studies such as these are consistent with other data suggesting that dispositional characteristics affect individuals' estimates of the costs and benefits of prosocial action in helping contexts (e.g., Penner, Michael & Brookmire, 1979).

The results of these and other studies suggest that the association between dispositional factors and prosocial behavior may be underestimated frequently by researchers who do not attend to moderating variables. Awareness of this problem is evident in theoretical work on heuristic models of prosocial behavior (e.g., Eisenberg, 1986, Figure 1). It is important to recognize, however, that the focus of most empirical work in the area has been on prosocial behavior, not solely altruistic behavior. Many dispositional and situational variables that affect nonaltruistic prosocial behaviors would not be expected to influence altruistic responding. The association between prosocial behavior and person-centered variables (e.g., moral reasoning, sympathetic tendencies) would increase if altruistic behavior only were considered (e.g., Rholes & Bailey, 1983).

#### IV. SUMMARY AND CONCLUSIONS

This chapter examined agreeableness as a dimension of personality. Agreeableness is probably best conceptualized as a general latent variable that summarizes more specific tendencies and behaviors (e.g., being kind, considerate, likable, cooperative, helpful). We used the natural language approach developed by Goldberg (1981) to organize the diverse findings in the literature. The central proposition of the natural language approach is that individual differences that are of the most significance in the daily transactions of persons with each other will eventually become encoded in our language. Agreeableness should certainly qualify as an individual difference having significance for people's daily transactions. We then discussed ways in which theoretical work by Hogan (1983) and Wiggins (1991) might be linked to the natural language approach. In particular, we noted how personality language may have its origins in the need for human groups to take concerted action (Hogan, 1983). Group action is most efficient when individual members are willing to conform to group norms and to suspend their own individual concerns for the good of the group.

With a few notable exceptions, the bulk of the literature is consistent with these theoretical ideas. Across a range of studies, agreeableness emerges in the natural language descriptions of the self and peers. Furthermore, there is evidence that self-rating and peer evaluations converge in assessing agreeableness. Such results are remarkable if we assume that the original research materials developed by Allport and Odbert and refined by Cattell probably biased outcomes against uncovering an agreeableness dimension. The precise mechanism linking assessments of agreeableness to specific behaviors remains unclear. Careful laboratory work suggests that agreeableness probably does not operate as an omnibus cognitive schema organizing lower level traits (Smith & Kihlstrom, 1987).

Other work suggests that agreeableness may be less salient as an individual difference, particularly among minimally acquainted people, than dimensions such as extraversion or dominance (e.g., Albright et al., 1988; Watson, 1989). Assessments of agreeableness may be more global, more affect-laden, or more diffuse than other kinds of assessments.

Promising lines of research have emerged linking agreeableness to motivational processes and affect. Wiggins (1991) suggests that individual differences in agreeableness might be part of a motivational system in which people strive for intimacy, union, and solidarity with the groups to which they belong (or seek to belong). Basic biobehavioral research suggests that individual differences in agreeableness in adults may have their origins in affective self-regulatory processes in childhood. In particular, individual differences in the pattern of inhibition of negative affect may be related to the development of agreeableness (e.g., Fox & Davidson, 1984), and these may be related to health, especially cardiovascular disease (Costa et al., 1988).

Prosocial behavior can be conceptualized as a form of agreeableness. Recent research suggests that there may be important dispositional components to prosocial behavior, and these may be seen even in young children. Precise identification of these dispositions has been inhibited by problems of differentiating among social motives, and by weak measures of altruism as an outcome and as a disposition. A further problem is that researchers have focused on main effects and not on moderated relations. Despite conceptual complexities and despite efforts to suppress its appearance, a construct approximated with the label agreeableness continually reappears in personality research. Its pervasiveness is best explained by its importance for understanding personality and interpersonal behavior.

## ACKNOWLEDGMENT

Part of this work was supported by NSF Grant BNS 8705780 to William Graziano, and by NSF Grants BNS 8807784 and DBS-9208375, National Institute of Child Health & Development Career Development Award KO4 HD 00717, and National Institutes of Health Grant K02 MH00903 to Nancy Eisenberg. The authors express their appreciation to Steve Briggs,

Charles Halverson, Lauri Jensen Campbell, Delroy Paulhus, Louis Penner, Niels Waller, David Watson, and Steve West for comments on an earlier version of this chapter.

## REFERENCES

- Adelmann, P. K., & Zajonc, R. B. (1989). Facial efference and the experience of emotion. *Annual Review of Psychology, 40*, 249–280.
- Adler, A. (1964). *Social interest: A challenge to mankind*. New York: Capricorn. (Original work published 1938)
- Ahadi, S., & Diener, E. (1989). Multiple determinants and effect size. *Journal of Personality and Social Psychology, 56*, 398–406.
- Albright, L., Kenny, D. A., & Malloy, T. E. (1988). Consensus in personality judgments at zero acquaintance. *Journal of Personality and Social Psychology, 55*, 387–395.
- Allen, N. J., & Rushton, J. P. (1983). Personality characteristics of community mental health volunteers: A review. *Journal of Voluntary Action Research, 12*, 36–49.
- Allport, G. W., & Odbert, H. S. (1936). Trait names: A psycho-lexical study. *Psychological Monographs, 47*(1, Whole No. 211).
- Bales, R. F. (1958). Task roles and social roles in problem solving groups. In E. E. Maccoby, T. M. Newcomb, & E. L. Hartley (Eds.), *Readings in social psychology* (3rd ed., pp. 437–447). New York: Holt, Rinehart.
- Baron, R. M. (1988). An ecological framework for establishing a dual mode theory of social knowing. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge* (pp. 48–82). Cambridge, England: Cambridge University Press.
- Bar-Tal, D., & Raviv, A. (1979). Consistency in helping-behavior measures. *Child Development, 50*, 1235–1238.
- Batson, C. D. (1983). Sociobiology and the role of religion in promoting prosocial behavior: An alternative view. *Journal of Personality and Social Psychology, 45*, 1380–1385.
- Batson, C. D. (1987). Prosocial motivation: Is it ever truly altruistic? In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 65–122). Orlando, FL: Academic Press.
- Bjerstedt, A. (1961). Preparation, process, and product in small group interaction. *Human Relations, 14*, 183–189.
- Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. *Psychological Bulletin, 88*, 1–45.
- Block, J., & Block, J. H. (1973, January). *Ego development and the provenance of thought: A longitudinal study of ego and cognitive development in young children* (Grant No. MH16080). Progress report for the National Institute of Mental Health.
- Blum, L. A. (1980). *Friendship, altruism and morality*. London: Routledge & Kegan Paul.
- Bond, M. H., & Forgas, J. P. (1984). Linking person perception to behavior intentions across cultures: The role of cultural collectivism. *Journal of Cross-Cultural Psychology, 15*, 337–352.
- Boorman, S. A., & Levitt, P. R. (1980). *The genetics of altruism*. New York: Academic Press.
- Brown, R., & Gilman, A. (1960). The pronouns of power and solidarity. In T. A. Sebeok (Ed.), *Style in language* (pp. 253–276). Cambridge: Technology Press.
- Buss, A., & Plomin, R. (1984). *Temperament: Early developing personality traits*. Hillsdale, NJ: Erlbaum.

- Campbell, D. T. (1988). Descriptive epistemology: Psychological, sociological, and evolutionary. In E. S. Overman (Ed.), *Methodology and epistemology for the social sciences: Selected papers* (pp. 435–486). Chicago: University of Chicago Press.
- Caspi, A., Bem, D. J., & Elder, G. H., Jr. (1989). Continuities consequences of interactional styles across the life course [Special issue]. *Journal of Personality, 57*, 375–406.
- Cattell, R. B. (1957). *Personality and motivation: Structure and measurement*. Yonkers-on-Hudson, NY: World Book.
- Clark, M. S., Ouellette, R., Powell, M. C., & Milberg, S. (1987). Recipient's mood, relationship type, and helping. *Journal of Personality and Social Psychology, 53*, 94–103.
- Cloninger, C. R. (1987). Neurogenetic adaptive mechanisms in alcoholism. *Science, 236*, 410–416.
- Collins, B. E., & Raven, B. H. (1969). Group structure: Attraction, coalitions, communication, and power. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (2nd ed., Vol. 4, pp. 102–204). Reading, MA: Addison-Wesley.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago: Rand McNally.
- Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). New York: Oxford University Press.
- Costa, P. T., Jr., McCrae, R. R., & Dombroski, T. M. (1989). Agreeableness versus Antagonism; Explication of a Potential Risk Factor for CHD. In A. Siegman & T. M. Dombroski (Eds.), *In search of coronary-prone behavior* (pp. 41–63). Hillsdale, NJ: Erlbaum.
- Crandall, J. E., & Harris, M. D. (1976). Social interest cooperation and altruism. *Journal of Individual Psychology, 32*, 50–54.
- Cunningham, M. R. (1985–1986). Levites and brother's keepers: A sociobiological perspective on prosocial behavior. *Humboldt Journal of Social Relations, 13*, 35–67.
- Dabbs, J. M., Jr., & Ruback, R. B. (1987). Dimensions of group process: Amount and structure of vocal interaction. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 123–137). San Diego, CA: Academic Press.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multi-dimensional approach. *Journal of Personality and Social Psychology, 44*, 113–126.
- Davis, M. H., & Franzoi, S. (1991). Stability and change in adolescent self-consciousness and empathy. *Journal of Research in Personality, 25*, 70–87.
- Digman, J. M., & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology, 50*, 116–123.
- Digman, J. M., & Takemoto-Chock, N. K. (1981). Factors in the natural language of personality: Re-analysis, comparison, and interpretation of six major studies. *Multivariate Behavioral Research, 16*, 149–170.
- Dovidio, J. J. (1984). Helping behavior and altruism: An empirical and conceptual overview. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17, pp. 361–427). New York: Academic Press.
- Dunn, J., & Munn, P. (1986). Siblings and the development of prosocial behaviors. *International Journal of Behavioral Development, 9*, 265–284.
- Eisenberg, N. (1986). *Altruistic emotion, cognition and behavior*. Hillsdale, NJ: Erlbaum.
- Eisenberg, N., Cameron, E., Tryon, K., & Dodez, R. (1981). Socialization of prosocial behavior in the preschool classroom. *Developmental Psychology, 17*, 773–782.
- Eisenberg, N., Carlo, G., Murphy, B., & Van Court, P. (1996). *Prosocial development in late adolescence and early adulthood: A longitudinal study*. Paper submitted for editorial review.



- Eisenberg, N., Fabes, R. A., & Miller, P. A. (1990). The evolutionary and neurological roots of prosocial behavior. In L. Ellis & H. Hoffman (Eds.), *Crime in biological, social, and moral contexts* (pp. 247–260). New York: Praeger.
- Eisenberg, N., Fabes, R. A., & Miller, P. A. (in press). The evolutionary and neurological roots of prosocial behavior. In L. Ellis & H. Hoffman (Eds.), *Evolution, the brain, and criminal behavior: Explorations in biosocial criminology*.
- Eisenberg, N., & Giallanza, S. (1984). The relation of mode of prosocial behavior and other proprietary behaviors to toy dominance. *Child Study Journal*, *14*, 115–121.
- Eisenberg, N., McCreath, H., & Ahn, R. (1988). Vicarious emotional responsiveness and prosocial behavior: Their interrelations in young children. *Personality and Social Psychology Bulletin*, *14*, 298–311.
- Eisenberg, N., Miller, P. A., Schaller, M., Fabes, R. A., Fultz, J., Shell, R., & Shea, C. (1989). The role of sympathy and altruistic personality traits in helping: A re-examination. *Journal of Personality*, *57*, 41–68.
- Eisenberg, N., Miller, P. A., Shell, R., McNalley, S., & Shea, C. (1991). Prosocial development in adolescence: A longitudinal study. *Developmental Psychology*, *27*, 849–857.
- Eisenberg, N., & Mussen, P. (1989). *The roots of prosocial behavior in children*. Cambridge, England: Cambridge University Press.
- Eisenberg, N., Pasternack, J. F., Cameron, E., & Tryon, K. (1984). The relation of quantity and mode of prosocial to moral cognitions and social style. *Child Development*, *55*, 1479–1485.
- Eisenberg, N., Shell, R., Pasternack, J., Lennon, R., Beller, R., & Mathy, R. M. (1987). Prosocial development in middle childhood: A longitudinal study. *Developmental Psychology*, *23*, 712–718.
- Eisenberg, N., Wolchik, S. A., Goldberg, L., Engel, I., & Pasternack, J. F. (1996). *Parental values, reinforcement, and young children's prosocial behavior: A longitudinal study*. Manuscript submitted for editorial review.
- Epstein, S. (1979). The stability of behavior: 1. On predicting most of the people most of the time. *Journal of Personality and Social Psychology*, *37*, 1097–1126.
- Feshbach, N. D. (1978). Studies of empathic behavior in children. In B. A. Maher (Ed.), *Progress in experimental personality research* (Vol. 8, pp. 1–47). New York: Academic Press.
- Festinger, L. (1950). Informal social communication. *Psychological Review*, *57*, 271–292.
- Fiske, D. W. (1949). Consistency of the factorial structure of personality ratings from different sources. *Journal of Abnormal and Social Psychology*, *44*, 329–344.
- Fox, N. A., & Davidson, R. J. (1984). Hemispheric substrates of affect: A developmental model. In N. A. Fox & R. J. Davison (Eds.), *The psychology of affective development* (pp. 353–382). Hillsdale, NJ: Erlbaum.
- Gergen, K. J., Gergen, M. M., & Meter, K. (1972). Individual orientations to prosocial behavior. *Journal of Social Issues*, *28*, 105–130.
- Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2, pp. 141–165). Beverly Hills, CA: Sage.
- Goldberg, L. R. (1992). The development of markers for the big-five factor structure. *Journal of Personality and Social Psychology*, *4*, 26–42.
- Graziano, W. G. (1994). The development of agreeableness as a dimension of personality. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds.), *The developing structure*

- of temperament and personality from infancy to adulthood* (pp. 339–354). Hillsdale, NJ: Erlbaum.
- Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology*, 70(4).
- Graziano, W. G., Jensen-Campbell, L. A., Steele, R. G., & Hair, E. C. (1996, February 7). *Unknown words in self-reported personality: Lethargic and provincial in Texas*. Unpublished manuscript, Texas A&M University, College Station.
- Graziano, W. G., Jensen-Campbell, L. A., Todd, M., & Finch, J. F. (in press). Interpersonal attraction from an evolutionary psychology perspective. In J. A. Simpson & D. T. Kenrick (Eds.), *Evolutionary social psychology*. Hillsdale, NJ: Erlbaum.
- Hamilton, W. D. (1964). The genetical evolution of social behavior. *Journal of Theoretical Biology*, 7, 1–52.
- Hampson, R. B. (1984). Adolescent prosocial behavior: Peer group and situational factors associated with helping. *Journal of Personality and Social Psychology*, 46, 153–162.
- Hill, J. (1984). Human altruism and sociocultural fitness. *Journal of Social and Biological Structures*, 7, 17–35.
- Hoffman, M. L. (1981). Is altruism part of human nature? *Journal of Personality and Social Psychology*, 40, 121–137.
- Hoffman, M. L. (1984). Interaction of affect and cognition in empathy. In C. E. Izard, J. Kagan, & R. B. Zajonc (Eds.), *Emotions, cognition, and behavior* (pp. 103–131). Cambridge, MA: Cambridge University Press.
- Hogan, R. T. (1983). A socioanalytic theory of personality. In M. Page (Ed.), *Nebraska Symposium on Motivation: Personality-Current theory and research* (pp. 58–89). Lincoln: University of Nebraska Press.
- Horney, K. (1945). *Our inner conflicts*. New York: Norton.
- Houts, A. C., Cook, T. D., & Shadish, W. R., Jr. (1986). The person-situation debate: A critical multiplist perspective [Special issue]. *Journal of Personality*, 54, 52–105.
- Infante, D. A., & Rancer, A. S. (1982). A conceptualization and measure of argumentativeness. *Journal of Personality Assessment*, 46, 72–80.
- Jacobs, R. C., & Campbell, D. T. (1961). The perpetuation of an arbitrary tradition through several generations of a laboratory micro-culture. *Journal of Abnormal and Social Psychology*, 62, 649–658.
- Jensen-Campbell, L. A., Graziano, W. G., & Hair, E. C. (1996). Personality and relationships as moderators of interpersonal conflict in adolescence. *Merrill-Palmer Quarterly*, 42, 148–163.
- Jensen-Campbell, L. A., Graziano, W. G., & West, S. G. (1995). Dominance, prosocial orientation, and female preferences: Do nice guys finish last? *Journal of Personality and Social Psychology*, 68, 427–440.
- John, O. P. (1990). The big five-factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality theory and research* (pp. 261–277). New York: Guilford Press.
- John, O. P., Angleitner, A., & Ostendorf, F. (1988). The lexical approach to personality: A historical review of trait taxonomic research. *European Journal of Personality*, 2, 171–203.
- Johnson, J. A., & Ostendorf, F. (1993). Clarification of the five factor model with the abridged big five-dimensional circumplex. *Journal of Personality and Social Psychology*, 55, 824–835.

- Kinsbourne, M., & Bemporad, B. (1984). Lateralization of emotion: A model and the evidence. In N. A. Fox & R. J. Davidson (Eds.), *The psychology of affective development* (pp. 259–292). Hillsdale, NJ: Erlbaum.
- Knight, G. P., Johnson, L. G., Carlo, G., & Eisenberg, N. (1994). A multiplicative model of the dispositional antecedents of a prosocial behavior: Predicting more of the people more of the time. *Journal of Personality and Social Psychology*, *66*(1), 178–183.
- Konner, M. (1975). Relations among infants and juveniles in comparative perspective. In M. Lewis & L. A. Rosenblum (Eds.), *Friendship and peer relations* (pp. 100–130). New York: Wiley.
- Krebs, D. L., & Miller, D. T. (1985). Altruism and aggression. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 2, pp. 1–71). New York: Random House.
- Larrieu, J. A. (1984, March). *Prosocial values, assertiveness, and sex: Predictors of children's naturalistic helping*. Paper presented at the biennial meeting of the Southwestern Society for the Research in Human Development, Denver, CO.
- Larrieu, J., & Mussen, P. (1986). Some personality and motivational correlates of children's prosocial behavior. *Journal of Genetic Psychology*, *147*, 529–542.
- Leary, T. (1957). *Interpersonal diagnosis of personality*. New York: Ronald Press.
- Loehlin, J. C. (1992). *Genes and environment in personality development*. Newbury Park, CA: Sage.
- Loehlin, J. C., & Nichols, R. C. (1976). *Heredity, environment, and personality*. Austin: University of Texas Press.
- MacDonald, K. (1984). An ethological-social learning theory of the development of altruism. Implications for human sociobiology. *Ethology and Sociobiology*, *5*, 97–109.
- Matthews, K. A. (1988). Coronary heart disease and Type A behaviors: Update on an alternative to the Booth-Kewley and Friedman (1987) quantitative review. *Psychological Bulletin*, *104*, 373–380.
- Matthews, K. A., Batson, C. D., Horn, J., & Rosenman, R. H. (1981). "Principles in his nature which interest him in the fortune of others . . .": The heritability of empathic concern for others. *Journal of Personality*, *49*, 237–247.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *53*, 81–90.
- McCrae, R. R., & Costa, P. T., Jr. (1989a). Reinterpreting the Myers-Briggs Type Indicator from the perspective of the five-factor model of personality. *Journal of Personality*, *57*, 17–40.
- McCrae, R. R., & Costa, P. T., Jr. (1989b). The structure of interpersonal traits: Wiggins' circumplex and the five-factor model. *Journal of Personality and Social Psychology*, *56*, 586–595.
- McGarth, J. E. (1964). *Social psychology: A brief introduction*. New York: Holt, Rinehart & Winston.
- Midlarsky, E., & Hannah, M. E. (1985). Competence, reticence, and helping by children and adolescents. *Developmental Psychology*, *21*, 534–541.
- Moore, B. S., & Eisenberg, N. (1984). The development of altruism. In G. Whitehurst (Ed.), *Annals of child development* (pp. 107–174). Greenwich, CT: JAI Press.
- Murphy, L. B. (1937). *Social behavior and child personality*. New York: Columbia University Press.

- Mussen, P., & Eisenberg-Berg, N. (1977). *Caring, sharing, and helping: The development of prosocial behavior in children*. San Francisco: Freeman.
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology*, *66*, 574-583.
- Norman, W. T., & Goldberg, L. R. (1966). Raters, ratees, and randomness in personality structure. *Journal of Personality and Social Psychology*, *4*, 681-691.
- Oliner, S. P., & Oliner, P. M. (1988). *The altruistic personality: Rescuers of Jews in Nazi Europe*. New York: Free Press.
- Panskepp, J. (1986). The neurochemistry of behavior. *Annual Review of Psychology*, *37*, 77-107.
- Peabody, D., & Goldberg, L. R. (1989). Some determinants of factor structure from personality-trait descriptors. *Journal of Personality and Social Psychology*, *57*, 532-567.
- Penner, L. A., & Fritzsche, B. A. (1993, August). *Measuring the prosocial personality: Four construct validity studies*. Paper presented at the annual meeting of the American Psychological Association, Toronto, Canada.
- Penner, L. A., Michael, D. E., & Brookmire, D. A. (1979). Pre- and anti-social behavior as a function of cost estimates and personality and situational variables. *Multivariate Experimental Clinical Research*, *4*, 111-124.
- Perry, D. G., & Perry, L. C. (1974). Denial of suffering in the victim as a stimulus to violence in aggressive boys. *Child Development*, *45*, 55-62.
- Perry, D. G., Williard, J., & Perry, L. C. (1990). Peers perceptions of the consequences that victimized children provide aggressors. *Child Development*, *61*, 1310-1325.
- Peterson, L. (1983). Influences of age, task competence, and responsibility focus on children's altruism. *Developmental Psychology*, *19*, 141-148.
- Plomin, R. (1986). *Development, genetics, and psychology*. Hillsdale, NJ: Erlbaum.
- Pomazal, R. J., & Jaccard, J. J. (1976). An information approach to altruistic behavior. *Journal of Personality and Social Psychology*, *33*, 317-326.
- Radke-Yarrow, M., & Zahn-Waxler, C. (1984). Roots, motives, and patterns in children's prosocial behavior. In E. Staub, D. Bar-Tal, J. Karylowski, & J. Reykowski (Eds.), *Development and maintenance of prosocial behavior: International perspectives* (pp. 81-99). New York: Plenum Press.
- Radke-Yarrow, M., Zahn-Waxler, C., & Chapman, M. (1983). Children's prosocial dispositions and behaviors. In P. H. Mussen (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (pp. 469-545). New York: Wiley.
- Raven, B. H., & Rubin, J. Z. (1983). *Social psychology* (2nd ed.). New York: Wiley.
- Renken, B., Egeland, B., Marvinney, D., Manglsdorf, S., & Sroufe, L. A. (1989). *Early childhood antecedents of aggression and passive-withdrawal in early elementary school [Special issue]*. *Journal of Personality*, *57*, 257-282.
- Rholes, S. W., & Bailey, S. (1983). The effect of level of moral reasoning in consistency between moral attitudes and related behaviors. *Social Cognition*, *2*, 32-48.
- Robson, R. K., & Moss, H. A. (1970). Patterns and determinants of maternal attachment. *Journal of Pediatrics*, *77*, 976-985.
- Romer, D., Gruder, C. L., & Lizzardo, T. (1986). A person-situation approach to altruistic behavior. *Journal of Personality and Social Psychology*, *51*, 1001-1012.
- Rosenhan, D. L. (1970). The natural socialization of altruistic autonomy. In J. Macaulay & L. Berkowitz (Eds.), *Altruism and helping behavior* (pp. 251-268). New York: Academic Press.

- Rosenman, R. H. (1978). The interview method of assessment of the coronary-prone behavior pattern. In T. M. Dembroski, S. M. Weiss, J. L. Shields, S. G. Haynes, & M. Feinleib (Eds.), *Coronary-prone behavior* (pp. 55–69). New York: Springer-Verlag.
- Rothbart, M. K. (1989). Biological processes in temperament. In G. A. Kornstramm, J. Bates, & M. K. Rothbart (Eds.), *Handbook of temperament in childhood* (pp. 77–110). Sussex, England: Wiley.
- Rowe, D., & Plomin, R. (1977). Temperament in early childhood. *Journal of Personality Assessment*, *41*, 150–156.
- Rushton, J. P. (1980). *Altruism, socialization, and society*, Englewood Cliffs, NJ: Prentice-Hall.
- Rushton, J. P., Chrisjohn, R. D., & Fekken, G. C. (1981). The altruistic personality and the self-report altruism scale. *Personality and Individual Differences*, *2*, 1–11.
- Rushton, J. P., Fulker, D. W., Neal, M. C., Nias, D. K. B., & Eysenck, H. J. (1986). Altruism and aggression: The heritability of individual differences. *Journal of Personality and Social Psychology*, *50*, 1192–1198.
- Rushton, J. P., Littlefield, C. H., & Lumsden, C. J. (1986). Gene-culture coevaluation of complex social behavior: Human altruism and mate choice. *Proceedings of the National Academy of Sciences of the U.S.A.*, *83*, 7340–7343.
- Rushton, J. P., Russell, R. J. H., & Wells, P. A. (1984). Genetic similarity theory: Beyond kin selection. *Behavior Genetics*, *14*, 179–193.
- Savin-Williams, R. C. (1987). *Adolescence: An ethological perspective*. New York: Springer-Verlag.
- Savin-Williams, R. C., Small, S. A., & Zeldin, R. S. (1981). *Ethology and Sociobiology*, *2*, 167–176.
- Schachter, S. (1951). Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology*, *46*, 190–207.
- Schwartz, S. H., & Howard, J. A. (1981). In J. P. Rushton & R. M. Sorrentino (Eds.), *Altruism and helping behavior* (pp. 189–211). Hillsdale, NJ: Erlbaum.
- Schwartz, S. H., & Howard, J. A. (1984). Internalized values as motivators of altruism. In E. Staub, D. Bar-Tal, J. Karylowski, & J. Reykowski (Eds.), *International perspectives on positive development* (pp. 229–255). New York: Plenum Press.
- Small, S. A., Zeldin, R. S., & Savin-Williams, R. C. (1983). In search of personality traits: A multimethod analysis of naturally occurring prosocial and dominance behavior. *Journal of Personality*, *51*, 1–16.
- Smith, S. S., & Kihlstrom, J. F. (1987). When is a schema not a schema? The Big Five traits as cognitive structures. *Social Cognition*, *5*, 26–57.
- Snyder, M., & Ickes, W. (1985). Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed. Vol. 2, pp. 1–71). New York: Random House.
- Staub, E. (1974). Helping a distressed person: Social, personality, and stimulus determinants. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 7, pp. 293–341). New York: Academic Press.
- Staub, E. (1978). Positive social behavior and morality: *Social and personal influences* (Vol. 1). New York: Academic Press.
- Staub, E. (1986). A conception of the determinants and development of altruism and aggression: Motives, the self, and the environment. In C. Zahn-Waxler, E. M. Cummings, & R. Iannotti (Eds.), *Altruism and aggression: Biological and social origins* (pp. 135–164). Cambridge, England: Cambridge University Press.

- Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma & J. D. Maser (Eds.), *Anxiety and anxiety disorders* (pp. 681–706). Hillsdale, NJ: Erlbaum.
- Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology*, 46, 35–57.
- Tupes, E. C., & Cristal, R. E. (1961). *Recurrent personality factors based on trait ratings* (USAF ASD Tech. Rep. No. 61–97). Lackland Air Force Base, TX: U.S. Air Force.
- Underwood, B., & Moore, B. (1982). Perspective-taking and altruism. *Psychological Bulletin*, 91, 143–173.
- Watson, D. (1989). Strangers' ratings of the five robust personality factors: Evidence of a surprising convergence with self-report. *Journal of Personality and Social Psychology*, 57, 120–128.
- West, S. G., & Graziano, W. G. (1989). Long-term stability of personality: An introduction. *Journal of Personality*, 57, 175–193.
- White, G. M. (1980). Conceptual universals in interpersonal language. *American Anthropologist*, 82, 759–781.
- Whiting, B. B., & Whiting, J. W. M. (1975). *Children of six cultures*. Cambridge, MA: Harvard University Press.
- Wiggins, J. S. (1980). Circumplex models of interpersonal behavior. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2, pp. 265–294). Beverly Hills, CA: Sage.
- Wiggins, J. S. (1991). Agency and communion as conceptual coordinates for the understanding and measurement of interpersonal behavior. In D. Cicchetti & W. Grove (Eds.), *Thinking critically in psychology: Essays in honor of Paul E. Meehl* (pp. 89–113). New York: Cambridge University Press.
- Wiggins, J. S., Broughton, R. (1985). The Interpersonal Circle: A structural model for the integration of personality research. In R. Hogan & W. H. Jones (Eds.), *Perspectives in personality* (Vol. 1, pp. 1–47). Greenwich, CT: JAI Press.
- Wilder, D. A. (1986). Social categorization: Implications for the creation and reduction of intergroup bias. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 293–356). Orlando, FL: Academic Press.
- Wynne-Edwards, V. C. (1962). *Animal dispersion in relation to social behavior*. New York: Harper.
- Zahn-Waxler, C., Robinson, J. L., & Emde, R. N. (1992). The development of empathy in twins. *Developmental Psychology*, 28, 1038–1047.
- Zajonc, R. B., & Markus, H. (1984). Affect and cognition: The hard interface. In C. E. Izard, J. Kagan, & R. B. Zajonc (Eds.), *Emotions, cognition, and behavior* (pp. 73–102). Cambridge, England: Cambridge University Press.
- Zeldin, R. S., Small, S. A., & Savin-Williams, R. C. (1982). Prosocial interactions in two mixed-sex adolescent groups. *Child Development*, 53, 1492–1498.
- Zuckerman, M., & Reis, H. T. (1978). Comparison of three models for predicting altruistic behavior. *Journal of Personality and Social Psychology*, 36, 498–510.

# CONCEPTIONS AND CORRELATES OF OPENNESS TO EXPERIENCE

ROBERT R. McCRAE AND PAUL T. COSTA, JR.

GERONTOLOGY RESEARCH CENTER, NATIONAL INSTITUTE ON AGING,  
NATIONAL INSTITUTES OF HEALTH, BALTIMORE, MARYLAND

Personality traits are normally defined as dimensions of individual difference, and they are often first recognized by noting groups of individuals who are conspicuously different. Much of personality psychology has been devoted to an attempt to understand psychopathology, because phobics, hypochondriacs, and suicides are so distressingly different from the rest of us.

Artists and poets form another group long held to be different, if not deviant. They are remarkable for their specific artistic talents, but they are also characterized by a set of mental, emotional, and attitudinal characteristics that set them apart (MacKinnon, 1962). Think of Leonardo da Vinci, of Beethoven, or of Whitman: They are all dreamers with keen imaginations, seeing possibilities that others miss. They are sensitive and passionate, with a wide and subtle range of emotional reactions. They are adventurous, bored by familiar sights, and stifled by routine. They have an insatiable curiosity, as if they retained into adulthood the child's wonder at the world. And they are unorthodox, free-thinking, and prone to flout convention.

As neurotics can be used as exemplars of high scorers on the dimension of Neuroticism, so artists can be considered prime examples of individuals high in Openness to Experience. Few people have the gifts needed to be a creative artist, but many people have the dispositions. Indeed, recent research suggests that Openness to Experience is one of the fundamental dimensions of personality (McCrae,

1993–1994, 1994), relevant not only to an understanding of the artistic temperament, but also to such diverse issues as social attitudes, hypnotizability, career changes, and moral reasoning. And although it is convenient to use the artist as an exemplar of Openness and to refer to “open” and “closed” individuals, it must be remembered that Openness refers to a continuum of individual differences in processing experience, and that the majority of people are intermediate in Openness.

In this chapter we review the empirical literature on Openness as a fundamental dimension of personality, but our major focus is on the conceptualization of Openness. We will argue that Openness cannot be understood as the culture that is acquired through education or good breeding, nor as intellect or any other cognitive ability. Instead, we will suggest that Openness must be viewed in both structural and motivational terms. Openness is seen in the breadth, depth, and permeability of consciousness, and in the recurrent need to enlarge and examine experience.

A caution to the reader is in order: The concept of Openness appears to be unusually difficult to grasp. Among personality psychologists, it is the most controversial of the five basic factors of personality (McCrae & John, 1992), and lay raters appear to have preconceptions about Openness that are inconsistent with psychological definitions (Funder & Sneed, 1993). But data provide abundant support for the construct, and an increasing number of psychologists have adopted it (e.g., John, 1990). Here is a construct that must be approached with an open mind and a willingness to learn new ways of thinking about people.

## I. OPENNESS AS A BASIC DIMENSION OF PERSONALITY

Isolated parts of the broad domain of Openness have long been recognized in psychology. Authoritarianism (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950/1969) was once a major research topic for personality psychologists; exploratory behavior has been a fixture of animal research since the 1950s (Berlyne, 1955); Rogers' (1961) theory of psychotherapy was based on generating conditions to enhance openness to feelings; private self-consciousness (Fenigstein, Scheier, & Buss, 1975) has recently attracted much attention. However, these traits have rarely been seen as aspects of a broader and more basic dimension of Openness. A few researchers have pointed to such a dimension, although with somewhat different labels. There appear to have been four relatively independent discoveries of the dimension we call Openness.

1. Working from Cattell's (1946) distillation of the personality sphere as represented in natural language traits and in psychological tests, Fiske (1949) and later Tupes and Christal (1961/1992) and Norman (1963) reported five robust factors which have come to be called the Big Five (John, Angleitner, & Ostendorf, 1988) and form the basis of the five-factor model of personality (McCrae & Costa, 1987). The fifth factor was called *Culture* by both Tupes and Christal and Norman; Fiske



had also considered the label *Cultured* before adopting the phrase *Inquiring Intellect*. As typically construed within the Big Five tradition, this factor is focused on intelligence or intellectual activity, but includes cultural sophistication and imagination. Goldberg (1981) found a similar factor in his analyses of English language adjectives and called it *Intellect*; Hogan (1986), strongly influenced by Big Five research, included a measure of *Intellectance* in his personality inventory.

2. Tellegen and Atkinson (1974) began with an analysis of measures which had been empirically linked to hypnotic susceptibility. In a joint analysis with measures of ego resiliency and control, they found three replicable factors which they interpreted as Stability (the opposite pole of Neuroticism), Introversion (versus Extraversion), and “openness to absorbing and self-altering experiences,” or Absorption; only Absorption was related to hypnotic susceptibility. The Absorption factor was defined by scales measuring reality absorption, fantasy absorption, dissociation, devotion-trust, autonomy, and openness to experience. Tellegen and Atkinson explicitly noted the breadth of their Absorption factor: “it exemplifies the combination of *substantive divergence* and *structural convergence* that is suggestive of a major dimension” (p. 273), and they described cognitive and motivational-affective components. They concluded that Absorption was best interpreted as a capacity for absorbed and self-altering attention, found in peak and mystical experiences, hypnosis, and artistic creativity.

3. Coan (1974) was concerned with what he called the *optimal personality*, and he examined characteristics identified in a wide range of personality theories. He drew upon the work of Fitzgerald (1966) to measure the scope of awareness. Fitzgerald had been concerned with questionnaire assessment of the psychoanalytic concept of regression in service of the ego (Kris, 1952), and many of his items concerned regressive behavior and experience. Coan added other questions with a less pathological cast and found a general factor of openness in an analysis of the items. Coan reported that his Experience Inventory items were correlated with “measures that suggest emotional sensitivity, aesthetic interests, liberalism, and independence” and “a certain intellectual and emotional flexibility” (pp. 80–81). Because both Fitzgerald (1966) and Tellegen and Atkinson (1974) had drawn on the earlier work of Ås, O’Hara, and Munger (1962), these research lines are not strictly independent. It is noteworthy, however, that Tellegen and Atkinson focused on the depth and intensity of attention, whereas Coan was impressed by the scope of awareness in Open individuals.

4. Looking for age differences in personality structure, Costa and McCrae (1976) clustered the scales of the Sixteen Personality Factor Questionnaire (16PF; Cattell, Eber, & Tatsuoka, 1970). In addition to Neuroticism and Extraversion clusters, they found that scales B (intelligence), I (tender-mindedness), M (imagination), and Q1 (liberal thinking) formed a loose cluster in some age groups. They interpreted this cluster as Openness to Experience, and continued research on the dimension using a modification of Coan’s scales. An Experience Inventory (EI; Costa & McCrae, 1978) was created to measure Openness in the areas of fantasy, aesthetics, feelings, actions, ideas, and values. When jointly factored with 16PF

scales, a reasonably clear Openness factor was found, defined by 16PF B, M, and Q1 scales and Experience Inventory Fantasy, Aesthetics, Actions, Ideas, and Values scales. The EI scales were revised and ultimately incorporated in the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992a), a questionnaire measure of the five-factor model. Factor analytic studies of the NEO-PI-R (Costa & McCrae, 1992b; Costa, McCrae, & Dye, 1991) show that the six Openness scales consistently define a separate factor in men and women, in young adults and old, and in self-reports and observer ratings.

Because the total NEO-PI Openness score is significantly and substantially related to Tellegen and Atkinson's Absorption, Goldberg's Intellect, and Norman's Culture (McCrae & Costa, 1985a), it appears that the lexical tradition and the ego regression traditions have converged in the identification of a broad and basic dimension of personality. Other studies of the five-factor model have also supported this conclusion. For example, when the 100 items of Block's (1961) California Q-Set (CQS) were factored, one of the five factors contrasted "Values intellectual matters," "Rebellious, non-conforming," and "Unusual thought processes" with "Favors conservative values," "Judges in conventional terms," and "Uncomfortable with complexities"; this factor correlated .62 with NEO-PI Openness scores (McCrae, Costa, & Busch, 1986). Similarly, Amelang and Borkenau (1982) found a factor they called *Unabhängigkeit der Meinungsbildung* (Independence of Judgment) in analyses of questionnaires and adjectives in a German sample. A wealth of more specific correlates of Openness have been identified; some of these are summarized in Table I (see also McCrae, 1993-1994).

## II. TRADITIONAL CONCEPTIONS OF OPENNESS

Convergence on an empirical level has not been matched by convergence on a conceptual level. Indeed, there is not even widespread agreement on the label to use for this dimension (Saucier, 1992). Goldberg (1981) and Digman and Inouye (1986) preferred the term *Intellect*; Norman (1963) used *Culture*; and the corresponding factor (McCrae & Costa, 1989b) is identified as *Sensation versus Intuition* in the Myers-Briggs Type Indicator (MBTI; Myers & McCaulley, 1985). It is understandably difficult to sum up one of the broadest constructs in personality psychology in a single word, but the choice of labels is important. As Digman (1987) pointed out, researchers like Guilford, Eysenck, and Cattell assumed that intellectual interests were a reflection of intelligence and could best be measured by intelligence tests. Measures of the disposition of Openness were thus relatively neglected by these influential factorists.

The term *Openness to Experience* has its disadvantages, too. Especially when abbreviated as *Openness*, it may suggest the rather different trait of interpersonal openness or self-disclosure (Jourard, 1964). Openness may also suggest a passive or uncritical receptivity, which is clearly inappropriate. Open people actively seek

**TABLE I**  
Selected Correlates of Self-reports on the NEO Personality Inventory (NEO-PI) Openness Scale in Baltimore Longitudinal Study of Aging Samples

Criterion	<i>N</i>	<i>r</i>
Observer ratings		
Spouse-rated NEO-PI Openness	144	.60
Mean peer-rated NEO-PI Openness	213	.60
CQS items		
Aesthetically reactive	254	.40
Skilled in play and humor	254	.33
Judges in conventional terms	254	-.41
Favors conservative values	254	-.40
Bipolar Adjective Scales		
Uncurious–Curious	375	.30
Uncreative–Creative	375	.34
Imperceptive–Perceptive	375	.29
Simple–Complex	375	.35
SDS Occupations		
Anthropologist	275	.36
Author	275	.43
Journalist	275	.38
Sculptor/sculptress	275	.31
Revised CPI Scales <sup>a</sup>		
Social Presence	348	.42
Empathy	348	.43
Achievement via Independence	348	.41
Flexibility	348	.42
PRF Needs		
Change	296	.40
Sentience	296	.55
Understanding	296	.54
ACL Creative Personality Scale	310	.46
GZTS Thoughtfulness	275	.35
MBTI Sensation–Intuition	468	.73
Haan Coping Scales		
Intellectuality	348	.45
Logical Analysis	348	.48
Regression in Service of the Ego	348	.34
Suppression	348	-.12
Sensation Seeking Scales V		
Thrill and Adventure Seeking	312	.34
Experience Seeking	312	.55
Disinhibition of Impulses	312	.28
Boredom Susceptibility	312	.20

*Note.* All *ps* < .05. CQS, California Q-Set; CPI, California Psychological Inventory; PRF, Personality Research Form; GZTS, Guilford–Zimmerman Temperament Survey; MBTI, Myers–Briggs Type Indicator; SDS, Self-Directed Search. (Data adapted from Costa & McCrae, 1988a, 1988b; Costa, McCrae, & Holland, 1984; McCrae, 1987, 1990; McCrae & Costa, 1985b, 1987; McCrae, Costa, & Busch, 1986; McCrae, Costa, & Piedmont, 1993).

<sup>a</sup> Correlations are with Openness factor scores.

out experience and are apt to be particularly reflective and thoughtful about the ideas they encounter.

Whatever label we select will be insufficient to communicate the construct fully. For that we must rely on exemplars, like artists and poets; on an analysis of the elements or facets that combine to form the broad domain (cf. Briggs, 1989); and on a network of empirical correlates and outcomes associated with high or low standing on the dimension. In addition, however, it would be useful to have a conceptual definition, a theory of openness, that can help explain why people differ in Openness. Let us turn now to a consideration of some possible ways of construing Openness.

### A. Openness as Culture

The term *Culture* was selected by Tupes and Christal (1961/1992) because it seemed to sum up the elements “intellectual, cultured,” “esthetically fastidious,” “imaginative,” and “polished,” in contrast to “boorish,” “practical, logical,” and “clumsy, awkward.” Given these definers, the label seems apt; they have a peculiarly high-brow cast that suggests that the dimension may reflect differences in social class and breeding. If this characterization had been confirmed by subsequent research, the topic of Openness would perhaps have belonged in a handbook of sociology, not personality psychology. However, Tupes and Christal reported that this was the least clear of the five factors in their analyses, and subsequent studies have suggested that the elements of polish and sophistication are far less central to the dimension than intellectual and aesthetic interests and imagination (McCrae, 1990; McCrae & Costa, 1987; Peabody & Goldberg, 1989).

The label *Culture* suggests that this aspect of personality is the result of education—particularly the liberal education that has long been the central ideal of Western universities. Among the distinctive elements of this approach are exposure to a broad range of ideas, cultivation of both arts and sciences, and encouragement of a critical attitude with regard to accepted values and assumptions. Clearly, a liberal education will be most congenial to those who are by disposition open to experience.

The extent to which a liberal education is indeed broadening is an empirical question; there is some evidence in support of this premise (e.g., Webster, Freedman, & Heist, 1962). But education itself probably plays only a minor role in the development of Openness. In a national survey of nearly 10,000 men and women over the age of 35, a short scale measuring Openness showed only a modest correlation with years of education,  $r = .28$ ,  $p < .001$  (Costa et al., 1986). Education was neither necessary nor sufficient for Openness. About one-third of respondents with an eighth-grade education or less scored above the median on Openness; conversely, about one-third of respondents with some college education scored below the median. Individuals who are open without having had the benefits of formal education may be culturally unsophisticated—they may be deeply moved by the verses on greeting cards—but from a psychological perspective, they are open nonetheless.

Conversely, highly educated individuals may show the trappings of culture (attending museums, lectures, and concerts) without a deep appreciation of the experiences these events provide.

Formal education, of course, is not the only source of culture; family influences might also be important in modeling and encouraging breadth of interest and tolerant attitudes. As Rogerians might expect, loving and lenient parents tend to have children who are higher in Openness, but the association is very modest in magnitude (McCrae & Costa, 1988). By contrast, there was evidence of a strong heritable component of Openness in a study of adult Swedish twins (Bergeman et al., 1993), and Tellegen and his colleagues (1988) reported similar findings for Absorption in an American sample. These studies suggest that it may be wise to reverse the causal interpretation of the association of education with Openness: The intellectual interests of open men and women may lead them to seek higher levels of education.

### **B. Openness as Cognitive Ability**

Perhaps the most popular alternative label for the dimension we have called Openness to Experience is some form of the word *Intellect*, which is defined as “the ability to learn and reason . . . [and the] capacity for knowledge and understanding” (Morris, 1976, p. 682). This definition suggests that the trait domain under consideration is best viewed as a set of cognitive abilities. Studies of trait adjectives show that such terms as *intelligent*, *perceptive*, *knowledgeable*, and *analytical* are among the definers of the factor—indeed, they are the chief definers in some studies (Angleitner & Ostendorf, 1989; Goldberg, 1989). The interest that open individuals have in a wide range of experiences might be understood as the result of their facility in handling information; certainly intellectual interests tend to follow abilities. Further, studies have shown that Openness, alone of the five factors, is positively related to psychometric measures of intelligence and other cognitive abilities (e.g., McCrae, 1987). The heritability of Openness might be explained by the heritability of intelligence. Psychologists have spent more time and effort studying intelligence than any other trait; by adopting the term *Intellect*, personality psychologists could claim this vast literature as their own. Openness could be construed as intelligence itself, or, as Cattell suggested, as the reflection of intelligence in the personality sphere.

Despite these temptations, there are five reasons to reject the label *Intellect* and the interpretation it suggests:

1. Factor analytic studies of natural language adjectives are inconclusive and suggest that rated intelligence may mark not one but two factors. As in all factor analyses, the nature of the factors depends chiefly on the variables included. Researchers like Borgatta (1964), convinced a priori of the interpretation of the factor as intelligence, included markers reflecting this interpretation (*intelligent*, *rational and logical*, *clear minded*, *alert*, *mature*). Researchers with a broader conception of

the factor included variables such as *imaginative*, *prefer variety*, *original*, and *artistic*, and found a correspondingly different factor (e.g., McCrae & Costa, 1985b). One way to avoid the possible biases of variable selection is to attempt to obtain a representative sample of adjectives. Goldberg's (1989) work in this regard has led him to a factor he characterizes as *Intellect*; Peabody's (1987) analyses of semantic similarity judgments recovered a factor he identified as *Openness to Experience*. Both these efforts were based on the assumption that the English language adequately represents all important personality traits in single adjectives, but that assumption has been questioned (McCrae, 1990). For example, the phrase "prefers variety," which corresponds to the widely researched trait of novelty-seeking or need for variety (Maddi & Berne, 1964), apparently has no counterpart in natural language adjectives.

Further, studies that include ability terms like *intelligent* typically find that these items have substantial secondary loadings on the *Conscientiousness* factor. Table II confirms this by showing loadings for variables related to rated intelligence on both *Openness* and *Conscientiousness* factors. Rated intelligence appears to be related to both factors in peer ratings, self-reports, and semantic similarity judgments. Conceptually, this is perfectly reasonable. Individuals may be considered intelligent for either (or both) of two reasons: they may be intellectually curious, imaginative, and inventive, or they may be efficient, well-organized, competent, and careful in their work. From this perspective, the label *Intellect* is too broad, because it encompasses and confounds aspects of two basically independent domains.

2. In another respect, *Intellect* is too narrow a label. Even if we include intellectual interests along with intellectual abilities, the range of phenomena known empirically to correlate with *Openness* would hardly be suggested by the term. Who would guess that individuals high in a factor labeled *Intellect* would be more easily hypnotized (Tellegen & Atkinson, 1974), more variable in mood (Wessman & Ricks, 1966), or more "skilled in play and humor" (cf. Table I)?

Open people are not only *able* to grasp new ideas, they *enjoy* doing so. The merely intelligent tend to have highly developed interests in specialized fields in which they excel; open people have a wide and ever-increasing range of interests. Further, these interests extend beyond intellectual pursuits. Open people want to taste different food, to see new sights, to reconsider their values, to develop elaborate fantasies. Cognitive abilities may in some degree facilitate this exploration of the world, but they are neither necessary nor sufficient for it.

Need for variety, tolerance of ambiguity, and preference for complexity all represent motivational aspects of *Openness*. In addition, open people can be characterized by their nontraditional attitudes, their rich and complex emotional lives, and their behavioral flexibility. Like the other four basic dimensions of personality, *Openness* is a broad constellation of traits with cognitive, affective, and behavioral manifestations. It cannot be reduced to a single underlying ability.

3. The empirical association of *Openness* with psychometric measures of intelligence is too weak to imply equivalence between the two constructs (McCrae,

**TABLE II**  
Loadings of Rated Intelligence Variables on Openness and Conscientiousness  
Factors in Selected Studies

Study	N	Factor	
		Openness	Conscientiousness
Norman (1963)			
Sample C ratings	215	74	47
Sample D ratings	241	84	10
Borgatta (1964)			
Female ratings	315	25	60
Male ratings	144	63	25
Conley (1985)			
Female self-reports	189	—	63
Male self-reports	189	—	25
McCrae & Costa (1985b, 1987)			
Self-reports	498	<40	44
Peer ratings	738	41	44
Peabody (1987)			
Internal analyses	—	66	54
Goldberg (1989)			
Self-reports (Table 6)	192	51	19
Self-reports (Table 7)	95	66	14
Self-reports (Table 8)	95	36	35
Self-reports (Table 9)	157	42	33
Self-reports, Study 6	215	59	18
Self-reports, Study 7	175	45	21
Median		51	33

*Note.* Decimal points are omitted. Conley (1985) did not report an Openness factor. Peabody's (1987) data are based on similarity judgments made by four raters.

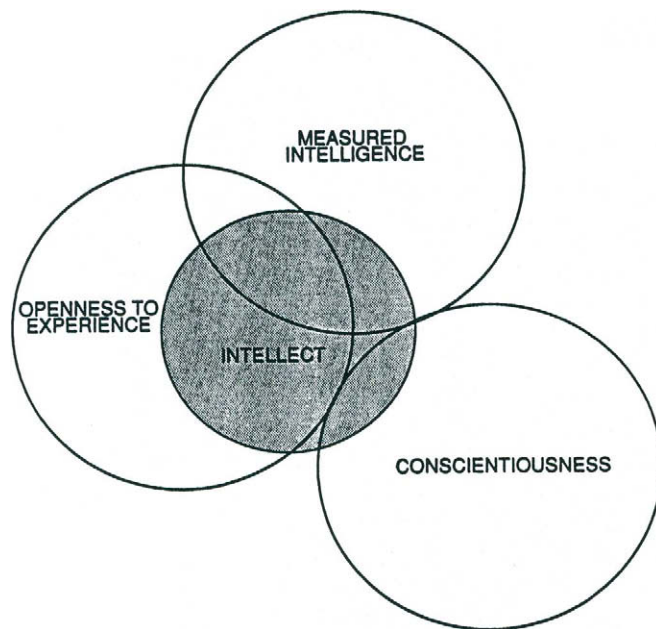
1993–1994). In a sample of men from the BLSA, correlations of .22 and .20 were found between NEO-PI Openness and WAIS Vocabulary and Total Army Alpha scores, respectively; further, when measures of personality and cognitive ability are factored jointly, six factors, not five, are recovered, with measured intelligence forming a distinct factor (McCrae, 1994; McCrae & Costa, 1985a, 1985b). The average participant in the BLSA receives high scores on measures of IQ, and somewhat larger correlations would probably be seen in unselected samples. But given the reliability of psychometric measures, even correlations of .30 or .40 would mean that most of the valid variance in intelligence is *not* related to Openness to Experience.

The one form of cognitive ability that does show somewhat stronger correlations with Openness is divergent thinking (McCrae, 1987). Correlations around .40 were consistently seen between a total divergent thinking score and a variety of

self-report and rating measures of Openness. We should not, however, discount the possibility that high scores on such tests may reflect motivational features of open people rather than ability: Curious and imaginative people may become more involved in tasks that require flexible and fluent thought. In any case, if an ability interpretation of Openness were to be advanced, Creativity would make a better label than Intellect.

The identification of Openness with Intellect may also be misleading with regard to assessment, because it suggests that Openness might be measured by psychometric tests. Given the relative reliabilities and validities of cognitive tests versus self-report questionnaires or ratings, this is a tempting alternative, and historically it has been extremely influential. Cattell, for example, included a measure of intelligence in his 16PF instead of asking questions about intellect. Eysenck (1991) also considered that this domain was adequately covered by cognitive measures. Of course, if Openness were equivalent to intelligence, this would be an appropriate decision. To the extent that Openness is something else, this approach ensures an incomplete assessment of personality.

Figure 1 summarizes the relations between Openness, Intellect, Intelligence, and Conscientiousness described in the preceding sections. Both the breadth and



**FIGURE 1** Schematic representation of relations among Openness to Experience, Measured Intelligence, Conscientiousness, and Intellect. Both Openness and Intellect are modestly related to Measured Intelligence. Some aspects of Intellect (*perceptive, curious*) are shared with Openness; others (*logical, foresighted*) are shared with Conscientiousness. Many elements in Openness (*liberal, adventurous, empathic*) are not included in Intellect.



As Coan (1974) noted, psychoanalysts have typically focused on psychopathology and on the restrictions in awareness brought about by the defensive processes of repression. A particular causal sequence is suggested by this model: intrapsychic conflicts lead to repression, which leads to limitations in the scope of awareness. Removing the conflicts should thus increase openness. This view is close to the one held by Rogers (1961), who viewed Openness as an outcome and reflection of mental health. Appealing as this formulation may be to both psychoanalysts and humanistic psychologists, it has two significant problems. First, Openness is unrelated to Neuroticism and most measures of mental health, meaning that poorly adjusted individuals are as likely to be open as are well-adjusted individuals (McCrae & Costa, 1985a). Second, it is difficult to explain the generality and pervasiveness of Openness from this perspective. In most psychoanalytic thought, defense mechanisms operate on specific conflicts or anxieties. It is understandable that an early trauma might leave a particular blind spot, but why should it also lead to conservative political views and indifference to art and beauty?

A more plausible dynamic model can be inferred from the writings of Frenkel-Brunswik in *The Authoritarian Personality* (Adorno et al., 1950/1969). This book was an ambitious—perhaps too ambitious—attempt to integrate political philosophy, social attitude research, and dynamic personality theory. Certainly no one today would advocate the use of the F Scale as a measure of Openness to Experience, but there can be little doubt that the high scorers on the Ethnocentrism and F scales studied by Adorno et al. were closed to experience (although they were also probably highly antagonistic). The CQS definers of low Openness (McCrae et al., 1986) in particular show an uncanny resemblance to authoritarian features: *favors conservative values; judges in conventional terms; uncomfortable with complexities; moralistic; sex-role stereotyped behavior; and even productive* (one of the few desirable characteristics attributed to authoritarians). Conversely, Frenkel-Brunswik noted that “there seems to be a general tendency on the part of low scores [non-authoritarians] to expose themselves to broad experience—emotional, cognitive, and perceptual—even at the risk of having to modify [their] preconceived notions and of having to sustain conflicts” (p. 464). The hypothesis that Openness is inversely related to authoritarianism is supported by evidence that Altemeyer’s (1981) Right-Wing Authoritarianism scale is related to total NEO-PI-R Openness,  $r = -.57$ , and all its facets,  $r_s = -.29$  to  $-.63$ ,  $N = 722$ ,  $p < .001$  (Trapnell, 1994).

Frenkel-Brunswik interpreted her findings in terms of lower defensiveness on the part of open people, an ability to allow into consciousness unacceptable or undesirable impulses. It is the denial of these impulses and affects in authoritarians that leads to the development of prejudice, through the operation of projection and externalization. “The resultant break between the conscious and unconscious layers in the personality of the high scorers, as compared with the greater fluidity of transition and of intercommunication between the different personality strata in the low scorers, appears to have the greatest implications for their personality patterns” (p. 474).

the relatively greater independence of the Openness construct suggest its superiority to Intellect as a basic dimension of personality.

4. But there are also other, pragmatic reasons for preferring the term *Openness*. Intellect and Openness have very different evaluative connotations. Individuals who are closed to experience would probably accept this designation; they are content to be down-to-earth and may be proud of their traditionalism. By contrast, no one wants to be called *stupid*. The highly evaluative term Intellect presents difficulties when feedback on personality is provided, as in client-centered assessment (Costa & McCrae, 1989; McReynolds, 1985). It may also suggest to psychologists that Openness is superior to Closedness. In fact, there are many advantages—both to the individual and to society—to being closed to experience. Both innovation and conservation are necessary processes in any culture and any individual life.

5. Finally, the identification of Openness with Intellect effectively short circuits research on personality and intelligence. No one is likely to do research on the question of whether Intellect contributes to the development of intelligence, but if we distinguish Openness from intelligence, we can ask whether the former affects or is affected by the latter—a question that might have profound consequences for developmental and educational psychology. The heuristic value of distinguishing such concepts is seen in the work of Welsh (1975) on the related constructs of orience and intellectence.

On empirical, conceptual, and heuristic grounds, then, it seems that Openness is a better label for this factor than Intellect. This phrasing also spares us some empirical embarrassments. For example, open individuals frequently entertain ideas that we would not readily associate with intelligence. Epstein (Epstein & Meier, 1989) has developed a scale measuring “beliefs in esoteric and dubious phenomena, such as astrology and the existence of ghosts” (p. 51). In a college sample, this Esoteric Thinking scale was substantially correlated with NEO-PI Openness,  $r = .47$ ,  $N = 59$ ,  $p < .001$ . It is far easier to see these beliefs as an outcome of open-mindedness than as a reflection of intelligence.

### III. ALTERNATIVE CONCEPTIONS: STRUCTURAL AND MOTIVATIONAL

#### A. Openness as Psychic Structure

As the consensual validation of Openness ratings across observers demonstrates, Openness is rather easily inferred from observable speech and behavior (McCrae & Costa, 1989a). But fundamentally Openness is a matter of inner experience, a mental phenomenon related to the scope of awareness or the depth and intensity of consciousness. It is therefore not surprising that much of the conceptual basis of this dimension comes from the work of dynamic psychologists, such as Adorno et al. (1950/1969), Kris (1952), and Rogers (1961), for whom the concept of consciousness was central.

However, Frenkel-Brunswik seems to have made a subtle but important distinction in the causal sequence envisioned. She did not suggest that authoritarians have more conflicts, but that they deal with conflicts in particular ways because of the structure of their consciousness. We might hypothesize that open men and women would intellectualize their conflicts, whereas closed men and women would repress or deny them. Projection may be used by closed individuals because they see the world simplistically in terms of good and bad, and it is easier to assume that others are bad and the self is good. Under this interpretation, authoritarianism (or closedness) is not the result of defense, but one of the determinants of the form of defense used. Repression and projection would then be seen not as causes of political conservatism and aesthetic insensitivity, but as correlates that share the same underlying cause: closedness to experience.

There is some empirical evidence for this position. Haan (1965) devised defense mechanism scales by empirically contrasting MMPI item responses of individuals clinically judged high or low in the use of various defenses; she created parallel coping mechanism scales from CPI items. Among the defense scales, Openness to Experience was positively related to Intellectualizing and negatively related to Denial (Costa, Zonderman, & McCrae, 1991). As Table I shows, Openness is also positively related to coping scales measuring Intellectuality and Logical Analysis, and negatively related to Suppression.

Table I shows that Openness is also related to Regression in Service of the Ego, a concept advanced by Kris (1952) to explain artistic creativity. Although described as a defense mechanism, it is clear that Regression in Service of the Ego is defined in structural rather than defensive terms. Kris suggested that some individuals can loosen the boundaries that separate mature, reality-oriented secondary process thinking from the prelogical, primary process thinking seen in dreams and psychotic delusions. This form of regression is adaptive, because primary process thinking is the source of creativity: the conventional associations between ideas and images are temporarily abandoned, leaving the mind free to try new associations. The artist then returns to secondary process thinking to select the useful products of this freer association and adapt them to the requirements of reality.

The consequences of permeable cognitive structures are not always adaptive. Hartmann, Russ, Oldfield, Siven, and Cooper (1987) studied chronic nightmare sufferers. They reported that their subjects were likely to be artists or students, and were described as being open, vulnerable, and defenseless "on the thin-boundary or permeable-boundary end of the continuum in all senses in which that term is used" (p. 56). (Hartmann, 1991, has gone on to develop his ideas about boundaries in the mind that provide a modern psychodynamic perspective on Openness.)

Similarly, recent studies have shown links between Openness and certain forms of cognitive aberration. West, Widiger, and Costa (1993) found that, among college students, NEO-PI-R Openness was associated with Perceptual Aberration and especially Magical Ideation scales (Chapman, Chapman, & Raulin, 1978; Eckblad & Chapman, 1983). Table III shows correlations of NEO-PI-R scales with measures of dissociation (Bernstein & Putnam's, 1986, DES; Riley's, 1988, QED)

**TABLE III**  
Correlations between NEO-PI-R Openness  
Scales and Measures of Dissociation and  
Eccentric Perceptions

NEO-PI-R Scale	DES	QED	EP
O1: Fantasy	.37***	.58***	.42***
O2: Aesthetics	.24**	.32***	.47***
O3: Feelings	.22*	.33***	.30***
O4: Actions	.13	.14	.12
O5: Ideas	.15	.30***	.32***
O6: Values	-.04	.10	-.03
Total Openness	.30***	.49***	.47***

*Note.*  $N = 127$ . DES, Dissociative Experiences Scale; QED, Questionnaire of Experiences of Dissociation; EP, Eccentric Perceptions. Data cited by permission from D. Watson, J. Harrison, and A. K. Slack, 1993, [*Measures of dissociation and their relation to general traits of personality*]. Unpublished raw data, University of Iowa.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

and eccentric perceptions as measured by the Schedule for Non-Adaptive and Adaptive Personality (Clark, 1993). Very open people appear to have some of the characteristics of schizotypal thinking; whether these are adaptive or maladaptive will probably depend on other aspects of personality and on the individual's social environment.

Perhaps the most highly developed version of the structural model of Openness is found in the work of Rokeach (1960), who argued that ideas, beliefs, and attitudes were structured differently in open and closed individuals. Highly dogmatic individuals were thought to have compartmentalized thinking in which inconsistent beliefs were isolated and discrepant information was summarily rejected. Individuals low in dogmatism were able to tolerate ambiguity and could gradually shift attitudes as the weight of evidence accumulated. Using Coan's Openness scale, Wyrick (1969) showed that open individuals in fact acknowledged more frequent revisions in attitudes than did closed individuals.

It appears that one useful and important way to characterize Openness is in terms of the structure of consciousness. Open individuals have access to more thoughts, feelings, and impulses in awareness, and can maintain many of these simultaneously. Tolerance of ambiguity, emotional ambivalence, and perceptual synesthesia are all hallmarks of the open person. The capacity for absorption, for deeply focused attention, may be a result of this structure. For the closed individual, ideas, feelings, and perceptions are relatively isolated and must compete for full

attention. For the open individual, all these elements may be simultaneously in awareness, providing a deeper and more intense experience.

### **B. Openness as Need for Experience**

A structural account of Openness may be necessary, but it does not seem to be sufficient. Open people are not the passive recipients of a barrage of experiences they are unable to screen out; they actively seek out new and varied experiences. Openness involves motivation, needs for variety (Maddi & Berne, 1964), cognition (Osberg, 1987), sentience, and understanding (Jackson, 1984). This active pursuit of experience can be seen in all the facets of Openness. Closed individuals may have daydreams, but they are likely to be conventional and repetitive and serve the functions of escape from stress (McCrae, 1982) or mere wish fulfillment. The daydreams of open individuals are characterized by novelty and elaboration and are motivated by their intrinsic interest. The same is true for actions: Any reasonable adult (including some who are merely high in Agreeableness) would be willing to taste a new dish; the truly open go in quest of varied cuisines.

Fiske (1949) highlighted the active curiosity of open individuals by naming his corresponding factor *Inquiring Intellect*. Philosophical arguments are boring to closed individuals because they have no practical value; they are interesting to open people because they are intellectually challenging and because they may lead to new and surprising conclusions: Both the process of exploring and the novelty of discovery appeal to open people. Open individuals tend to endorse liberal political and social values (McCrae, in press) because questioning authority is a natural extension of their curiosity. The same willingness to pursue questions of value leads to higher moral development (Lonky, Kaus, & Roodin, 1984) and to the artist's bohemian rejection of convention.

Perhaps the clearest evidence of open individuals' need for experience per se is found in their appreciation of the arts. At least since Kant's *Critique of Judgment*, it has been generally recognized that the aesthetic experience is disinterested: There is no practical reason to be concerned with the fate of tragic heroes—no tangible benefit from listening to symphonies. The only function art serves is “to clarify, intensify, or otherwise enlarge our experience” (Canaday, 1980, p. 5), and this is the quintessential aim of open men and women.

Zuckerman's (1979, 1984) extensive research and theorizing on Sensation Seeking is surely relevant to an understanding of the motivational aspects of Openness. As Table I shows, all the Sensation Seeking scales are significantly related to Openness, particularly Experience Seeking. Zuckerman's (1984) suggestion that “novelty, in the absence of threat, may be rewarding through the activation of noradrenergic neurons” (p. 413), points to a possible neurochemical basis for Openness.

We have argued that open people are characterized both by a particular permeable structure of consciousness and by an active motivation to seek out the unfamiliar. It seems probable that the structure is the result of the motivation,

rather than vice versa. In the absence of a need for new experience, an open structure would not provide any clear advantage; indeed, it would expose the individual to distracting thoughts, troubling impulses, and cognitive inconsistencies (cf. Maddi, 1968). The need for experience provides an incentive to tolerate ambiguity and dissonance, just as an animal's exploratory drive may overcome its need for security. In both cases, the evolutionary function seems clear: Greater experience ultimately provides a basis for better adaptation.

#### IV. FURTHER RESEARCH AND APPLICATIONS

It may seem odd to assert that Openness is the least researched and least understood of the five fundamental dimensions of personality. After all, there have been decades of research on psychological defenses, authoritarianism, hypnosis, creativity, and the need for variety. However, these diverse lines of research have not been integrated by the conception of Openness as a fundamental domain of personality which is reflected in each. As a result, there has been little cross-fertilization of ideas and the literature has been fragmented. The power of the construct of Openness in interpreting these areas can be seen in the explanations it provides for unanticipated results. Without it, how would we explain the curious finding that private self-consciousness is related to belief in paranormal phenomena (Davies, 1985)? Or the fact that the MBTI Sensation scale is *negatively* related to Zuckerman's Sensation Seeking,  $r = -.43$ ,  $N = 170$ ,  $p < .001$ , in BLSA participants? Once we understand that each of these variables reflects an aspect of Openness, the associations are clear.

Personality psychology is poised for a new round of research on these topics, guided by the concept of Openness. New instruments (e.g., Costa & McCrae, 1992a; Trapnell & Wiggins, 1990) provide validated measures of Openness and some of its facets in both self-report and observer rating formats. Scales measuring related traits such as absorption and private self-consciousness can be used more intelligently if they are understood as aspects of a broader and more fundamental construct.

##### A. Some Research Questions

Openness is so important and pervasive a dimension of individual difference that it should figure routinely in the research of personality psychologists. Researchers in other fields can also benefit by including measures of Openness in their studies (McCrae, in press). Social psychologists should assess openness in research on attitude formation and change. Educational psychologists should consider Openness as a moderator variable in assessing the value of different teaching methods. Industrial and organizational psychologists should include measures of Openness in their personnel selection batteries. Behavioral geneticists should study its heritability (Bergeman et al., 1993), and health psychologists should investigate its role in health information seeking and behavior change. Cognitive psychologists should examine

the relation of Openness to field independence, cognitive complexity, and other cognitive styles (Tetlock, Peterson, & Berry, 1993).

In an earlier article (McCrae & Costa, 1985a), we argued that the future of Openness lay in the investigation of its effects across the life span in such areas as vocational career and family life. We know that open individuals have Artistic and Investigative interests (Costa, McCrae, & Holland, 1984) and that they make more midcareer shifts (McCrae & Costa, 1985a). There are characterizations of rigid and flexible managers (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) that suggest how variations in Openness might be seen in organizational settings. But much remains to be learned about how Openness influences career paths, job satisfaction, and retirement planning. Similarly, we know little about the effects of Openness on the course of intimate and personal relationships. We know that Openness is stable in adulthood (Costa & McCrae, 1988a), so we should be able to approach many of these questions through retrospective studies; every prospective longitudinal study should certainly include baseline measures of Openness.

### **B. Applications in Psychiatry and Clinical Psychology**

Personality traits have always been considered important for the diagnosis of psychiatric disorders, and extreme and maladaptive variants of some aspects of personality are classified as personality disorders in DSM-IV (American Psychiatric Association, 1994). Wiggins and Pincus (1989) have shown that scales measuring these disorders can be understood in terms of the five-factor model. Histrionics, for example, are extremely high in Extraversion; Avoidants are high in Neuroticism and low in Extraversion.

None of the DSM-IV personality disorders is uniquely associated with Openness, but a careful consideration of diagnostic criteria shows that aspects of Openness are relevant to several disorders (Costa & Widiger, 1994). The restricted affect of Schizoids, the self-aggrandizing fantasy of Narcissists, and the behavioral rigidity of Compulsives are all significant clinical features that may well be related to Openness. In his reconceptualization of personality disorders, Millon (1986) has suggested that each disorder is characterized by a particular intrapsychic structure, and as we have seen, Openness is a major determinant of psychic structure.

However, Openness has a history of being overlooked, and it is also worthwhile to consider that there may be personality disorders not identified in DSM-IV which represent pathological forms of Openness. Some individuals are so rigid in their adherence to tradition and so unwilling to accept change that they are unable to adapt to inevitable social changes. When combined with very low levels of Agreeableness, this closedness may take on an antisocial character. It is also possible that excessively high levels of Openness (particularly in the absence of comparably high levels of intelligence and Conscientiousness) may constitute a personality disorder. Such individuals may be so easily drawn to each new idea or belief that they are unable to form a coherent and integrated life structure.

Even where Openness is not relevant to the diagnosis of a psychiatric disorder, it may have important implications for psychotherapy (Miller, 1991). Open individuals may be more receptive to the idea of therapy itself and more tolerant of imaginative forms of therapy, such as Gestalt or hypnotherapy. Closed individuals are more likely to prefer concrete and practical suggestions. Biofeedback and directive therapies may prove more successful with them.

We began by suggesting that artists can be seen as exemplars of Openness, just as neurotics are exemplars of Neuroticism. People, however, are not one-dimensional exemplars; they are individuals who vary on at least five dimensions of personality. People who consult psychologists and psychiatrists about their problems bring more than these problems to the therapy; they also bring other dispositions that shape their lives and condition their responses to therapy. Individuals who are imaginative, sensitive, empathic, flexible, inquisitive, and tolerant will respond quite differently from those who are practical, down-to-earth, rigid, and dogmatic. Clinicians need to take Openness into account in designing the appropriate treatment for each client.

## REFERENCES

- Adorno, T. W., Frenkel-Brunswik, E., Levison, D. J., & Sanford, R. N. (1969). *The authoritarian personality*. New York: Norton. (Original work published 1950)
- Altemeyer, B. (1981). *Right-wing authoritarianism*. Winnipeg: University of Manitoba Press.
- Amelang, M., & Borkenau, P. (1982). Über die faktorielle Struktur und externe Validität einiger Fragebogen-Skalen zur Erfassung von Dimensionen der Extraversion und emotionalen Labilität [On the factor structure and external validity of some questionnaire scales measuring dimensions of extraversion and neuroticism]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 3, 119–146.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Angleitner, A., & Ostendorf, F. (1989, July). *Personality factors via self- and peer-ratings based on a representative sample of German trait descriptive terms*. Paper presented at the First European Congress of Psychology, Amsterdam.
- Ås, A., O'Hara, J. W., & Munger, M. P. (1962). The measurement of subjective experiences presumably related to hypnotic susceptibility. *Scandinavian Journal of Psychology*, 3, 47–64.
- Bergeman, C. S., Chipuer, H. M., Plomin, R., Pedersen, N. L., McClearn, G. E., Nesselroade, J. R., Costa, P. T., Jr., & McCrae, R. R. (1993). Genetic and environmental effects on openness to experience, agreeableness, and conscientiousness: An adoption/twin study. *Journal of Personality*, 61, 159–179.
- Berlyne, D. E. (1955). The arousal and satiation of perceptual curiosity in the rat. *Journal of Comparative and Physiological Psychology*, 48, 238–246.
- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous and Mental Disease*, 174, 727–735.
- Block, J. (1961). *The Q-sort method in personality assessment and psychiatric research*. Springfield, IL: Charles C. Thomas.



- Borgatta, E. F. (1964). The structure of personality characteristics. *Behavioral Science*, 9, 8–17.
- Briggs, S. R. (1989). The optimal level of measurement for personality constructs. In D. M. Buss & N. Cantor (Eds.), *Personality research for the 1990's* (pp. 246–260). New York: Springer-Verlag.
- Canaday, J. (1980). *What is art?* New York: Knopf.
- Cattell, R. B. (1946). *The description and measurement of personality*. Yonkers-on-Hudson, NY: World Book.
- Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. (1970). *The handbook for the Sixteen Personality Factor Questionnaire*. Champaign, IL: Institute for Personality and Ability Testing.
- Chapman, L. J., Chapman, J. P., & Raulin, M. L. (1978). Body image aberration in schizophrenia. *Journal of Abnormal Psychology*, 87, 399–407.
- Clark, L. A. (1993). *The Schedule for Adaptive and Non-Adaptive Personality*. Minneapolis: University of Minnesota Press.
- Coan, R. W. (1974). *The optimal personality*. New York: Columbia University Press.
- Conley, J. J. (1985). Longitudinal stability of personality traits: A multitrait-multimethod-multioccasion analysis. *Journal of Personality and Social Psychology*, 49, 1266–1282.
- Costa, P. T., Jr., & McCrae, R. R. (1976). Age differences in personality structure: A cluster analytic approach. *Journal of Gerontology*, 31, 564–570.
- Costa, P. T., Jr., & McCrae, R. R. (1978). Objective personality assessment. In M. Storandt, I. C. Siegler, & M. F. Elias (Eds.), *The clinical psychology of aging* (pp. 119–143). New York: Plenum Press.
- Costa, P. T., Jr., & McCrae, R. R. (1988a). Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. *Journal of Personality and Social Psychology*, 54, 853–863.
- Costa, P. T., Jr., & McCrae, R. R. (1988b). From catalog to classification: Murray's needs and the five-factor model. *Journal of Personality and Social Psychology*, 55, 258–265.
- Costa, P. T., Jr., & McCrae, R. R. (1989). *The NEO-PI/NEO-FFI manual supplement*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., Jr., & McCrae, R. R. (1992a). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., Jr., & McCrae, R. R. (1992b). Trait psychology comes of age. In T. B. Sonderegger (Ed.), *Nebraska Symposium on Motivation: Psychology and aging* (pp. 169–204). Lincoln: University of Nebraska Press.
- Costa, P. T., Jr., McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of the NEO Personality Inventory. *Personality and Individual Differences*, 12, 887–898.
- Costa, P. T., Jr., McCrae, R. R., & Holland, J. L. (1984). Personality and vocational interests in an adult sample. *Journal of Applied Psychology*, 69, 390–400.
- Costa, P. T., Jr., McCrae, R. R., Zonderman, A. B., Barbano, H. E., Lebowitz, B., & Larson, D. M. (1986). Cross-sectional studies of personality in a national sample: 2. Stability in neuroticism, extraversion, and openness. *Psychology and Aging*, 1, 144–149.
- Costa, P. T., Jr., & Widiger, T. A. (Eds.). (1994). *Personality disorders and the five-factor model of personality*. Washington, DC: American Psychological Association.
- Costa, P. T., Jr., Zonderman, A. B., & McCrae, R. R. (1991). Personality, defense, coping, and adaptation in older adulthood. In E. M. Cummings, A. L. Greene, & K. H.

- Karraker (Eds.), *Life-span developmental psychology: Perspectives on stress and coping* (pp. 277–293). Hillsdale, NJ: Erlbaum.
- Davies, M. F. (1985). Self-consciousness and paranormal belief. *Perceptual and Motor Skills*, 60, 484–486.
- Digman, J. M. (1987, August). *Eysenck, Guilford, and Cattell and the Big Five factors of personality*. Paper presented at the American Psychological Association Convention, New York.
- Digman, J. M., & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology*, 50, 116–123.
- Eckblad, M., & Chapman, J. L. (1983). Magical ideation as a measure of schizotypy. *Journal of Consulting and Clinical Psychology*, 51, 215–225.
- Epstein, S., & Meier, P. (1989). Constructive thinking: A broad coping variable with specific components. *Journal of Personality and Social Psychology*, 57, 332–350.
- Eysenck, H. J. (1991). Dimensions of personality: 16, 5, or 3?—Criteria for a taxonomic paradigm. *Personality and Individual Differences*, 12, 773–790.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, 43, 522–528.
- Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. *Journal of Abnormal and Social Psychology*, 44, 329–344.
- Fitzgerald, E. T. (1966). Measurement of openness to experience: A study of regression in the service of the ego. *Journal of Personality and Social Psychology*, 4, 655–663.
- Funder, D. C., & Sneed, C. D. (1993). Behavioral manifestations of personality: An ecological approach to judgmental accuracy. *Journal of Personality and Social Psychology*, 64, 479–490.
- Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2, pp. 141–165). Beverly Hills, CA: Sage.
- Goldberg, L. R. (1989, June). *Standard markers of the Big Five factor structure*. Paper presented at an Invited Workshop on Personality Language, Groningen, The Netherlands.
- Haan, N. (1965). Coping and defense mechanisms related to personality inventories. *Journal of Consulting Psychology*, 29, 373–378.
- Hartmann, E. (1991). *Boundaries in the mind: A new psychology of personality differences*. New York: Basic Books.
- Hartmann, E., Russ, D., Oldfield, M., Sivan, I., & Cooper, S. (1987). Who has nightmares? The personality of the lifelong nightmare sufferer. *Archives of General Psychiatry*, 44, 49–56.
- Hogan, R. (1986). *Hogan Personality Inventory manual*. Minneapolis, MN: National Computer Systems.
- Jackson, D. N. (1984). *Personality Research Form manual* (3rd ed.). Port Huron, MI: Research Psychologists Press.
- John, O. P. (1990). The “Big Five” factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality theory and research* (pp. 66–100). New York: Guilford Press.
- John, O. P., Angleitner, A., & Ostendorf, F. (1988). The lexical approach to personality: A historical review of trait taxonomic research. *European Journal of Personality*, 2, 171–203.
- Jourard, S. M. (1964). *The transparent self*. Princeton, NJ: Van Nostrand.

- Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). *Organizational stress: Studies in role conflict and ambiguity*. New York: Wiley.
- Kris, E. (1952). *Psychoanalytic explorations in art*. New York: International Universities Press.
- Lonky, E., Kaus, C. R., & Roodin, P. A. (1984). Life experience and mode of coping: Relation to moral judgment in adulthood. *Developmental Psychology, 20*, 1159–1167.
- MacKinnon, D. W. (1962). The nature and nurture of creative talent. *American Psychologist, 17*, 484–495.
- Maddi, S. R. (1968). The pursuit of consistency and variety. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook* (pp. 267–274). Chicago: Rand McNally.
- Maddi, S. R., & Berne, N. (1964). Novelty of productions and desire for novelty as active and passive forms of the need for variety. *Journal of Personality, 22*, 270–277.
- McCrae, R. R. (1982). Age differences in the use of coping mechanisms. *Journal of Gerontology, 37*, 454–460.
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology, 52*, 1258–1265.
- McCrae, R. R. (1990). Traits and trait names: How well is openness represented in natural languages? *European Journal of Personality, 4*, 119–129.
- McCrae, R. R. (1993–1994). Openness to experience as a basic dimension of personality. *Imagination, Cognition, and Personality, 13*, 39–55.
- McCrae, R. R. (1994). Openness to experience: Expanding the boundaries of Factor V. *European Journal of Personality, 8*, 251–272.
- McCrae, R. R. (in press). Social consequences of experiential openness. *Psychological Bulletin*.
- McCrae, R. R., & Costa, P. T., Jr. (1985a). Openness to experience. In R. Hogan & W. H. Jones (Eds.), *Perspectives in personality* (Vol. 1, pp. 145–172). Greenwich, CT: JAI Press.
- McCrae, R. R., & Costa, P. T., Jr. (1985b). Updating Norman's "adequate taxonomy": Intelligence and personality dimensions in natural language and in questionnaires. *Journal of Personality and Social Psychology, 49*, 710–721.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.
- McCrae, R. R., & Costa, P. T., Jr. (1988). Recalled parent-child relations and adult personality. *Journal of Personality, 56*, 417–434.
- McCrae, R. R., & Costa, P. T., Jr. (1989a). Different points of view: Self-reports and ratings in the assessment of personality. In J. P. Forgas & M. J. Innes (Eds.), *Recent advances in social psychology: An international perspective* (pp. 429–439). Amsterdam: Elsevier.
- McCrae, R. R., & Costa, P. T., Jr. (1989b). Reinterpreting the Myers-Briggs Type Indicator from the perspective of the five-factor model of personality. *Journal of Personality, 57*, 17–40.
- McCrae, R. R., Costa, P. T., Jr., & Busch, C. M. (1986). Evaluating comprehensiveness in personality systems: The California Q-Set and the five-factor model. *Journal of Personality, 54*, 430–446.
- McCrae, R. R., Costa, P. T., Jr., & Piedmont, R. L. (1993). Folk concepts, natural language, and psychological constructs: The California Psychological Inventory and the five-factor model. *Journal of Personality, 61*, 1–26.

- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60*, 175–215.
- McReynolds, P. (1985). Psychological assessment and clinical practice: Problems and prospects. In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in personality assessment* (Vol. 4, pp. 1–30). Hillsdale, NJ: Erlbaum.
- Miller, T. (1991). The psychotherapeutic utility of the five-factor model of personality: A clinician's experience. *Journal of Personality Assessment, 57*, 415–433.
- Millon, T. (1986). Personality prototypes and their diagnostic criteria. In T. Millon & G. L. Klerman (Eds.), *Contemporary directions in psychopathology: Towards the DSM-IV* (pp. 671–712). New York: Guilford Press.
- Morris, W. (Ed.). (1976). *The American heritage dictionary of the English language*. Boston: Houghton-Mifflin.
- Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66*, 574–583.
- Osberg, T. M. (1987). The convergent and discriminant validity of the Need for Cognition Scale. *Journal of Personality Assessment, 51*, 441–450.
- Peabody, D. (1987). Selecting representative trait adjectives. *Journal of Personality and Social Psychology, 52*, 59–71.
- Peabody, D., & Goldberg, L. R. (1989). Some determinants of factor structures from personality-trait descriptors. *Journal of Personality and Social Psychology, 57*, 552–567.
- Riley, K. C. (1988). Measurement of dissociation. *Journal of Nervous and Mental Disease, 176*, 449–450.
- Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherapy*. Boston: Houghton-Mifflin.
- Rokeach, M. (1960). *The open and closed mind*. New York: Basic Books.
- Saucier, G. (1992). Openness versus intellect: Much ado about nothing? *European Journal of Personality, 6*, 381–386.
- Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences (“absorption”), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology, 83*, 268–277.
- Tellegen, A., Lykken, D. T., Bouchard, T. J., Jr., Wilcox, K. J., Segal, N. L., & Rich, S. (1988). Personality similarity in twins reared apart and together. *Journal of Personality and Social Psychology, 54*, 1031–1039.
- Tetlock, P. E., Peterson, R. S., & Berry, J. M. (1993). Flattering and unflattering personality portraits of integratively simple and complex managers. *Journal of Personality and Social Psychology, 64*, 500–511.
- Trapnell, P. D. (1994). Openness versus Intellect: A lexical left turn. *European Journal of Personality, 8*, 273–290.
- Trapnell, P. D., & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology, 59*, 781–790.
- Tupes, E. C., & Christal, R. E. (1992). Recurrent personality factors based on trait ratings. *Journal of Personality, 60*, 225–251. (Original work published 1961)
- Webster, H., Freedman, M., & Heist, P. (1962). Personality changes in college students. In N. Sanford (Ed.), *The American college: A psychological and social interpretation of the higher learning* (pp. 811–846). New York: Wiley.

- Welsh, G. S. (1975). *Creativity and intelligence: A personality approach*. Chapel Hill: University of North Carolina, Institute for Research in Social Science.
- Wessman, A. E., & Ricks, D. F. (1966). *Mood and personality*. New York: Holt, Rinehart & Winston.
- West, K. Y., Widiger, T. A., & Costa, P. T., Jr. (1993). *The placement of cognitive and perceptual aberrations within the five-factor model of personality*. Unpublished manuscript, University of Kentucky, Lexington.
- Wiggins, J. S., & Pincus, A. L. (1989). Conceptions of personality disorders and dimensions of personality. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1, 305–316.
- Wyrick, L. C. (1969). *Correlates of openness to experience*. Unpublished master's thesis, University of Arizona, Tucson.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Erlbaum.
- Zuckerman, M. (1984). Sensation seeking: A comparative approach to a human trait. *Behavioral and Brain Sciences*, 7, 413–471.

# CONSCIENTIOUSNESS AND INTEGRITY AT WORK

JOYCE HOGAN

UNIVERSITY OF TULSA

DENIZ S. ONES

UNIVERSITY OF MINNESOTA

## I. OVERVIEW

Conscientiousness refers to conformity and socially prescribed impulse control. All comprehensive studies of natural-language personality descriptions—beginning with Allport and Odbert (1936)—identify a Conscientiousness dimension. Norman's (1963, 1967) peer rating studies of the structure of trait terms provide a taxonomic foundation for organizing contemporary inquiries about personality structure; Conscientiousness is one of five components of the taxonomy. Goldberg's (1990) analyses of Norman's trait lists repeatedly confirmed the five-factor structure; he coined the expression "Big Five" to describe this structure (see Goldberg, 1993, for a concise summary). Goldberg's research is persuasive; because we now know the structure of the trait lexicon, we can celebrate a major contribution to social science research.

Ironically, while personality psychologists were busy exploring the structure of the trait lexicon and identifying stable individual differences in interpersonal behavior, the use of personality assessment declined among applied psychologists. Skepticism regarding the usefulness of personality measurement reached a peak during the 1960s. Two critiques were particularly influential. The first was Mischel's

(1968) book, which claimed that (1) there is no evidence that personality is consistent across situations, and (2) personality measures explain only a trivial amount of variance in social behavior. The second, a review by Guion and Gottier (1965), concluded that there was no evidence for the validity of personality instruments. These claims spawned considerable research which ultimately resulted in a reversal of the critics' conclusions. Nevertheless, the shadow of skepticism stills exists and some applied psychologists continue to endorse these critiques of personality assessment.

The recent literature on the Big Five personality factors provides compelling evidence for its structural robustness; it is the basis for the resurgent interest in personality assessment. The evidence indicates that personality structure is consistent across different theoretical frameworks (Goldberg, 1981; Johnson & Ostendorf, 1993), using different assessments (e.g., Conley, 1985; Costa & McCrae, 1992; Lorr & Youniss, 1973), in different cultures (e.g., Bond, Nakazato, & Shiraishi, 1975; Borkenau & Ostendorf, 1989; Digman & Takemoto-Chock, 1981), and using ratings obtained from different sources (e.g., Digman & Inouye, 1986; McCrae & Costa, 1987; Norman, 1963; Norman & Goldberg, 1966; Watson, 1989). Substantial empirical evidence exists for the five-factor structure of peer descriptors (Cattell, 1943, 1946, 1947; Fiske, 1949; Norman, 1963; Tupes & Christal, 1961). Borgatta's (1964) research extends the robustness of the finding across five methods of data accumulation. We view the Big Five as a useful nosology, not as a theory nor an explanation. Nevertheless, there is some disagreement about the nature and meaning of the constructs, the scope of the taxonomy, and the degree to which the dimensions are fundamental and incisive (cf. Block, 1993; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Johnson & Ostendorf, 1993; Waller & Ben-Porath, 1987). Among applied psychologists, renewed interest in personality assessment is based on qualitative (Goldberg, 1992; R. Hogan, 1991; Schmidt, Ones, & Hunter, 1992) and quantitative (Barrick & Mount, 1991; Hough et al., 1990; Ones, Viswesvaran, & Schmidt, 1993; Tett, Jackson, & Rothstein, 1991) reviews which conclude that when personality research is organized in terms of the Big Five factors, personality is consistently related to job performance criteria.

The Conscientiousness dimension led the personality assessment revival in applied psychology. There are at least two reasons for this. First, lack of conscientiousness is a major problem in the workplace. Conscientious employees are good organizational citizens; delinquent employees, in contrast, are nonproductive and erode the economic health of an organization. Employers beg the psychological community for effective assessments of "honesty" and "integrity"—which are their words. The demand persists and there is no sign that it will abate. Second, empirical findings support the validity of Conscientiousness measures for predicting counterproductive behavior and job performance. Some personality measures that were developed to predict organizational delinquency criteria are widely used (e.g., Gough, 1972; J. Hogan & Hogan, 1989; Paajanen, 1985). Meta-analyses including general measures of Conscientiousness show consistent and significant relations with all job performance criteria in the occupations studied (Barrick & Mount,

1991; Tett et al., 1991). These validity generalization studies indicate that the Big Five dimensions of personality, Conscientiousness is the *only* dimension of personality to show consistent validities across organizations, jobs, and situations.

In this chapter, we review three theoretical explanations of the Conscientiousness construct, including psychoanalytic theory, role-taking and folk concepts, and socioanalytic theory. We then describe the manner in which Conscientiousness has been assessed. We next review the empirical findings that support the validity of Conscientiousness measures. Finally, we offer some advice for thinking about Conscientiousness—in terms of measurement and interpretation.

## II. CONCEPTUALIZING CONSCIENTIOUSNESS

### A. Psychoanalytic Theory

In personality psychology, Freud provided an important early discussion of the Conscientiousness construct. He explained Conscientiousness in terms of the superego—conscience—the first structure to develop in personality. The superego determines one's attitude toward authority and, according to Freud, the superego is crucial because all of development concerns coming to terms with authority. Freud not only recognized the importance of the conscience, but he also anticipated a modern dilemma: that too much Conscientiousness can be as undesirable as too little. Although today's applied psychologists seem to be concerned only with too little, Freud was also concerned with the problems of too much—i.e., the problems caused by a rigid, omnipotent, and punitive superego that define the extreme high end of Conscientiousness.

Unlike the other personality structures, the superego depends on social relationships, and the fundamental determinant of a person's disposition toward authority is the resolution of the Oedipus complex. The Oedipus complex, a universal constellation of unconscious wishes and fantasies, involves interaction, conflict, and negotiation with one's parents. Whether its resolution is positive or negative depends on the relationship between the child and his or her parents. Further, Freud argued that the view of childhood as a period of innocence free of sexual corruption was mythical. Rather, children are primitive, undisciplined, and born in a state of "polymorphous perversity." Many of the child's pleasure-producing activities arouse parental disapproval and only a small number of behaviors are socially approved (Fancher, 1990, p. 374). Over time, the family or caretakers channel these primitive tendencies into acceptable expressions and civilized behavior. The nature of this long process of social development where the parents attempt to curb unruly childhood sexuality is fundamental to all subsequent relations with parents and authority.

The insights of Freud suggest that Conscientiousness is a product of the superego that develops from resolving conflict between childhood sexuality and parentally guided forces of socialization. One of Freud's more accurate theoretical



insights is that Conscientiousness begins in the process of resolving conflicts with authority. Relations with the parents determine relations with other authority figures in life—military superiors, employers, mentors, and experts.

### **B. Role-Taking and Folk Concepts**

The historic chasm between personality theory and personality measurement becomes particularly apparent in the 25 years between Freud's last writings and modern demonstrations of the validity of personality measures. Before 1950, the conventional wisdom of criminology (Sutherland, 1951) was that delinquents and nondelinquents could not be differentiated on the basis of personality. According to Gough and Peterson (1952), the most notable review of the time (Schuessler & Cressey, 1950) concluded, after examining 113 studies, that personality measures could not distinguish criminals from noncriminals. From a role-taking perspective and based on "intuitive grounds," Gough and Peterson developed a pool of 64 items that strongly differentiated delinquent from nondelinquent males, females, and army personnel, calling into question social science research findings from the previous 25 years.

Most interesting, however, was Gough's insight that four themes characterized the discriminating items—role-taking deficiencies, resentment, alienation, and rebelliousness. These themes were retained in the items included in the Socialization scale of the California Psychological Inventory (Gough, 1957, 1987), perhaps the most well-validated broad bandwidth measure of Conscientiousness available. From a role-taking theory of psychopathy and folk concepts, Gough (1960) proposed that people are normally distributed along a continuum of socialization so that some are unusually scrupulous and conscientious, most are normally rule-compliant, and some are hostile to society's rules and conventions. On empirical grounds, excessive hostility is associated with criminal and delinquent behavior. However, Gough's explanation for criminal and delinquent behavior is that the "psychopath" fails to anticipate social expectations and therefore exhibits a deficient role-taking capacity during social interaction. Insensitivity to expectations and rules seems to result from an egotistical inability to understand the effects of one's behavior on others. However, this argument does not explain why delinquents or psychopaths are insensitive to the rules in the first place.

### **C. Socioanalytic Theory**

Socioanalytic theory (R. Hogan, 1983) also can account for the empirical relations while explaining the importance of and individual differences in the Conscientiousness dimension. Hogan's theory contends that (1) people evolved and still live in groups; (2) every group is characterized by a status hierarchy and those with status will make the rules for people living in the group; (3) people are consciously or unconsciously motivated by status and social acceptance, which are prerequisite for reproductive success in the group; (4) social interaction is the process by which

all human needs and goals, including reproductive success, are met; and (5) the process of social interaction and social life is fundamental because the needs for status—getting ahead—and social acceptance—getting along—can cross purposes. People interact in terms of their identities, which are constructed unconsciously from attempts to achieve status and social acceptance in the peer group. Individual differences arise, in part, because some people are more skilled in their social performance and more attentive to processes that will support that identity than others.

Following psychoanalytic theory, Conscientiousness is part of an identity choice—an interpersonal strategy for dealing with the members of one's group. In childhood, one might receive attention and approval for being tidy, compliant, and dependable; a child is likely to repeat activities that bring such approval from authority. However, by adulthood, the processes by which one supports a Conscientious identity are unconscious. It is easy to understand how Conscientiousness promotes survival in the group, and survival in today's organization. People engage in activities that are consistent with their identity; those who want others to see them as Conscientious will show up for work on time, complete assignments accurately, mow their lawns, and keep a balanced checkbook. People who earn the reputation of being Conscientious do not make waves, do not challenge authority, like rules, and avoid arguments, ambiguities, and altercations.

But how does psychoanalytic theory explain individual differences in Conscientiousness, particularly deviancy? These may be only one strategy for supporting a Conscientious identity, and that is by complying with the rules, customs, norms, and expectations of the group; through such behavior, one is regarded by peers and co-workers as "conscientious." However, there are any number of behavioral predispositions that lead to a delinquent reputation. For example, among these are taking on a "tough guy" identity that facilitates status in a deviant group such as a gang. Others might be acts reflecting alienation, disaffection, dissolution, hostility toward authority, impulsiveness, and vengefulness. Still another source of individual variation is self-deception about the congruence between one's actions and group norms. Consider the employee who routinely lectures co-workers on business ethics, but continually steals time and resources from the company without any cognizance of the contradiction. As Freud suggested, some of us are unaware of the meanings of our actions, and in this case self-deception sets the stage for self-defeat.

How can we reconcile the psychoanalytic theory of Conscientiousness with the Big Five model? Psychoanalytic theory insists that two definitions of personality must be considered—personality from the view of the actor and personality from the view of the observer. Hogan suggests that personality from the view of the actor is a personal, intrapsychic evaluation of what a person is like "way down deep." It probably consists of goals, intentions, fears, motives, and beliefs; much of this content is not observable and therefore will not be easily amenable to scientific study. However, personality from the view of the observer is based on an actor's behavior and coded in terms of trait words which describe that person's reputation. Reputations are reasonably reliable across observers and time. Observers describe

actors' behavior using trait terms—responsible, dependable, and careful, or, conversely, irresponsible, chaotic, and careless. Reputation is encoded in trait words, trait words have a well-defined mathematical structure, and these trait words are the substance of the Big Five model.

How do we get to Conscientiousness? Because people evolved in groups, there were pressures to get along as well as to get ahead. Trait words are the descriptive categories observers use to evaluate others during inevitable social interactions. As evaluative categories, these words reflect the amount of status and acceptance observers are willing to grant an actor; these trait descriptors become one's public reputation and have consequences for group success. Trait words can be organized in terms of the Big Five personality factors and these reflect the qualities and contributions which that person can be expected to bring to the group. The Big Five Conscientiousness dimension is concerned with a person seeming responsible and trustworthy, characteristics that are fundamental for maintaining a group.

### III. ASSESSING CONSCIENTIOUSNESS

In the 50 years of personality research that began in the 1930s, all major inventories have contained some scale level assessment of the Conscientiousness construct, broadly defined. Although test authors had different agendas when constructing their instruments, it is noteworthy that, regardless of purpose, they included an assessment of Conscientiousness. In thinking about these scales, Cronbach's (1960) application of Shannon and Weaver's (1949) distinction between bandwidth and fidelity is appropriate. We began with the Socialization scale of the CPI which Gough and Peterson (1952) developed to distinguish delinquents and nondelinquents. The complexity of the scale's content gives it a broad bandwidth and an array of external correlates, from voting behavior to incarceration. Investigations of the internal structure of the CPI Socialization scale indicate that it is composed of four hierarchically ordered subfactors. These are hostility toward rules and authority, thrill-seeking impulsiveness, social insensitivity, and alienation (e.g., Rosen, 1977). The broad bandwidth of the Socialization scale necessarily reduces its fidelity in predicting any single relevant behavior. However, we contend that the richness and complexity of the Socialization scale is also appropriate for measurement of the broad Conscientiousness construct. Most criteria that applied psychologists aim to predict are complex in nature, with many factors interacting to cause the behavior of interest. A good example is the criterion of job performance in industrial/organizational psychology. To predict and explain such complex criteria, complex and rich predictors work best (Ones, Mount, Barrick, & Hunter, 1994).

The Big Five heuristic provides a systematic way to identify Conscientiousness measures included in omnibus personality inventories. Based on the work of Costa, McCrae, and their colleagues, a number of published studies report correlations between the NEO-PI (Costa & McCrae, 1992) and other well-known personality

inventories published between 1930 and 1970. Table I presents selected correlational results for the NEO Conscientiousness scale and scales from other inventories. From this, it is apparent that the Conscientiousness construct is complex; there are at least three themes underlying the Table I correlations. Although these analyses use the NEO Conscientiousness scale as the factor marker, other researchers also have discovered the complex essence of this dimension (Barrick & Mount, 1991).

First, from the CPI Self-Control scale, Interpersonal Style Inventory Impulse Control scale, and Myers-Briggs Type Indicator Judging/Perceiving Type, a component of control emerges. These correlates suggest that Conscientiousness, in part, concerns a lack of impulsiveness and spontaneity, and a disposition toward cautiousness and criticality. Second, from the Order scales of the Edwards Personal Preference Schedule (EPPS) and the Personality Research Form (PRF), the component of orderliness, tidiness, and compulsiveness emerges. These relations suggest that Conscientiousness is also associated with being organized, neat, and methodical. Third, from the CPI Achievement via Conformity scale, the EPPS Endurance scale, and the PRF Orientation toward Work versus Play dimension (Skinner, Jackson, & Rampton, 1976), a component of hard work and perseverance emerges. These

**TABLE I**  
Correlations between the NEO Conscientiousness Scale and Selected Personality Scales

Measure	Scale	NEO <i>r</i>
California Psychological Inventory (McCrae, Costa, & Piedmont, 1993)	Self-Control	.31
	Good Impression	.32
	Achievement via Conformance	.37
	Flexibility	-.40
	Norm Favoring (vector 2)	.39
Myers-Briggs (McCrae & Costa, 1989)	Judging/Perceiving (male)	-.49
	Judging/Perceiving (female)	-.46
Interpersonal Style Inventory (McCrae & Costa, 1991)	Impulse Control	.71
	Stability	.43
Edwards Personal Preference Schedule (Piedmont, McCrae, & Costa, 1992)	Order	.68
	Endurance	.63
Personality Research Form (Costa & McCrae, 1988)	Achivement	.46
	Cognitive Structure	.33
	Endurance	.42
	Harm Avoidance	-.39
	Order	.60
Personality Research Form (Skinner scales: Skinner, Jackson, & Rampton, 1976)	Desirability	.46
	Orientation toward Work versus Play	.60

correlates suggest that Conscientiousness concerns responsible work orientation, where a person works hard because it is the right thing to do—as opposed to a person who is ambitious but not necessarily conscientious.

In a joint factor analysis of the Comrey Personality Scales (CPS), the Eysenck Personality Inventory, and the Sixteen Personality Factors (16PF), Noller, Law, and Comrey (1987) interpreted the first factor as Conscientiousness. Although it contained components similar to control and orderliness identified above, the analysis also revealed the theme of conformity. The 16PF-G conformity scale defined the factor, with the CPS-C conformity scale loading .65 and the Eysenck lie scale loading .39. These results suggest that measures of the Conscientiousness construct also can reflect tendencies toward rule compliance, obedience, and conventional integrity. These same themes appear when interpreting scores on the CPI Socialization scale.

Since 1980, we have witnessed the development of a new generation of multidimensional personality inventories designed to assess some or all the Big Five factors as an explicit measurement goal. These inventories include the NEO-PI (Costa & McCrae, 1992), the Personal Characteristics Inventory (Barrick & Mount, 1993), Goldberg's adjective markers (Goldberg, 1992), the Hogan Personality Inventory (HPI; R. Hogan & Hogan, 1992), Lorr and Youniss's (1973) Interpersonal Style Inventory, the Multidimensional Personality Questionnaire (Tellegen, 1982), and the Interpersonal Adjective Scales-Revised (IAS-R; Wiggins, 1991). All of these inventories contain a scale of assess "conscientiousness." Given the different orientations of the inventory authors, it is not surprising that the interpretation of "conscientiousness" is inconsistent across instruments (Johnson & Ostendorf, 1993). For example, the NEO Conscientiousness scale reflects orderliness and persistence (McCrae & Costa, 1992), whereas the Goldberg adjectives concern dependability, responsibility, and carefulness (Goldberg, 1992), and the HPI Prudence scale reflects impulse control, professed probity, preference for predictability, and virtuousness (R. Hogan & Hogan, 1992).

A substantial body of evidence shows that many omnibus measures of personality contain a dimension of Conscientiousness. These measures have varying degrees of Conscientiousness saturation. Beyond a core interpretation that these measures concern conformity and dependability, there are nuances within each measure that can be interpreted only through their nomological network with other measures. Test–test correlates are useful, but they provide only a limited view of a construct and they are a necessary but insufficient condition for establishing validity. Analyses such as those reported in Table I need to be expanded to include evaluations of test–nontest relations, which permit broader understanding and interpretation of the Conscientiousness construct validity (R. Hogan & Nicholson, 1988; Landy, 1986). In a meta-analysis, examining the construct validity of the Big Five dimensions of personality, Ones, Schmidt, and Viswesvaran (1994) found that Conscientiousness-related scales from mainstream personality inventories correlate .47 among themselves ( $N = 288,512$ ;  $K = 226$ ). However, when the correlations between Conscientiousness scales from personality inventories explicitly based on

the Big Five (HPI Prudence scale, Goldberg's Conscientiousness adjective checklist, and Personal Characteristics Inventory's Conscientiousness scale) were examined, the average disattenuated correlation was .71.

There are seemingly narrow bandwidth measures of Conscientiousness that serve a specific purpose in industrial psychology. These are measures of "integrity," where the assessment concerns honesty–dishonesty (Murphy, 1993, p. 115). Traditionally, a distinction is made between tests that inquire directly about honest behavior and attitudes (e.g., "I stole more than \$5,000 from my last employer") and tests that use questions mapping onto the integrity construct. Questions on these measures are similar and, in some cases, identical to inventory items on Conscientiousness scales. Tests that inquire directly about honesty are labeled "overt" (Sackett, Burris, & Callahan, 1989) or "clear purpose" (Murphy, 1993, p. 117), while tests where items are used to make inferences about the candidate's honesty are labeled "personality-based" (Sackett et al., 1989) or "veiled purpose" (Murphy, 1993, p. 117) integrity tests. We will focus on the latter type.

Murphy (1993, p. 127) points out that it is difficult to distinguish veiled purpose integrity tests from personality inventories. He also contends that what these tests measure is not well established. We are less skeptical than Murphy because we believe that the meaning of these measures comes from the pattern of their external correlates. Examples of personality-based integrity measures used in workplace testing and in personnel research include the Personal Outlook Inventory (Science Research Associates, 1983), Personnel Reaction Blank (Gough, 1972), Personnel Decisions, Inc., Employment Inventory (Paajanen, 1985), and HPI Reliability scale (J. Hogan & Hogan, 1989).

Evidence for interpreting the validity of these integrity measures comes from external or nontest sources such as supervisor's reports of job behavior, records of employee behavior, self-reports of work incidents and biographical experiences, and peer or co-worker evaluations. In addition, the meaning of these measures can be inferred from the pattern of their relations with other well-validated instruments. Organizational users are interested in what tests mean in terms of predicting counterproductive job performance—that is, identifying persons whose scores suggest that they might behave in a dishonest or irresponsible way. For example, in a number of concurrent validation studies, scores on the HPI Reliability scale were associated with concentrations of blood alcohol levels of persons arrested for drunken driving ( $r = -.62$ ; Y. Nolan, Johnson, & Pincus, 1994), excessive absences from work ( $r = -.49$ ; R. Hogan, Jacobson, Hogan, & Thompson, 1987), work discharges ( $r = -.28$ ; J. Hogan, Hogan, & Briggs, 1984), counseling for aberrant behavior ( $r = -.18$ ; Raza, Metz, Dyer, Coan, & Hogan, 1986), and, conversely, commendations ( $r = .51$ ; J. Hogan et al., 1984). Ones et al. (1993) conducted a comprehensive meta-analysis of integrity tests and found that the criterion-related validity for predicting supervisory ratings of job performance was .41 ( $N = 7550$ ;  $K = 23$ ). Ones et al. (1993) also found that personality-based integrity tests predict externally measured counterproductive behaviors with an operational validity of .29 ( $N = 93,092$ ;  $K = 62$ ). In terms of test–test relations, the HPI Reliability scale correlated

with CPI Self-control, Good Impression, Socialization, and Achievement via Conformity scales with *rs* of .70, .49, .46, and .42, respectively (J. Hogan & Hogan, 1989). Note the similarity in this pattern of relations to that found in correlations between the CPI scales and the NEO Conscientiousness scale. From peer ratings of persons ( $N = 128$ ) who completed the HPI Reliability scale, the Adjective Checklist (Gough & Heilbrun, 1983) correlates of low Reliability scale scores included tense, moody, unstable, worrying, and self-pitying (R. Hogan & Hogan, 1992). J. Hogan and Hogan (1989) interpreted this scale as assessing tendencies toward organizational delinquency. Low scorers potentially engage in a wide variety of undesirable work behaviors, and high scorers tend to be commended and rated well by their supervisors. Correlations with other measures and peer evaluations suggest that persons with low Reliability scores are hostile, insensitive, impulsive, self-absorbed, and unhappy; conversely, persons with high scores are mature, thoughtful, responsible, and possibly somewhat inhibited. This scale and other personality-based integrity measures are broader than the narrowly focused overt measures of honesty, and, at the low end, they are capable of predicting a range of behaviors that make up a syndrome of organizational delinquency.

#### IV. EMPIRICAL EVIDENCE FOR THE VALIDITY OF CONSCIENTIOUSNESS

Meta-analyses evaluating the construct validity of Conscientiousness measures are beginning to be published. This is an important advance over earlier quantitative reviews of personality and job performance where measures of various constructs were aggregated (Ghiselli & Barthol, 1953; Schmitt, Gooding, Noe, & Kirsch, 1984).

For example, Barrick and Mount (1991) reviewed the published and unpublished literature from 1952 to 1988 to identify criterion-related validity studies of personality measures. They found 144 studies that met their inclusion criteria; these contained 162 samples and a total of 23,994 cases. They classified the studies by occupation and criterion type. The occupational groups consisted of professionals, police, managers, sales, and skilled/semiskilled workers, and these accounted for 5, 13, 41, 17, and 24% of the samples, respectively. The criterion types consisted of job proficiency, training proficiency, and personnel data, and these accounted for 68, 12, and 33% of the samples, respectively. There was some overlap in criterion type available for the samples.

Because there was no empirical means to classify the various personality scales into Big Five dimensions, Barrick and Mount asked six subject matter experts to classify the scales used in the 144 studies. Scales were placed into one of six categories labeled Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness, and Miscellaneous. Raters used information provided in test manuals or in research studies to make classification judgments. Agreement between four of six raters was used for final classification decisions, and as an example the

Conscientiousness classifications for 18 inventories and personality scales appear in Table II.

Barrick and Mount applied the meta-analytic procedures specified by Hunter and Schmidt (1990a) to examine the validity of the five personality dimensions for (1) each occupational group, (2) the three criterion types, and (3) objective versus subjective criteria. Focusing only on Conscientiousness, the results indicated that Conscientiousness scales were valid predictors for *all* occupational groups evaluated. The estimated true score correlations for professionals, police, managers, sales, and skilled/semiskilled occupations were .20, .22, .22, .23, and .21, respectively. Also, Conscientiousness was consistently valid across all criterion types with estimated

**TABLE II**

Conscientiousness Scale Classifications from the Barrick & Mount (1991) Meta-analysis

Inventory	Subscale
Gordon Personal Profile	Responsibility
Gordon Personal Inventory	Vigor
California Psychological Inventory	Achievement via Independence Conformance Status
Edwards Personal Preference Schedule	Responsibility Achievement Endurance Order
Adjective Checklist	Achievement Order
Guilford-Zimmerman Temperament Survey	Restraint
Self-Descriptive Inventory	Decisiveness Achievement Motivation Initiative
Thematic Apperception Test & Psychologist Ratings	Achievement Vigor Order
Jackson Personality Inventory	Organization Responsibility
Personality Research Form	Achievement Endurance Order Impulsivity
16 Personality Factor Questionnaire	Conscientious
Omnibus Personality Inventory	Impulse Expression
Multidimensional Personality Questionnaire	Hard Work Impulsiveness
Manifest Needs Questionnaire	Achievement
Hogan Personality Inventory	Prudence Ambition
Comfrey Personality Scales	Orderliness
Differential Personality Questionnaire	Control Achievement



true correlations of .23, .23, and .20 for job proficiency, training proficiency, and personal data, respectively. Finally, in evaluating the validity of personality measures for predicting objective versus subjective criteria, Barrick and Mount pointed out that subjective criteria are used about twice as frequently as objective criteria and, generally, true score correlations are higher for subjective ratings. Specifically, for Conscientiousness the estimated true correlation for subjective ratings was .26, whereas the correlation for various types of objective data was .14.

Barrick and Mount concluded that the most significant findings of their meta-analysis concerned the Conscientiousness dimension. It was consistently valid for the five occupational groups and the three criterion types evaluated. They interpret their findings to mean that at work, people who possess persistence and responsibility and who “exhibit a strong sense of purpose” will perform or be evaluated better than those who do not (p. 18). Barrick and Mount generalize to the larger world of work, stating that “it is difficult to conceive of a job in which the traits associated with the Conscientiousness dimension would not contribute to job success” (pp. 21–22). Their advice to practitioners is that when the goal is to predict job performance based on personality assessment, Conscientiousness measures are the ones most likely to yield valid predictions across all jobs. More recently, Barrick and Mount (1993) reported that as job autonomy increases, the criterion-related validity of Conscientiousness measures also increases. That is, Conscientiousness becomes more important for predicting job performance as autonomy becomes more prevalent in jobs. On a related note, Barrick, Mount, and Strauss (1993) used structural equations modeling to investigate the joint impact of goal setting and personality on job performance. They found that individuals high on Conscientiousness set goals and persist in attaining them, and, consequently, perform well on the job. So one reason why Conscientiousness predicts job performance is because Conscientious individuals plan to organize their work, spend more time on their job tasks, and persist at performance, all of which result in more job knowledge and superior supervisory ratings of job performance (Schmidt & Hunter, 1992).

Following Barrick and Mount, *Personnel Psychology* published a second meta-analysis of personality measures as predictors of job performance. This evaluation, conducted by Tett et al. (1991), concerned the same basic research questions raised by Barrick and Mount but included an investigation of relevant moderator variables. Tett et al. reviewed approximately 500 research abstracts published since 1968 concerning personality assessment and job performance. Using explicit criteria for inclusion, they identified 86 studies with 97 independent samples and 13,521 valid cases. Studies were coded by two trained raters according to 12 key objective characteristics (e.g., exploratory versus confirmatory research, applicant versus incumbent subjects), and their coding resulted in a 94% agreement. Personality measures used as predictors in these studies were classified using eight categories—Big Five dimensions, Locus of Control, Type A, and miscellaneous traits. Classifications of Big Five dimensions used factor analysis results from personality measures evaluated by Costa and McCrae (1988). Meta-analytic procedures specified by Hunter and Schmidt (1990a, 1990b) were used to estimate true correlations.

The results indicated a mean correlation, corrected for both predictor and criterion unreliability, of .24 between job performance and all personality. That means correlation increased to .29 when the analysis included only confirmatory research strategies. In addition, they found mean validities of .38, .30, .30, and .27 between personality measures and job performance studies that included job analyses, applicant subjects, military subjects, and published data, respectively. The corrected mean correlation between Conscientiousness measures and job performance was .18, with the 95% confidence interval ranging from  $-.11$  to  $.35$ . Tett et al. reemphasized the validity of personality measures for predicting job performance, particularly where the research strategy is confirmatory and where measures chosen are based on job analysis results. Nevertheless, ongoing controversy exists about methodological and statistical variations introduced to their meta-analysis that make the precise estimates of criterion-related validities difficult (cf. Ones, Mount et al., 1994).

Ones's (1993) comprehensive analysis of personality measures, Conscientiousness measures, and integrity tests represents the most extensive research to date on the construct validity of measures of Conscientiousness. Ones's focus is on understanding measures of integrity, which she does through analyses of test–test as well as test–job performance measures. As suggested by Landy (1986) and R. Hogan and Nicholson (1988), these comparisons allow us to understand and interpret the Conscientiousness construct. Ones's primary research question concerned where the personality trait “integrity” falls under the Big Five factors. Most measures that assess integrity are preemployment integrity or honesty tests, which test publishers claim evaluate such characteristics as responsibility, long-term job commitment, consistency, proneness to violence, moral reasoning, hostility, work ethics, dependability, depression, and energy level (cf. O'Bannon, Goldinger, & Appleby, 1989). These descriptions suggest that Conscientiousness is the general construct underlying integrity tests and integrity tests are largely designed to identify the characteristics associated with the negative pole of the construct—irresponsibility, rule violation, and hostility.

Ones (1993) identified more than 100 studies reporting correlations between integrity tests and temperament measures. These studies suggest that integrity measures tend to correlate with each other and with personality-based measures of Conscientiousness. However, when other personality scales are included in the analyses, a pattern of relations with the Big Five Agreeableness and Emotional Stability factors also emerges (Collins & Schmidt, 1993; Nolan, 1991). So, integrity tests, evaluated in terms of the Big Five model, are primarily related to Conscientiousness and secondarily to Agreeableness. Also, integrity tests have substantial correlations with Emotional Stability.

To understand what is measured by integrity tests, Ones (1993) asked six specific research questions: (1) Are overt integrity tests correlated with each other? (2) Are personality-based integrity tests correlated with each other? (3) Do both overt and personality-based integrity tests measure the same underlying construct? (4) Do integrity tests correlate with Big Five measures? (5) Do integrity tests derive

their criterion-related validity from the Conscientiousness dimension? (6) What is the estimated predictive validity of integrity tests? To answer these questions, Ones used two modes of data collection. The primary mode included test scores and demographic information from a student sample and job applicant sample ( $n = 1,365$ ) on the London House Personnel Selection Inventory, Stanton Survey, and Reid Report (all overt integrity tests according to Ones, 1993); the PDI Inc. Employment Inventory, Hogan Personality Inventory (including the Reliability scale), Personnel Reaction Blank, and Inwald Personality Inventory (all personality-based integrity tests); and the Personal Characteristics Inventory and Goldberg's Adjective Checklist (both personality inventories). Between 300 and 500 students completed each inventory over 30 sessions of data collection. The secondary mode of data collection was a survey of published and unpublished reports of correlations between overt integrity tests, personality-based integrity tests, and measures of the Big Five dimensions. This resulted in more than 8,000 correlation coefficients. The personality scales were assigned to Big Five dimensions using the classifications developed by Barrick and Mount (1991) and Hough et al. (1990). These correlational data were analyzed using meta-analysis procedures developed by Hunter and Schmidt (1990a).

Using results from the primary data, Ones found that the true correlations between overt integrity tests averaged .85, and confirmatory factor analysis indicated that test intercorrelations were due to the presence of a single factor. Similarly, the true correlations between personality-based integrity tests averaged .75, which, after confirmatory factor analysis, also indicated that only a single factor explained the matrix. Ones formed a composite of the three overt integrity tests and correlated it with a composite of the four personality-based integrity measures; she found a true score correlation of .61. Confirmatory factor analysis of the intercorrelation matrix of the seven integrity tests indicated a shared general factor, with loadings ranging from .63 for the PDI Employment Inventory to .87 for the London House Personnel Selection Inventory. Further analysis suggested evidence for a hierarchical factor structure of integrity tests, with a general factor across tests and two group factors—one for overt tests and the other for personality-based tests, specific to test type. To determine the relation between integrity tests and Big Five dimensions, a linear composite of the seven integrity tests and linear composites for scales classified in Big Five dimensions were formed. True score correlations between the integrity composite and the Conscientiousness, Agreeableness, and Emotional Stability composites were .91, .61, and .50, respectively. This pattern of correlations were repeated for separate integrity composites of overt tests and personality-based measures.

Ones performed a meta-analysis of the secondary data to test the generalizability of the results from the primary analyses. Of interest are the correlations between integrity tests and the Big Five personality dimensions. For this analysis, 423 integrity-Conscientiousness correlations across 91,360 data points resulted in a true correlation of .42. True score correlations of integrity tests with Agreeableness and

Emotional Stability measures were .40 and .33, respectively. The correlations with Extraversion and Openness to Experience were  $-.08$  and  $.12$ .

Meta-analysis was also used to determine the operational predictive validity of integrity tests and to determine whether their validity comes from the Conscientiousness dimension. Ones et al. (1993), in the most comprehensive meta-analysis ever reported, based on 665 validity coefficients across 576,460 data points, estimated the mean true score validity of integrity tests for predicting supervisory ratings of job performance to be .46. Using this correlation along with the true score correlation of .23 between individual scales of Conscientiousness and job performance (Barrick & Mount, 1991) and the true score correlation of .42 between integrity and Conscientiousness (Ones, 1993), Ones (1993) partialled Conscientiousness from the integrity–job performance relation, which reduced the true score correlation from .46 to .41. She determined that Conscientiousness as measured by individual personality scales only partially explains the validity of integrity tests for job performance. Conversely, when integrity test scores are partialled from the Conscientiousness–job performance relation, the true score correlation is reduced from .23 to .05. Ones concluded that measures of Conscientiousness, as assessed by Big Five personality inventories, are part of the broader construct measured by integrity tests. She suggests that integrity tests tap a higher order factor that includes Conscientiousness, Agreeableness, and Emotional Stability. It is interesting to note that these three Big Five are also those that Digman (1990) finds to be important for predicting delinquency and grades at school.

## V. MEASUREMENT BREADTH AND THEORETICAL DYNAMICS

The Big Five structure emerged from the study of natural language, specifically adjectival peer descriptions. We view this taxonomy not as a theory but as a useful starting point for technical discussions. The Conscientiousness dimension of the Big Five structure concerns social conformity and impulse control. Questionnaire evaluations of this construct reflect one or both of these themes (John, 1990). Conscientiousness, as well as the other Big Five dimensions, has enormous bandwidth, and, of course, this is a source of criticism (Briggs, 1989). However, as broad as Conscientiousness descriptors are, it appears that the integrity construct is even broader. This is the point of our analysis and review. The earlier literature (Murphy, 1993) suggested that integrity assessments are narrow bandwidth, high-fidelity Conscientiousness measures. That is, in the hierarchical representation of Conscientiousness, integrity would appear at a low level and as such should be capable of predicting specific behaviors. Ones's (1993) analysis suggests that integrity is even broader (and psychologically more complex) than Conscientiousness.

How do we account for this? First, consider the derivation of the Big Five constructs. The natural language of personality description relied historically on rational and factor analytic methods. The lexical approach for identifying personality characteristics begins by listing relevant terms from dictionaries. Attributes were

classified on conceptual grounds and later subjected to cluster and factor analytic techniques (Cattell, 1943). Confirmatory factor analysis is now the method of choice for Big Five researchers aligning personality scales with the five-factor taxonomy. From this analysis, Conscientiousness is interpreted through its network of other inventory correlates.

However, if we use an empirical approach to scale construction, either alone or in conjunction with rational and factor analytic methods, the results lead to a broader interpretation of the construct. Many integrity measures have been constructed empirically by comparing the item responses of persons known to be low in integrity with the responses of persons thought to be high in integrity. The criterion of interest (e.g., criminal versus noncriminal behavior) is defined first, and then inventory items are identified; those that discriminate between subjects on the criterion characteristic are retained because they are related to the behavior of interest. If the criterion is broad, then the empirical predictor also will be broad. Furthermore, it is not altogether clear why simple, factorially pure constructs should predict complex phenomena such as job performance and criminal behavior.

The CPI Socialization scale is a good example of the way in which broad criteria defined broad predictor measures. The criterion characteristic that Gough had in mind was the continuum of Socialization–Asocialization. As a way of establishing the validity of the scale, Gough tested groups that most people would agree differed in Socialization. Mean Socialization scale scores, which he views as a sociological continuum, range from high school “best citizens,” bank officers, and school superintendents down to unmarried mothers, county jail inmates, and prison inmates (Gough, 1975). Similarly, in developing the HPI Reliability scale, the criterion of choice was antisocial behavior (J. Hogan & Hogan, 1989). The initial HPI item composites for the Reliability scale were chosen based on their correspondence with the structure of deviancy as revealed in earlier factor analytic studies of the CPI Socialization scale. In the case of the HPI, item composites that came from the personality scales of Conscientiousness, Agreeableness, Extraversion, and Emotional Stability empirically distinguished felons from nonfelons and delinquents from nondelinquents. This multifaceted measure of integrity, which is keyed against the delinquency criterion, has a broad range of antisocial behavioral correlates in the workplace—insubordination, excessive absences, tardiness, equipment sabotage, and negative supervisory ratings.

To summarize, Conscientiousness as assessed using rational or factor analytically derived measures necessarily will focus on a single well-defined construct. Conversely, if integrity measures are developed empirically and if the criterion characteristic to be predicted is broad (and reliable), then the resultant scale will be multifaceted and complex. These explanations are posed to account for the difference between measures of Conscientiousness and integrity.

How do we interpret Conscientiousness or integrity scores in terms of personality theory? Conscientiousness, defined as social conformity and impulse control, is the degree to which a person makes an effortless adaptation to authority. For Freud, a person cannot adapt fully to authority because there is always ambivalence

in the relationship. From this developmental perspective, normally Conscientious behavior is a strategy designed to accommodate authority and to avoid guilt associated with critical superiors or their symbols. Individual differences in Conscientiousness form a continuum, from those who lack Conscientiousness—who are unable to resolve conflicts with authority—to those who are excessively Conscientious—who are compulsive, stingy, dependent, and stubborn.

However, recall the evolutionary features that characterize people. We evolved in groups, we live in groups, and we participate in a status hierarchy within our groups. To some degree, we are motivated to engage in social interaction, which is the process by which we achieve social status and social acceptance. People seek both social status, even if it is in the form of trying to avoid losing it, and social acceptance, even if it is in the form of trying to avoid criticism.

From R. Hogan's (1983) socioanalytic perspective, the vehicle for participating in the group process is one's identity. Identity is a repertoire of self-presentations that develop during youth and adolescence, and identity is the basis on which social status and social acceptance are granted—or withdrawn. We might develop the identity or vocational role of a scholar, counselor, minister, or person of integrity. When we interact and others observe us, their reactions to us become our reputations. Reputations are coded in trait words that reflect others' descriptions of the status and acceptance afforded our identities. And so we come full circle to the derivation of the trait lexicon—the content base for the Big Five.

Over time, a person who is described by others as conscientious develops the identity of a "person of integrity." Developmentally, conformity engenders social acceptance, and up to a point conformity also will facilitate social status. The Conscientious child probably enjoyed positive relations with parents, caretakers, and others of authority because of his or her tendency to conform and desire to get along. The Conscientious adolescent is reliable, gets things done for the group, goes along with the group, and is comfortable with adult authority. He or she develops the reputation for being dependable, responsible, and careful (Conscientious). Respect for others also will lead to a reputation for being kind and trusting (Agreeableness), as well as being consistently calm and content (Emotional Stability). This identity is reinforced through social acceptance and approval. In adulthood, the identity and the processes which support it normally will be outside of conscious awareness.

As for measurement, reputation is assessed through others' standardized appraisals. This can take the form of peer, spouse, or supervisors ratings using adjective checklists and observer reports. Although many applied psychologists attempt to have observers evaluate the particular behavior of actors, observers are rarely able to do this. Instead, they construct impressions of an actor's characteristics (Bartlett, 1932), and these impressions are what drive the evaluations (Murphy, Martin, & Garcia, 1982). On the other hand, we also consider a person's responses to a personality inventory to be a form of social interaction. The person endorses inventory items in the way that he or she would like to be regarded in social interactions. The respondent thinks about the question, considers the impression he or she would

make with a particular response, and endorses the item to convey the desired image. R. Hogan (1983) points out that this process is not as conscious or deliberate as it is in this description. In fact, he contends that because identities are so well solidified in adulthood, little conscious effort goes into self-presentations. Moreover, this theoretical perspective on item response dynamics makes moot the issue of "faking" or item distortion (also see Hough et al., 1990).

The ubiquitous issue of faking also can be interpreted from a socioanalytic perspective, and this leads us to our final point. Persons who endorse such faking items as "I have never told a lie" or "I have never hated anyone" show excessive virtuousness in their interpersonal style. Conscientiousness is one of the normal dimensions of personality, measures of which lack item content at the extreme ends. Items, which may resemble faking items, at the low end of conscientiousness are absent because test takers find the content offensive or invasive (e.g., "I enjoy using illegal drugs"). Similarly, there are few items at the high end. If such items were used, we might have a very different view of high Conscientious people. Such persons are likely to have reputations as being inflexible, self-righteous, perfectionistic, judgmental, and evangelistic. Their private identities are likely to be that of a morally scrupulous, virtuous, upright, and characterologically superior person. Context is important for interpretation, so this person will also show relatively high scores for Emotional Stability and elevations for the other Big Five measures (Johnson, 1990). Persons who score low on Conscientiousness measures are and are seen as deviant—and this is their identity, too.

We are optimistic about the use of measures of Conscientiousness and integrity in applied psychology. In some ways, the Big Five has had the effect of pulling applied psychologists away from the retarding influences of behaviorism. Through meta-analyses, we begin to see the true potential of Conscientiousness and integrity measures for predicting important real world criteria such as job performance and counterproductivity on and off the job. As we learn more about this construct, we will better understand its nuances and measurement applications.

## REFERENCES

- Allport, G. W., & Odbert, H. S. (1936). Trait-names: A psycho-lexical study. *Psychological Monographs*, 47 (No. 211).
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1-26.
- Barrick, M. R., & Mount, M. K. (1993). Autonomy as a moderator of the relationships between the Big-Five personality dimensions and job performance. *Journal of Applied Psychology*, 78, 111-118.
- Barrick, M. R., Mount, M. K., & Strauss, J. P. (1993). Conscientiousness and performance of sales representatives: Test of the mediating effects of goal setting. *Journal of Applied Psychology*, 78, 715-722.
- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge, England: Cambridge University Press.

- Block, J. (1993). *A contrarian view of the five-factor approach to personality description*. Unpublished manuscript, University of California, Berkeley.
- Bond, M. H., Nakazato, H., & Shiraishi, D. (1975). Universality and distinctiveness in dimensions of Japanese person perception. *Journal of Cross-Cultural Psychology*, 6, 346–357.
- Borgatta, E. F. (1964). The structure of personality characteristics. *Behavioral Science*, 9, 8–17.
- Borkenau, P., & Ostendorf, F. (1989). Descriptive consistency and social desirability in self- and peer reports. *European Journal of Personality*, 3, 31–45.
- Briggs, S. R. (1989). The optimum level of measurement for personality constructs. In D. M. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions* (pp. 246–260). New York: Springer.
- Cattell, R. B. (1943). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology*, 38, 476–506.
- Cattell, R. B. (1946). *Description and measurement of personality*. Yonkers-on-Hudson, NY: World Book.
- Cattell, R. B. (1947). Confirmation and clarification of primary personality factors. *Psychometrika*, 12, 197–220.
- Collins, J. M., & Schmidt, F. L. (1993). Personality, integrity, and white-collar crime: A construct validity study. *Personnel Psychology* 46, 295–311.
- Conley, J. J. (1985). Longitudinal stability of personality traits: A multitrait-multimethod-multioccasion analysis. *Journal of Personality and Social Psychology* 49, 1266–1282.
- Costa, P. T., Jr., & McCrae, R. R. (1988). From catalog to classification: Murray's needs and the five-factor model. *Journal of Personality and Social Psychology*, 55, 258–265.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *NEO-PI-R professional manual*. Odessa, FL: Psychological Assessment Resources.
- Cronbach, L. J. (1960). *Essentials of psychological testing* (2nd ed.). New York: Harper & Row.
- Digman, J. M. (1990). Personality structure: Emergence of the Five Factor model. *Annual Review of Psychology*, 41, 417–440.
- Digman, J. M., & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology*, 50, 116–123.
- Digman, J. M., & Takemoto-Chock, N. K. (1981). Factors in the natural language of personality: Re-analysis and comparison of six major studies. *Multivariate Behavioral Research*, 16, 149–170.
- Fancher, R. E. (1990). *Pioneers of psychology*. New York: Norton.
- Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. *Journal of Abnormal and Social Psychology*, 44, 329–344.
- Ghiselli, E. E., & Barthol, R. P. (1953). The validity of personality inventories in the selection of employees. *Journal of Applied Psychology*, 37, 18–20.
- Goldberg, L. R. (1981). Language and individual differences: The search for universals in personality lexicons. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 1, pp. 203–234). Hillsdale, NJ: Erlbaum.
- Goldberg, L. R. (1990). An alternative “description of personality”: The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59, 1216–1229.
- Goldberg, L. R. (1992). The development of markers of the Big-Five factor structure. *Psychological Assessment*, 4, 26–42.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26–34.
- Gough, H. G. (1948). A sociological theory of psychopathy. *American Journal of Sociology*, 53, 359–366.



- Gough, H. G. (1957). *Manual for the California Psychological Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G. (1960). Theory and measurement of socialization. *Journal of Consulting Psychology, 24*, 23–30.
- Gough, H. G. (1972). *Manual for the Personal Reaction Blank*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G. (1975). *Manual for the California Psychological Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G. (1987). *California Psychological Inventory administrator's guide*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G., & Heilbrun, A. B. Jr. (1983). *The Adjective Checklist manual: 1983 edition*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G., & Peterson, D. R. (1952). The identification and measurement of predispositional factors in crime and delinquency. *Journal of Consulting Psychology, 16*, 207–212.
- Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology, 18*, 135–164.
- Hogan, J., & Hogan, R. (1989). How to measure employee reliability. *Journal of Applied Psychology, 74*, 273–279.
- Hogan, J., Hogan, R., & Briggs, S. R. (1984). *Development and validation of employee selection tests for combination drivers*. Tulsa, OK: University of Tulsa.
- Hogan, R. (1983). A socioanalytic theory of personality. In M. M. Page (Ed.), *1982 Nebraska Symposium on Motivation* (pp. 55–89). Lincoln: University of Nebraska Press.
- Hogan, R. (1991). Personality and personality measurement. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 2, pp. 327–398). Palo Alto, CA: Consulting Psychologists Press.
- Hogan, R., & Hogan, J. (1992). *Hogan Personality Inventory manual*. Tulsa, OK: Hogan Assessment Systems.
- Hogan, R., & Nicholson, R. (1988). The meaning of personality test scores. *American Psychologist, 43*, 621–626.
- Hogan, R., Jacobson, G., Hogan, J., & Thompson, B. (1987). *Development and validation of a service operations dispatcher selection inventory*. Tulsa, OK: Hogan Assessment Systems.
- Hough, L. M., Eaton, N. K., Dunnette, M. D., Kamp, J. D., & McCloy, R. A. (1990). Criterion-related validities of personality constructs and the effect of response distortion on those validities. *Journal of Applied Psychology, 75*, 581–589.
- Hunter, J. E., & Schmidt, F. L. (1990a). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.
- Hunter, J. E., & Schmidt, F. L. (1990b). Dichotomization of continuous variables: The implications for meta-analysis. *Journal of Applied Psychology, 75*, 334–339.
- John, O. P. (1990). The Big Five factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 66–100). New York: Guilford Press.
- Johnson, J. A. (1990, June). *Unlikely virtues provide multivariate substantive information about personality*. Paper presented at the 2nd annual meeting of the American Psychological Society, Dallas, TX.
- Johnson, J. A., & Ostendorf, F. (1993). Clarification of the five factor model with the abridged Big-Five dimensional circumplex. *Journal of Personality and Social Psychology, 65*, 563–576.

- Landy, F. J. (1986). Stamp collecting versus science: Validation as hypothesis testing. *American Psychologist, 41*, 1183–1192.
- Lorr, M., & Youniss, R. P. (1973). An inventory of interpersonal style. *Journal of Personality Assessment, 37*, 165–173.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81–90.
- McCrae, R. R., & Costa, P. T., Jr. (1989). Reinterpreting the Myers-Briggs Type Indicator from the perspective of the five-factor model of personality. *Journal of Personality, 57*, 17–40.
- McCrae, R. R., & Costa, P. T., Jr. (1991, August). *Does Lorr's ISI measure the five-factor model?* Paper presented at the 99th annual Convention of the American Psychological Association, San Francisco.
- McCrae, R. R., & Costa, P. T., Jr. (1992). Discriminate validity of NEO-PIR facet scales. *Educational and Psychological Measurement, 52*, 229–237.
- McCrae, R. R., Costa, P. T., Jr., & Piedmont, R. L. (1993). Folk concepts, natural language, and psychological constructs: The California Psychological Inventory and the five-factor model. *Journal of Personality, 61*, 1–26.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.
- Murphy, K. (1993). *Honesty in the workplace*. Pacific Grove, CA: Brooks/Cole.
- Murphy, K., Martin, C., & Garcia, M. (1982). Do behavioral observations scales measure observation? *Journal of Applied Psychology, 67*, 562–567.
- Nolan, K. A. (1991). *The relationship between socially desirable responding and personnel integrity testing: The unique effect of self-deception and impression management*. Unpublished master's thesis, Georgia State University, Atlanta.
- Nolan, Y., Johnson, J. A., & Pincus, A. (1994). Personality and drunk driving: Identification of DUI types using the HPI. *Psychological Assessment, 6*, 33–40.
- Noller, P., Law, H., & Comrey, A. L. (1987). Cattell, Comrey, and Eysenck personality factors compared: More evidence for the five robust factors? *Journal of Personality and Social Psychology, 53*, 77–782.
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology, 66*, 574–583.
- Norman, W. T. (1967). *2,800 personality trait descriptors: Normative operating characteristics for a university population*. Ann Arbor: University of Michigan, Department of Psychology.
- Norman, W. T., & Goldberg, L. R. (1966). Raters, ratees, and randomness in personality structure. *Journal of Personality and Social Psychology, 4*, 44–49.
- O'Bannon, R. M., Goldinger, L. A., & Appleby, G. S. (1989). *Honesty and integrity testing*. Atlanta, GA: Applied Information Resources.
- Ones, D. S. (1993). *The construct validity of integrity tests*. Unpublished doctoral dissertation, University of Iowa, Iowa City.
- Ones, D. S., Mount, M. K., Barrick, M. R., & Hunter, J. E. (1994). Personality and job performance: A critique of Tett, Jackson, & Rothstein (1991) meta-analysis. *Personnel Psychology, 47*, 147–156.
- Ones, D. S., Schmidt, F. L., & Viswesvaran, C. (1994). *Convergent and divergent validity evidence for the Big-Five dimensions of personality: A meta-analysis*. Unpublished manuscript.

- Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. *Journal of Applied Psychology, 78*, 679-703.
- Paajanen, G. E. (1985). *PDI Employment Inventory*. Minneapolis, MN: Personnel Decisions, Inc.
- Piedmont, R. L., McCrae, R. R., & Costa, P. T., Jr. (1992). An assessment of the Edwards Personal Preference Schedule from the perspective of the five-factor model. *Journal of Personality Assessment, 58*, 67-78.
- Raza, S., Metz, D., Dyer, P., Coan, T., & Hogan, J. (1986). *Development and validation of personnel selection procedures for hospital service personnel*. Tulsa, OK: University of Tulsa.
- Rosen, A. S. (1977). On the dimensionality of the California Psychological Inventory socialization scale. *Journal of Consulting and Clinical Psychology, 45*, 583-591.
- Sackett, P. R., Burris, L. R., & Callahan, C. (1989). Integrity testing for personnel selection: An update. *Personnel Psychology, 42*, 491-529.
- Schmidt, F. L., & Hunter, J. E. (1992). Development of a causal model of processes determining job performance. *Current Directions in Psychological Science, 1*, 89-92.
- Schmidt, F. L., Ones, D. S., & Hunter, J. E. (1992). Personnel selection. *Annual Review of Psychology, 43*, 627-670.
- Schmitt, N., Gooding, R. Z., Noe, R. A., & Kirsch, M. (1984). Meta-analyses of validity studies published between 1964 and 1982 and the investigation of study characteristics. *Personnel Psychology, 37*, 407-422.
- Schuessler, K. E., & Cressey, D. R. (1950). Personality characteristics of criminals. *American Journal of Sociology, 55*, 476-484.
- Science Research Associates. (1983). *Personal Outlook Inventory*. Park Ridge, IL: Author.
- Shannon, C., & Weaver, W. (1949). *The mathematical theory of communication*. Urbana: University of Illinois Press.
- Skinner, H. A., Jackson, D. N., & Rampton, G. M. (1976). The Personality Research Form in a Canadian context: Does language make a difference? *Canadian Journal of Behavioral Science, 8*, 156-168.
- Sutherland, E. H. (1951). Critique of Sheldon's 'Variety of Delinquent Youth.' *American Sociological Review, 16*, 10-23.
- Tellegen, A. (1982). *Brief manual for the Differential Personality Questionnaire*. Unpublished manuscript, University of Minnesota, Minneapolis.
- Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology, 44*, 703-742.
- Tupes, E. C., & Christal, R. C. (1961). *Recurrent personality factors based on trait ratings* (Tech. Rep. No. ASD-TR-61-97). Lackland Air Force Base, TX: U.S. Air Force.
- Waller, N. G., & Ben-Porath, Y. S. (1987). Is it time for clinical psychologists to embrace the five-factor model of personality? *American Psychologist, 42*, 887-889.
- Watson, D. (1989). Strangers' ratings of the five robust personality factors: Evidence of surprising convergence with self report. *Journal of Personality and Social Psychology, 57*, 120-128.
- Wiggins, J. S. (1991). *Manual for the Interpersonal Adjective Scales*. Odessa, FL: Psychological Assessment Resources.