CHAPTER 7

PERSONALITY

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From the moment you meet another person, before he or she has uttered a single word, you begin to make inferences about his or her personality. Decades of research on personality judgments made at "zero-acquaintance" shows not only that these assessments are made quickly but also with a certain degree of accuracy (e.g., Borkenau & Liebler, 1992). Once you start interacting with a person you will continue to assess his or her personality, perhaps revising your impression as you pick up on nonverbal cues as well as information that is expressed verbally, because behavior is not just what a person does but how he or she does it. Expressive style and patterns of nuance in behavior are major vehicles for communicating personal identity. Yet, despite the fundamental importance of nonverbal communication, research on its association with personality is less than plethoric.

In the present chapter, we begin with a brief survey of the historical foundations of research connecting nonverbal behavior with personality, and we consider some past controversies and methodological issues that have taught these two fields lessons that are not always heeded by contemporary researchers. Then, after a short discussion of the personality frameworks that might be best suited for research on the relationship between personality and nonverbal behavior, we summarize some of the principal findings of this research.

In this chapter, we primarily focus on research concerning the relationship between personality variables and two types of variables relevant to nonverbal behavior. The first type concerns *expressions* of nonverbal behavior. The second type of variable concerns *ability* or *skill* in nonverbal communication—specifically, sensitivity to nonverbal behavior in others (decoding ability) and the ability to exhibit intentional nonverbal behaviors (encoding ability; see also Chapter 23, this handbook). Findings are organized in terms of personality variables, and the overall question is to what extent research has established relationships between a given personality trait and nonverbal behavior. Finally, we summarize our major conclusions and offer some suggestions for the kind of research needed for further progress in this area.

HISTORICAL CONTROVERSIES AND METHODOLOGICAL ISSUES

Both personality and nonverbal behavior have long been topics of widespread interest within psychology, but the two topics have not often been connected. Part of the reason for the lack of attention to nonverbal correlates of personality is historical. During the early heyday[1] of nonverbal research, personality psychology was undergoing (and only slowly winning) a difficult battle for its very existence known as the *person–situation debate* (Kenrick & Funder, 1988). By the time the debate wound down and the status of personality psychology had begun to stabilize, many researchers in nonverbal behavior

[1]Though in raw quantity, researchers in nonverbal behavior continue to outpace their predecessors, there was a definite acceleration in the field in the 1970s and early 1980s. This was likely in part due to the advancements of video-recording technology that allowed behaviors to be captured more easily for later analysis.

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had moved on, either away from considering personality variables as relevant or from the field of nonverbal behavior altogether.

Though today informed psychologists would agree that personality traits are real and important, there was a time, not so long ago, when many accepted arguments that traits only exist in the eye of the beholder or have relationships with behavior that are too small to have any real impact. This attitude seems to have carried over into the surrounding research in the 1970s and 1980s.

Brandt (1980), for instance, claimed the following:

> Respectable science holds . . . that there is not any connection between the features of the face and the character of the person. . . . Any connection . . . would bespeak some mystical system of correspondences between the mind and the body; scientists could only regard such a system as absurd. (p. 91)

Such a statement was already out of date in 1980 considering that Allport and Vernon (1933) demonstrated decades earlier how personality may be expressed via observable cues. Yet, it was not until the early 1990s that the flow of work resumed with any confidence. Today, it is not uncommon to see statements in the literature suggesting that it has long been known that there is a solid connection between personality and nonverbal behavior, but such statements neglect the occasionally conflicting eddies and flows of the two fields in parallel.

Personality and nonverbal variables can be pieced together in several ways. Many researchers on the personality side of the aisle have worked hard to demonstrate that people can make accurate judgments of strangers based on limited information (e.g., Berry, 1991; Borkenau & Liebler, 1992; Gifford, Ng, & Wilkinson, 1985; Watson, 1989), which correlate well with self-reports of personality and with ratings made by long-term acquaintances (e.g., Ambady & Rosenthal, 1992; Borkenau & Liebler, 1992; Funder & Sneed, 1993). This consistent finding suggests that there must be cues in nonverbal behavior that are indicative of personality (see also Chapter 23, this handbook). However, the specific behaviors and cues that might be related to personality were less likely to be included in these studies. In many cases, the question was "can accurate judgments be made?" and not "how are accurate judgments made?"

One of the discussions in the person–situation debate regarded the consistency of behaviors across situations, the primary outcome of which is the idea that multiple instances and rank rather than absolute measures of consistency may better reveal relationships (Kenrick & Funder, 1988). This point of view has led to a significant body of findings suggesting that there are behavioral consistencies that can be predicted by personality traits. Relatively independently, questions about the consistency and stability of patterns of nonverbal behaviors also arose in several different subdomains of nonverbal research (e.g., interpersonal synchrony; Bernieri, Reznick, & Rosenthal, 1988). These discussions and their outcomes can be helpful when compared and applied in the context of the link between nonverbal behavior and personality.

Another issue to consider when evaluating relationships between personality and nonverbal behavior is that the methodologies used to assess nonverbal behavior are quite varied. These variations come in the form of differing scope, magnification, and levels of analysis as well as in disparate modalities of measurement. This methodological diversity sometimes makes it difficult to compare findings across studies as they relate to particular personality traits.

For example, research on nonverbal communication has distinct camps of thought as to what level of measurement is relevant. Some researchers would argue that one should look at quantifiable and isolatable individual behaviors, for example, the proportion of times a person smiles in an interaction. However, for all the appeal of the concept of a clear-cut "body language," some researchers have professed difficulty in finding relationships between microcoded behaviors and variables of interest (Zuckerman, DePaulo, & Rosenthal, 1981). One problem is born of limited sampling of situations. It is not realistic to expect one behavior in one situation to correlate strongly with personality; such relations are better detected from composites of

multiple behaviors or repeated measures of behaviors across multiple situations (Epstein, 1979)—yet, relatively few studies assess participants' behavior more than once (Weisbuch, Slepian, Clarke, Ambady, & Veenstra-VanderWeele, 2010).

Another issue is the optimal level of magnification for assessing nonverbal behavior. For example, early research on interpersonal mimicry (interaction partners unintentionally copying each other's nonverbal behaviors) and its relationship to rapport was fraught with difficulty. There were so many particular behaviors to code (e.g., head nods and hand motions) that it was difficult to identify whether mimicry was happening in high-rapport interactions. Bernieri et al. (1988) eschewed painstaking and expensive methods for microcoding specific nonverbal behaviors that had achieved only spotty success when tried by previous researchers. They sought instead to demonstrate that raters' gestalt impressions of a pair of interactants' nonverbal synchrony would be more effectively correlated with rapport, and, indeed, they found more success with raters who were instructed to rate their overall impression of nonverbal synchrony. Thus, findings of weak or no relationships between a personality variable and a set of specific and isolated nonverbal behaviors might not necessarily imply that no such relationship exists; it might be better illuminated by assessing broader patterns of nonverbal behavior instead.

Another instance of disparate modalities of measurement arises in the literature on perceptions of emotional expression and perception. Most studies use only one type of stimulus, and participants are typically either explicitly asked to pose an expression, or they are given a stimulus intended to elicit emotional expressions more naturally (Zuckerman, Larrance, Hall, DeFrank, & Rosenthal, 1979). Methods sometimes shift for technological reasons (e.g., still photos predate video clips and are even now less costly to use and produce), and sometimes these shifts alter the research question. For example, it seems unwise to assume that a person's ability to intentionally express the emotion of happiness (e.g., as demonstrated for a photograph) is psychologically equivalent to how clearly his or her face expresses happiness in motion (e.g., as captured by video while viewing an emotion-eliciting stimuli). It has long been known that separate brain systems are involved in the posing of intentional and spontaneous facial expressions (Rinn, 1991). Despite this distinction, some reviews and meta-analyses lump such findings into the same category.

A final problem that arises in attempting to evaluate the literature is that many of the research findings relating personality and nonverbal behavior seem almost an afterthought, buried within articles whose primary foci are on other topics. Thus, although personality research and nonverbal research are both active and thriving fields, there is less intersection between them than might be wished.

Many of the studies considered in this chapter manifest at least one of the problems summarized earlier. These issues are not insurmountable, and they do not undermine the value of the research literature taken as a whole, but they are important to keep in mind.

ORGANIZATIONAL FRAMEWORKS

Overall, one of the biggest issues with the literature on the relationship between personality and nonverbal communication is its (dis)organization. In an attempt to at least begin to ameliorate that problem, we arrange the findings in this chapter by personality variables. We are choosing to organize this way instead of the other way around—in terms of nonverbal behaviors—because whereas the list of nonverbal behaviors is long and unstructured, some strong contenders for models used to organize personality variables are available.

The most widely used model is the Big Five framework, which organizes the domain of personality in terms of the broad traits of Extraversion, Neuroticism, Conscientiousness, Agreeableness, and Openness to Experience. This framework has become a near-consensual means of organizing the personality literature, despite a range of slightly different perspectives on it, such as Goldberg's (1990) conception of the traits as broad domains of individual difference phenomena found in self-rating measures and McCrae and Costa's (1996) Five-Factor Model of personality, in which the traits are viewed

as basic mental structures. A large body of research relates Big Five traits to behaviors and important life outcomes (Ozer & Benet-Martínez, 2006), and it seems reasonable to expect that they are also related to patterns of nonverbal behaviors. Therefore, the current chapter on personality correlates of nonverbal behavior will be largely organized in terms of the Big Five.

This is not to suggest that there is not research using personality variables that do not conform to the framework. Despite the near-ubiquity of the Big Five, the broader definition of personality is not limited to trait-based theories. If the scope is broadened to include all individual differences in psychological functioning, then many more topics arise for discussion, including gender, development, dominance, intelligence, relationship roles, and sexual orientation. For a review of the relationship of culture to nonverbal communication, see Chapter 4, this handbook. See Chapter 5, this handbook, for discussions of development. For topics on gender, see Chapter 6, this handbook. We cede detailed reviews of these individual difference variables to our colleagues, but in the present chapter we survey a few other individual difference variables outside the Big Five.

It is also important to note the methodological frameworks used in studying personality and nonverbal behavior. In the research to be described in this chapter, personality is measured in several ways, the foremost of which are self-report, informant or acquaintance report, and observed behaviors. Methods for assessing nonverbal behavior include various forms of self-report, spontaneous or elicited emotional responses, and intentional posing or enacting of emotional states. The intersection of different methods of measurement creates multiple perspectives on personality and nonverbal behavior.

This chapter's summary of the literature is in two major parts. In the first part, we consider personality traits that are related to spontaneous nonverbal behavior in response to particular stimuli. In the second part, we consider the relationship between personality and the intentional communication of affect or attitude via nonverbal expression.

INDIVIDUAL DIFFERENCES RELATED TO NONVERBAL BEHAVIORS

Research on the association between personality and nonverbal behavior can mostly be organized in terms of the Big Five framework, but, as was already mentioned, this framework does not encompass all the important individual differences that have been studied in relation to nonverbal behavior. Therefore we begin with the Big Five, but we also include a few other variables of interest.

Big Five Research

Each of the Big Five is associated with a number of nonverbal behaviors. Many of the earliest studies on the expressions of traits were conducted before the widespread acceptance of this framework. Because of this, a number of studies examine only one less-established trait or only parts of the framework. Extraversion and Neuroticism have been established and used for longer (e.g., Eysenck & Eysenck, 1968) and are most commonly included. However, although they may share a label, these traits are not always measured comparably across studies. Definitions of constructs have evolved over time, as have the measures used to assess them, so it is important to keep an eye on which particular measures are used in each study.

Although this part of the chapter is divided into sections that consider each of the Big Five traits, some studies are mentioned in more than one section, as many studies measured more than one trait at a time. Table 7.1 provides a simplified overview of most of the relationships between personality and behavior that are considered in this chapter.

Extraversion. In general, extraverts appear outgoing, talkative, and energetic. They are relatively likely to enjoy time spent with people and find less reward in time spent alone. Extraverts tend to be more assertive and experience positive emotions more frequently. Those who are low on extraversion tend to be more reserved and solitary (Hogan, Harkness, & Lubinski, 2000).

Although extraversion is perhaps the best supported of the Big Five in its relationship to nonverbal behavior, the findings concerning this trait are still not particularly well-organized. A few

TABLE 7.1

Nonverbal Behavioral Correlates of Big Five Personality Traits

	Nonverbal behavior			
Personality trait	**Face**	**Voice**	**Body**	**Overall**
Extraversion				
	More nods[a]	More speaking[b]	More Gestures[a,c]	Attractive[d]
	Friendly expression[d]	Loud voice[d]	Less arm wrap[a]	Refined and fashionable appearance[d]
	Self-assured expression[d]	Powerful voice[d]	More left leg lean[a]	Positive expressivity[e]
	Smiling[d]	Pleasant voice[d]	Less leg movement[a]	
	More facial affect[f,g]	Clearer speech[h]	Foot lift while walking[d]	
	Greater visual dominance[i]	Faster speech[h]	More arm swing[d]	
	More eye contact[i,j,k]	Rhythmic speech[h]	Upright posture[h]	
Neuroticism				
	Less friendly expression[d]	More conversational pausing[b]	More self-touch[b]	Unrefined appearance[d]
	Round face[d]	Soft-voice[d]	Fewer expressive gestures[b]	Poorly proportioned body[d]
		Less pleasant voice[d]		More negative expressivity[e]
Agreeableness				
	More nods[a]	More laughter[l]	More body openness[c]	Attractive[d]
	Baby-faced[d]	Fewer conversational interruptions[l]	Less gesturing[c]	More warmth[l]
	Friendly face[d]			Higher energy level[l]
	Less visual dominance[c]			More cheerful[l]
	More visual attention[c]			More engaged in interaction[l]
	Fewer negative facial expressions[c]			More positive expressivity[e]
Conscientiousness				
	More direct eye-gaze[m]	Powerful voice[d]	More foot lift while walking[d]	Attractive[d]
		More fluent speech[l]	Head height[d]	Refined and fashionable appearance[d]
			Efficient movement[d]	Formal dress[d]
			Less hand movement[m]	Less hostility[l,m]
				More engagement in interaction[l,m]
Openness to Experience				
	More visual attention[c]	Low voice[d]	Slow movements[d]	Dark garments[d]
		Calm speech[d]		Younger age[d]
		Fewer verbalizations[c]		

Note. All relationships are phrased such that a correlation between the trait and behavior would be positive. [a]Gifford (1994). [b]Campbell and Rushton (1978). [c]Berry and Hansen (2000). [d]Borkenau and Liebler (1995). [e]Gross and John (1995). [f]Gilbert and Reynolds (1984). [g]R. E. Riggio and Friedman (1986). [h]Lippa (1998). [i]Iizuka (1992). [j]Mobbs (1968). [k]Kendon and Cook (1969). [l]Funder and Sneed (1993). [m]Carney, Jost, Gosling, and Potter (2008).

quantitative summaries of the literature have been reported, though they are sometimes difficult to interpret. La France, Heisel, and Beatty (2004) conducted a meta-analysis of the literature on extraversion and nonverbal behavior. They reported that correlations between extraversion and various nonverbal behaviors are somewhat inconsistent, ranging from –.36 to .73. Their conclusion was that the mean correlation coefficient between extraversion and nonverbal behavior was .13. However, the different behaviors measured in the studies that met their inclusion criteria often were not connected

except for falling under the umbrella of "behavior" and should probably not be considered together in one average. This is particularly problematic given that a negative correlation does not necessarily reflect a failure to support a hypothesis that there is a relationship between a behavior and extraversion. For example, the variable "head-nodding" was found to have a significant negative relationship to extraversion. This finding should not be considered counter to the hypothesis that extraversion has nonverbal correlates. Furthermore, combining the effect size of head-nodding's relationship to extraversion with the effect size for extraversion's positive relationship with voice volume implicitly assumes that these different constructs can be compared on the same scale. As the title of La France et al.'s (2004) article suggests, a "profile" is perhaps a better approach to considering the relationship between multiple behaviors and a personality trait. Rather than testing one overall effect size, it is probably better to focus on individual relationships and their relative magnitudes as well as how they function simultaneously.

Some of the specific behavioral correlates of extraversion include those pertaining to gesture and body, appearance, facial expressions, eye gaze, and speech behaviors. Gifford (1994) unobtrusively video-recorded unacquainted triads of same-sex university students. Half of the 60 participants were women. The triads were instructed to converse on any subject they desired. Conversations each lasted approximately 15 min. Gifford used Wiggins's (1979) Interpersonal Adjective Scales to assess self-reported personality, including a gregarious-extraverted/aloof-introverted dimension. A number of detailed nonverbal behaviors were coded by research assistants using the Seated Kinesic Activity Notation System (Version 4.1; Gifford, 1986). This coding scheme involves quantifying frequencies, durations, and percentage of times sampled for the different behaviors. These nonverbal behaviors include multiple positions and actions involving the head, the trunk of the body, the arms and hands, or the legs and feet. Some examples include head-nodding and leg-crossing. People with higher extraversion scores exhibited more nods, more time spent gesturing, less tendency to wrap arms across the body, more left leg lean, and less leg movement (Gifford, 1994).

In another study using direct behavioral observation, Lippa (1998) assessed university students in a public speaking context. They were video-recorded as they delivered brief advertisement-style talks. Their nonverbal behavior was rated by two independent research assistants. These ratings included specific cues, such as "inflected speech" and "high-pitched voice," as well as global ratings of expressive style, including "jerky versus smooth" and "lethargic versus animated." Lippa measured personality using the aggregated judgments of six additional judges of a set of Big Five adjectives selected from both McCrae and Costa (1996) and John (1990). Extraverts demonstrated clearer enunciation of their words and speech that was faster and more rhythmic in cadence. Extraverts' facial expressions were more mobile, and their gestures were more energetic and further from the body. Their posture was judged to be more upright.

Berry and Hansen (2000) video-recorded interactions among unacquainted pairs of women undergraduates. They used what is known as the Unstructured Paradigm, wherein participants are unaware they are being recorded during a brief period that follows the research assistant leaving the room on a plausible pretense. In this case, during the setup of a decoy camera, the research assistant announced that he or she had brought the wrong tape and needed to go retrieve the correct one. The researchers measured participants' Big Five personality using the NEO Five-Factor Inventory (Costa & McCrae, 1992). Consistent with other researchers' findings, they found a positive relationship between extraversion and gesturing.

Funder and Sneed (1993) gathered a slightly different set of personality data from their undergraduate participants. In this case, personality was rated by informants who knew the participants well, rather than the more common self-report methods. Previously unacquainted pairs of opposite-sex participants were video-recorded in 5-min unstructured social interactions. Participants' behaviors were assessed by multiple trained raters using Riverside Behavioral Q-sort (Funder, Furr, & Colvin, 2000). Funder and Sneed found that extraversion was positively related to ratings of enthusiasm and energy level, expressivity, physical animation, physical

contact and proximity with partner, and engagement in the interaction. Extraversion was also associated with speaking more and with a louder voice.

Borkenau and Liebler (1995) video-recorded members of a community sample of German men and women as they entered a room and then read a weather report for the camera. A variety of nonverbal behaviors were coded by six research assistants. These behaviors ranged from facial expressions to stride length to judgments about appearance. Participants' self-reported personality was measured using German translations (Borkenau, 1988) of Norman's (1963) Big Five scale. Borkenau and Liebler found that participants who were higher in self-reported extraversion were rated by observers as appearing friendlier. Extraverts wore more self-assured expressions and demonstrated a greater degree of smiling. Extraversion was positively associated with a participant's attractiveness as well as the refinement and fashionableness of his or her appearance. Extraversion was also positively related to higher foot lift while walking and more arm swing as well as pleasantness of voice and voice volume.

Iizuka (1992) had women participants interviewed about their college life by a confederate, surreptitiously video-recording them and then later coding five nonverbal behaviors. The selected behaviors were gazing at the interviewer, gazing at the interviewer while listening, gazing at the interviewer while speaking, gazing during subjects' talk time, and gazing during interviewers' talk time. Iizuka assessed personality using the Maudsley Personality Inventory (Eysenck, 1964) and found that extraversion was positively correlated with gaze proportion, average duration, duration during listening, and frequency of looks.

Campbell and Rushton (1978) assessed a sample of women occupational therapy students, who participated in a dyadic interaction with a confederate during which they discussed their experiences in their educational program. The participants' extraversion was measured with the 16 Personality Factor Questionnaire (Cattell, Saunders, & Stice, 1957) and the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975). Fifteen measures of nonverbal communication were coded from these video-recorded interactions, ranging from frequency of self-touch to speaking behaviors. Extraversion was most strongly positively associated with amount of speaking.

As can be seen in a later section of this chapter, many of these behaviors overlap with nonverbal behaviors relating to status or dominance. Given that dominance is sometimes considered to be part of extraversion (e.g., Costa & McCrae, 1992; DeYoung, Quilty, & Peterson, 2007), these overlaps are unsurprising.

Expressivity is the aspect of nonverbal behavior most frequently researched in relation to extraversion. Most research assesses emotional expressivity using either behavioral measures of encoding skill or self-report instruments. Behavioral measures of emotional expressivity and encoding most often involve either posed or spontaneous expressions. The self-report methods tend to measure either self-perceptions of expressivity or self-reported behaviors related to expressivity.

Gilbert and Reynolds (1984) recruited men and women from a community sample. Participants completed personality measures, including the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) and the Test of Attentional and Interpersonal Style (TAIS; Nideffer, 1977). Later, they were placed into trios to complete a mildly competitive anagrams task while being surreptitiously video-recorded. Movements of four different body areas (face, head, fingers/hands, and body/trunk) were coded using procedures developed by the first author. The coded behaviors were designed to reflect emotional responses, attention/task involvement, and bodily movement. The facial-affect coding procedures were based on the facial-affect cues described by Ekman and Friesen (1976). Among other subscales, the TAIS differentiates between negative and positive affect expression. Participants with high scores on negative affect expression reported a tendency to express anger and negative feelings. Those scoring higher on positive affect expression reported expressing feelings of affection to others in both physical and verbal ways. A total facial affect score was calculated by summing scores for all the coded facial emotional expressivity, including "smiles," "smiling while shaking head no," "shaking head yes," and "negative facial emotion." Gilbert and Reynolds found extraversion to be

positively correlated with this measure of total facial affect. Extraversion was also related to positive affect expression as reported on the TAIS.

Gross and John (1995) also examined self-reported expressivity. They developed the Berkeley Expressivity Questionnaire to differentiate between positive emotional expression and negative emotional expression and gave it to a large number of undergraduate university students. They measured the personalities of their participants with the Big Five Inventory (John, Donahue, & Kentle, 1991). Their self-report measure of positive emotional expressivity was positively related to extraversion, and, of the Big Five, extraversion had the strongest personality-to-expressivity relationship.

H. R. Riggio and Riggio (2002) conducted a more focused meta-analysis on extraversion as related to nonverbal emotional expressiveness. The studies in their meta-analysis defined expressiveness in various ways. Some measures focused on the expression of emotions through facial expressions (e.g., R. E. Riggio, 1989). Other conceptualizations took broader behaviors into account, such as social activity (e.g., R. E. Riggio & Friedman, 1986), and sometimes conflated expressive ability with general tendencies toward expressiveness. This is worth noting because it is not too difficult to imagine a person who is very expressive but frequently fails to express him- or herself accurately. However, H. R. Riggio and Riggio concluded that, overall, there is a significant positive relationship between extraversion and expressivity in general.

Expressivity, in its many different forms, seems to be the behavior most indicative of extraversion. Though the studies we surveyed used a wide range of methods to operationalize expressivity, taken as a whole they support one of the strongest personality-to-nonverbal-behavior links in the literature. As for the rest of the correlates of extraversion, the findings are more varied but unsurprising. Behavioral correlates—such as voice volume, upright posture, and greater energy—seem generally congruent with the concept of extraversion.

Neuroticism. People who score high on neuroticism experience more anxiety, anger, envy, guilt, and depressed mood than those who score lower on neuroticism. They are sensitive to stressors and tend to interpret situations as frustrating and problematic (Hogan et al., 2000).

In the study described earlier, Borkenau and Liebler (1995) found that participants who were higher in neuroticism as measured by self-report were more likely to have an unrefined appearance, poorly proportioned bodies, and rounder faces. They tended to have less friendly expressions as well as softer and less pleasant voices. Expanding into more stylistic nonverbal behaviors, Campbell and Rushton (1978), in the study described earlier, found neuroticism to be associated with more self-touch, more frequent conversational pausing, and fewer expressive gestures.

Along similar lines, H. R. Riggio and Riggio's (2002) meta-analysis, described earlier, suggested that neuroticism was negatively correlated with behavioral measures of general expressivity, though this effect did not hold for self-report measures. This finding might in part be explained by an important distinction between positive and negative expressivity. Gross and John (1995) differentiated between positive emotional expression and negative emotional expression. Their self-report measure of negative emotional expressivity was positively related to neuroticism. Gilbert and Reynolds (1984), described earlier, also found neuroticism to be positively related to self-report measures of negative emotional expressivity. They did not find neuroticism to be correlated with their performance measure of negative facial expressivity during a brief competitive activity. However, they found that neuroticism was negatively correlated with a composite measure of nonverbal agitation, which is perhaps not dissimilar to overall negative expressivity.

In general, people who score high on neuroticism measures appear to behave in ways that are more tightly contained, hesitant, and self-oriented. When they are expressive, it seems to be in a negative manner. These behaviors are almost the opposite of the behaviors seen for extraversion.

Agreeableness. People who score high on agreeableness are more likely to be described as kind, sympathetic, cooperative, warm, and considerate

than people who are low on this dimension (Hogan et al., 2000).

A few nonverbal behaviors have been identified as relating to a person's agreeableness. Gifford (1994), in the study described earlier, found that agreeable individuals nodded more in dyadic interactions. Remarkably, this was the only nonverbal cue that was actually indicative of agreeableness, despite the fact that perceivers used a great number of other cues in their judgments of a target's agreeableness. Borkenau and Liebler (1995) found that participants who scored higher in agreeableness were more likely to exhibit friendly facial expressions. They were also rated as being more attractive and having more of a baby-face.

Funder and Sneed (1993), described earlier, found that agreeableness, as rated by knowledgeable informants, was related to behaviors in the laboratory that showed more warmth, greater enthusiasm and energy levels, more laughter, and more cheerful behavior. Agreeable people displayed more engagement with the interaction and interrupted their partners less often.

Gross and John (1995) found that the self-reported tendency toward positive expressivity correlated positively with agreeableness, also measured by self-report. Berry and Hansen (2000) found that agreeableness positively associated with observers' and participants' evaluations of interaction quality. Agreeableness was also related to less visual dominance, more visual attention, more body openness, less gesturing, and fewer negative facial expressions.

Out of all the Big Five traits, agreeableness seems to have the most inconsistent relationship between the nonverbal cues that are actually indicative of a target's agreeableness and those cues that are used by judges attempting to rate a person's agreeableness. Both Gifford (1994) and Borkenau and Liebler (1995) demonstrated this discrepancy clearly. However, given that judges are able to accurately rate targets' agreeableness even at minimal acquaintance, there are likely some relevant nonverbal cues that lay judges use but that researchers have not yet identified.

Conscientiousness. Conscientiousness is defined as being thorough, careful, or vigilant; it implies a desire to do a task well. Conscientious people tend to engage in self-discipline, tend to act dutifully, and are efficient and organized as opposed to easy-going and careless. When taken to an extreme, they may also be workaholics, perfectionists, and compulsive in their behavior. People who score low on conscientiousness tend to be more laid back, less goal-oriented, and less driven by success (Hogan et al., 2000).

Borkenau and Liebler (1995) found that participants who were higher in self-reported conscientiousness were rated by observers as being more attractive, refined and fashionable in appearance, and more formally dressed. Conscientious participants also exhibited greater foot lift while walking, more powerful voices, as well as greater head height, and they garnered higher ratings regarding the efficiency of their movements.

Funder and Sneed (1993) found that conscientiousness, as rated by knowledgeable acquaintances of the participants, was positively related to more fluent speech, more engagement with the interaction, and less expression of hostile behaviors.

Carney, Jost, Gosling, and Potter (2008), using select nonverbal cues based on Funder and Sneed (1993) and Borkenau and Liebler (1995), replicated the associations between higher conscientiousness and lower distractibility and hostility. Similarly, they found that conscientious participants tended to exhibit less hand movement and more direct eye gaze with their interaction partners.

Fewer findings exist for conscientiousness than for some of the other Big Five traits, but in general it seems that conscientiousness relates to behaviors that could be characterized as taking the interaction seriously. Because conscientiousness is frequently defined by tendencies that are not as directly concerned with social interactions as are extraversion and agreeableness, it is possible that these unstructured interactions are not ideally suited to capture relationships with nonverbal behaviors. Perhaps in more goal-oriented situations, conscientious people would exhibit more distinct nonverbal cues.

Openness to experience. The personality trait of openness to experience consists of features such as imagination, sensitivity to aesthetic features and

pursuits, attentiveness to inner feelings, pursuit of variety and novelty, and intellectual curiosity. People who score low on openness tend to be more conventional or traditional in their behavior, preferring familiar routines to new interests (Hogan et al., 2000).

Borkenau and Liebler (1995) found higher openness to be positively associated with more friendliness, more expressivity, less halting speech, and more smiling. Carney et al. (2008) found similar relationships, reporting openness to be associated with more friendliness, more expressivity, and more smiling. Similarly, Gross and John (1995) found openness to be positively associated with more friendliness and more expressivity, though this finding was based on self-reported tendencies rather than observations of behavior. Along those same lines, Berry and Hansen (2000) found that openness predicted observers' evaluations of interaction quality such that the interactions appeared to be more enjoyable when the participants scored higher in openness. In their study, participant openness was also related to more visual attention and less verbalization.

On the other hand, Funder and Sneed (1993) found that higher openness was positively related to a greater disengagement from the interaction and a greater propensity for discussing daydreams or philosophy. This particular finding differs from others in that the participants' openness was rated by knowledgeable informants.

Openness to experience has also been suggested to significantly overlap with the dimension of conservative–liberal (Feather, 1979; Levin & Schalmo, 1974). A longitudinal study by Block and Block (2006) revealed that many of the personality differences between liberals and conservatives that appear in adulthood are already present when children are in nursery school, long before they define themselves in terms of political orientation. Specifically, preschool children who later identified themselves as liberal were perceived by their teachers as self-reliant, energetic, emotionally expressive, gregarious, and impulsive. By contrast, those children who later identified as conservative were seen as rigid, inhibited, indecisive, fearful, and overcontrolled.

Some findings are conflicting. Expressivity has examples going both directions. Because many suggest that openness has two rather distinct components (intellect and aesthetics), there may be differences here caused by different measures emphasizing different facets of the greater trait. As openness to experience is generally considered to be the least visible (Funder & Dobroth, 1987) and perhaps least well-defined of the Big Five, it is not surprising that there is less to say about the relationships between it and nonverbal behavior.

Other Individual Differences

Although in this chapter we primarily focus on individual differences in the context of Big Five traits, many other major categories of individual differences can be considered, and we would be remiss in not touching on a few of them. These stable individual differences include status and dominance, sexual orientation, and intelligence.

Status and dominance. Status and dominance are not necessarily personality traits per se. They are often influenced by life roles or achievement. However, in some cases they are stable dispositions (Gough, McClosky, & Meehl, 1951; Ray, 1981), and their relationship to nonverbal communication can be addressed.

Schwartz, Tesser, and Powell (1982) examined how body position affected perceptions of dominance. They used an artist's rendition of a man and a woman each in a standing position and in a seated position. These images were also manipulated with a pedestal to alter the apparent vertical position of the depicted person. These drawings were paired such that there was a figure on the left and one on the right. Vertical elevation, gender of target, standing versus sitting, and whether the figure was in the foreground of the image were manipulated to result in 64 different combinations. Each undergraduate participant viewed half of these, randomly sampled, and marked which of the two figures was the more dominant. Depictions of people who were physically higher in elevation and in standing posture were perceived as being more dominant. Being in the foreground was perceived as being more dominant. Men were perceived as being slightly more

dominant than women, and figures on the right side of the image were perceived as being slightly more dominant. The authors were somewhat surprised that the standing position was seen as more dominant when across from a seated figure. However, their standing figures were depicted with feet set apart and with a hand in their pocket. The seated figures had hands folded in their lap and had their legs crossed, which have been identified as being indicative of subordinate or submissive behavior (Tracy & Robins, 2007).

Eye gaze, while being a very specific behavior, does have a set of findings regarding its relationship to status. Visual dominance is defined as the ratio of looking while speaking to looking while listening (Exline, Ellyson, & Long, 1975). Ellyson, Dovidio, Corson, and Vinicur (1980) examined women's gaze behavior in situations where one member of the dyad was assigned a high-status position. High-status subjects demonstrated visual dominance ratios close to 1 (equal time spent looking while speaking and while listening), whereas low-status subjects exhibited a much lower rate of visual dominance. Additionally, subjects who scored high on a trait measure of dominance exhibited visual behavior in a manner similar to subjects who had been assigned a high status. This suggests that stable trait dominance and more fluid role-based dominance both influence eye gaze behaviors.

Dovidio, Ellyson, Keating, Heltman, and Brown (1988) continued to explore this finding by adding gender, power, and expertise as conditions. Men and women who were assigned roles in which they held high expertise or high reward power displayed high visual dominance. This finding was the same for people of either gender. Both men and women in lower status conditions looked more while listening than while speaking, producing a relatively low visual dominance ratio. When the roles assigned were held constant, men displayed visual behavior similar to their patterns in the higher status conditions, whereas women exhibited visual behavior similar to lower status conditions. More information about gender and dominance behaviors can be found in an excellent meta-analysis on the subject by Hall, Halberstadt, and O'Brien (1997; see also Chapter 6, this handbook).

Sexual orientation. Sexual orientation is another stable individual difference that can have an impact in how people express themselves. This topic is frequently difficult to navigate. As with discussions of correlates of sex versus gender, correlates of sexual orientation can be misused in proscriptive or deterministic ways rather than descriptive. It is next to impossible to separate the social and cultural identity of an orientation from its mental and biological components. That is, the research in this area cannot yet distinguish whether a nonverbal behavior is a socially agreed-upon behavior to signal one's identity or is a result of the identity itself. Thus, it is important to note that the research we discuss here is descriptive.

Research does suggest that gay, lesbian, and heterosexual sexual orientations can be accurately identified even from very thin slices of behavior or appearance. Ambady, Hallahan, and Conner (1999) showed participants a series of eight still images or silent video clips of gay, lesbian, and heterosexual men and women. Participants made judgments of the sexual orientation of the targets. Gay and lesbian targets were correctly identified at levels above chance, just from brief presentations of photos. Judgments based on dynamic nonverbal behavior (10-s and 1-s silent video segments) were more accurate than on the still photos. Gay men and lesbians were more accurate than heterosexual participants in judging still photographs and 1-s clips but not in 10-s clips, where the accuracy was virtually identical across judges.

Knöfler and Imhof (2007) examined posture in people with different sexual orientations. They recruited unacquainted same-sex dyads of young adult men and women. Dyads were composed of heterosexual participants, homosexual participants, or one person of each orientation. A number of nonverbal positions and behaviors were coded by research assistants. Categories were defined drawing from existing coding schemes (Cashdan, 1998; Ekman & Friesen, 1969; Frey et al., 1989), which combined in order to balance scope, detail, and relevance. Codes for body posture were selected to represent a feminine stereotype, a masculine stereotype, and a neutral pattern of behavior. Specifically, feminine posture was characterized by arms being

closed and touching the torso; body leaning forward and not touching the back of the chair; and legs as closed, folded, and tucked closer to the body. Masculine posture was characterized by an open extension of the body, with arms away from the torso, legs spread or extended, and torso leaning back. The neutral posture was characterized by being relaxed, with limbs and torso neither extended nor retracted. Gender-neutral posture occurred significantly longer in mixed-orientation and homosexual dyads compared to heterosexual dyads. The authors concluded that homosexual individuals were no more likely to imitate a posture more characteristic of the opposite sex—that is, gay men did not present particularly feminine posture, and lesbian women did not display especially masculine posture types. However, both lesbian and gay individuals spent more time exhibiting a gender-neutral posture.

Rule, Ambady, and Hallett (2009) narrowed the scope of information, using only limited photos of women's faces that excluded information beyond the narrow confines of facial features. Women's sexual orientation was identifiable above chance levels, even when the image was presented as briefly as 40 ms. One study found that accurate judgments of male sexual orientation could be made using individual facial features, even when judgments were limited to photos of the target's eyes (Rule, Ambady, Adams, & Macrae, 2008).

Ding and Rule (2012) used similar methodologies but expanded the target pool to include bisexual men and women in addition to straight, gay, and lesbian orientations. Participants perceived bisexual men to be significantly different from straight men but not gay men. Similarly, whereas bisexual and lesbian women were not rated differently, both groups were distinguishable from straight female targets. These findings suggest that a straight versus nonstraight categorization scheme is used when judging sexual orientation. Freeman, Johnson, Ambady, and Rule (2010) investigated whether gendered facial cues might be a driving factor in these assessments. They altered the shape and texture of computer-generated faces on masculine and feminine dimensions. The more a face's shape and texture characteristics were adjusted to look more like the opposite sex, the more likely that face was to be identified as gay or lesbian. These culture-typical stereotypes about people who have nonheterosexual orientations (Freeman et al., 2010; Hartman, 2013) may explain some of the existing findings using identifications of orientation from photos. Use of the stereotype-consistent strategy increased accuracy on the whole. Targets who did not match the stereotype were reliably misidentified.

Most of the research to date has used still photographs as stimuli, leaving plenty of room for advances in the study of dynamic cues. An example is Nicholas's (2004) qualitative field study of eye gaze during social encounters. Nicholas sought to understand gaze and its relationship to triggering or reinforcing one person's perception of another person's orientation. The direct and the broken stare were two variations of gaze that Nicholas assessed as important for signaling and identifying nonheterosexual orientations. According to Nicholas, these types of gazes can be accentuated by other forms of nonverbal communication, such as posture, gestures, and smiles.

Currently, what little research exists on this topic is limited to gay and lesbian sexual orientations with the very occasional inclusion of bisexuality. Future research in this area would do well to include the remaining established orientations to sexual identity. Orientations rarely included are those such as omnisexual and asexual orientations, which are, put more colloquially, the all or nothing orientations, respectively. Additionally, new research is needed that includes conceptions of sexual orientation beyond those developed in Western cultures (Kuru-Utumpala, 2013; Tijsseling, 2011).

Intelligence. Intelligence is an individual difference variable that has been shown to be associated with important life outcomes. Despite this fact, to our knowledge, only two studies have examined the nonverbal correlates of intelligence.

Borkenau and Liebler (1995), described earlier, assessed participants' intelligence using Subscales 1–9 of Horn's (1983) Leistungsprüfsystem, a German intelligence test. People with higher intelligence scores were less likely to dress

in a showy manner. They were more likely to be rated as wearing self-assured facial expressions. Their voices tended to be lower and were rated as being more pleasant. They had fewer halts in their speech and were rated as being easy to understand.

According to Wartenburger et al. (2010), the type of intelligence being considered is important for understanding nonverbal correlates. Fluid intelligence lends itself to selecting task-relevant cognitive information quickly and efficiently. The authors assessed a small sample of German young men and late-adolescent boys. Fluid intelligence was measured using Raven Advanced Progressive Matrices (Heller, Kratzmeier, & Lengfelder, 1998; Raven, 1958). Participants were given a geometric analogies task in which they were to identify whether the relationship between a first pair of shapes matched the relationship between a second pair of shapes. Subsequently, they were asked to describe their strategies for completing this analogies test. This description was video-taped and coded by the researchers using the ELAN annotation software developed at the Max Planck Institute for Psycholinguistics, Nijmegen, the Netherlands (http://www.lat-mpi.eu/tools/elan). Gestures were coded using the Neuropsychological Gesture Coding System (Lausberg & Slöetjes, 2009; Lausberg, Zaidel, Cruz, & Ptito, 2007), specifically focusing on movement gestures and representational gestures. Movement gestures do not contain semantic, iconic, or metaphoric information, whereas representational gestures do. Men scoring high in fluid intelligence used more movement and even more representational gestures when explaining the strategies they used during a geometric analogies task.

These studies are limited to laboratory situations and only include higher education students in their samples, which would likely limit and skew the range of intelligence scores. However, even at zero acquaintance, intelligence can be accurately judged to a certain degree (Borkenau, Mauer, Riemann, Spinath, & Angleitner, 2004). Thus, there must be some nonverbal indicators that are indicative of a person's intelligence. Clearly more research on this topic is needed.

PERSONALITY CORRELATES OF PERFORMANCE IN NONVERBAL COMMUNICATION

Communication is much more than just words. A significant portion of face-to-face communication occurs on nonverbal channels (Mehrabian & Ferris, 1967). Even considering the proliferation of e-mail as a means of communication, advances in video-communication technology are growing apace, and the inclusion of nonverbal communication ability is of continued and growing importance. In this section, we examine the relationships between personality and nonverbal communication skills and abilities.

Nonverbal Decoding

The act of perceiving and interpreting nonverbal behavior is discussed here as *decoding*. Previous research on decoding has shown evidence of important individual differences in sensitivity to the nonverbal communications of others, and some studies have associated these individual differences with personality variables.

Neuroticism/anxiety. Although being nonverbally perceptive would seem like a beneficial ability to have, being perceptive of nonverbal cues is not necessarily always advantageous and may even come at a cost. Some of the earlier work in this domain suggested that elevated levels of trait anxiety are associated with an increased ability to accurately recognize nonverbal emotional expressions. Cunningham (1977) assessed undergraduate participants' nonverbal encoding and decoding abilities in a series of induced and posed emotional expressions.
An equal number of men and women participants were administered a stimulus designed to be either elative (inducing positive mood) or depressive (Velten, 1968). After the mood induction, participants completed two sessions where they read a neutral paragraph aloud, expressing the assigned emotion. In the first session, participants were instructed to focus on using their face and voice to express the assigned emotion and to focus on body expression in the second session. Two weeks later, participants returned to the lab to view fellow participants' videos and attempt to identify which

of the two emotions were being expressed. These attempts were done on isolated channels; face, voice, and body were decoded separately. Cunningham assessed personality using Eysenck and Eysenck's (1968) Eysenck Personality Inventory (EPI). People who scored higher on neuroticism were generally more successful in decoding emotional expressions, particularly in the face over voice and body. Women were also better decoders, and although women generally score higher on neuroticism (Barrett & Eysenck, 1984), this did not drive the relationship.

Surcinelli, Codispoti, Montebarocci, Rossi, and Baldaro (2006) presented Italian subjects with photos of faces. These faces were selected from Ekman and Friesen's (1976) photographs of emotional facial expressions. Participants viewed each image for 10 s and then identified which emotion the face was expressing. Surcinelli et al. found that participants who scored higher in nonclinical trait anxiety were more successful than their less anxious peers at correctly detecting the emotional response of fear in images they viewed for 10 s.

However, Cooper, Rowe, and Penton-Voak (2008) were unable to replicate this finding when the presentation time of stimuli was reduced to 4 s (or less if the participants made their determination more quickly). They used similar methods to Surcinelli et al. (2006). Participants were presented with faces expressing anger, sadness, happiness, surprise, disgust, fear, or a neutral expression. These faces were selected from Ekman and Friesen's (1976) set of emotional facial expression photographs. They gave U.S. university students the State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Nonclinical trait anxiety did not relate to differences in emotion perception across any of the seven emotions.

Shifting findings in the other direction, Matsumoto et al. (2000) measured individual differences in emotion recognition ability using Japanese and Caucasian faces as stimuli. Faces were posed expressing anger, contempt, disgust, fear, happiness, sadness, and surprise. Though the authors reported several different studies, only one study found a negative relationship between neuroticism and performance in emotion recognition. In that particular study, personality was assessed using Eysenck and Eysenck's (1968) EPI.

Puccinelli and Tickle-Degnen (2004) examined the relationship of personality traits to a nonverbal construct (called *leakage*) in women university students. Leakage refers to the finding that people are better able to control their facial expressions than their body's nonverbal expressions (Babad, Bernieri, & Rosenthal, 1989; Edelmann & Hampson, 1981; Ekman & Friesen, 1974; Lippa, 1978; Zuckerman, DePaulo, & Rosenthal, 1986). If a person's underlying state differs from the mood he or she is trying to express, his or her nonverbal behavior in the body is more likely to reflect his or her true state than is his or her face. Puccinelli and Tickle-Degnen assessed participants' nonverbal decoding skill using the Profile of Nonverbal Sensitivity (PONS; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979), which allows researchers to gather separate assessments of a person's ability in perceiving face and body cues. The PONS uses a number of 2-s clips of acted scenarios that are designed to have two main dimensions of tone. Each scenario has a valence option (either positive or negative) and a dominance option (either dominant or submissive). These clips are edited so that each of the face, body, and two nonverbal audio channels are shown in various combinations. Participants are asked to choose between two possible descriptions for the scene happening in each clip. They also assessed subjects' personalities using the NEO Five-Factor Inventory (Costa & McCrae, 1992). Randomly assigned dyads were video-recorded while they discussed their daily lives and aspirations for 10 min. After the interaction, each person completed a survey that included a few questions regarding the rapport he or she felt during the interaction. They found that people who were particularly capable at reading unintentional nonverbal information—information that is "leaking"—were more likely to make their interaction partners uncomfortable. This effect was especially true when the subject of this scrutiny was high in neuroticism.

This finding is perhaps in part due to a bias in perceptions of emotional facial expressions. Knyazev, Bocharov, Slobodskaya, and Ryabichenko (2008) presented Russian adolescents and college students with photographs of faces. These faces were selected from Ekman and Friesen's (1976) set of emotional facial expression photographs. Knyazev

et al. used 10 photos each of angry, happy, and neutral expressions. Participants rated each photo on a scale ranging from –100 (*very hostile*) to +100 (*very friendly*). These ratings were then correlated with a number of personality variables. Trait anxiety was measured using the State-Trait Anxiety Inventory (Hanin, 1989; Spielberger, Gorsuch, & Lushene, 1970). Knyazev et al. used a Russian translation of the International Personality Item Pool measure for Big Five Factor Markers (Goldberg, 1992). People who were higher in trait anxiety were more likely to perceive all faces as being more hostile. Though the finding was not statistically significant, they also found a positive correlation between neuroticism and hostility scores, which is consistent with other findings summarized earlier.

Introversion/extroversion. Another personality dimension that has been found to relate to decoding accuracy is introversion/extroversion. Akert and Panter (1988) measured students' personality with the EPI (Eysenck & Eysenck, 1968). To measure decoding accuracy, they used clips selected from public television talk shows. These silent clips were played for participants, who were then given multiple-choice quizzes about what the people in the clip were experiencing. They found that extraverts were significantly more accurate in interpreting the meaning of nonverbal communication than introverts. In addition, extraverts were more confident that they were accurate decoders than were introverts. Similarly, in one of their studies, Matsumoto et al. (2000), described earlier, found that extraverts were more successful at correctly identifying emotional facial expressions in Japanese and Caucasian faces.

Lieberman and Rosenthal (2001) expanded this finding, suggesting that introverts are less able to multitask and therefore are poorer at nonverbal decoding only when it is not the only task they are attempting to accomplish. They also assessed personality with the EPI (Eysenck & Eysenck, 1968). Lieberman and Rosenthal assigned participants to have a telephone conversation with a fellow participant. Partners were assigned by the researchers based on having similar introversion/extraversion scores. After the interaction, partners each rated the quality of the conversation. Specifically, they rated how well they thought they were coming across to their interaction partner. Some participants made these ratings immediately after the interaction, thus having to recall the conversation as well as make their ratings simultaneously. Others were allowed to listen to an audio-recording of the interaction so they could listen to the conversation without having to participate in it. Later, new judges listened to 30-s content-filtered audio clips of those conversations. Content filtering screens out the higher frequencies on an audio recording that contain the information used to understand words in human speech. The result sounds something like how one might hear a conversation through a wall. The tone of voice, pitch, and prosody are preserved, but almost none of the linguistic content can be identified. Ratings from these judges were compared with ratings of conversation participants to assess accuracy of decoding the partner's enjoyment of the interaction. Introverts who were in the multitasking condition performed poorly in comparison to the accuracy of extraverts or introverts who were not multitasking. In a second study, Lieberman and Rosenthal reinforced this finding by using a similar procedure with two different multitasking activities. When introverts were instructed to concentrate on making a good conversation or to concentrate on assessing how well their partners were enjoying the interaction, their later assessments of the quality of the interaction were less accurate than those of extraverts.

This literature is not entirely consistent. Cunningham (1977), in the study described earlier, found that extraverts tended to be less successful decoders when it came to the body channel of nonverbal behavior. There was no relationship between extraversion and nonverbal decoding ability for face or voice channels. It is perhaps important to remember that Cunningham only used two emotional states, elation and depression, and that these expressions were intentional. However, it is interesting that Cunningham included the differentiation between nonverbal channels, whereas others did not, which might be a route worth pursuing further in better understanding the relationship between extraversion and decoding ability.

Also worth mentioning is that Knyazev et al. (2008), described earlier, found a pleasant bias in

the perceptions of extraverts. Perceivers of happy faces who were higher in extraversion were more likely to rate happy faces as more friendly.

Perhaps the way in which extraversion influences decoding ability is through simple practice due to extraverts' heightened tendencies to socialize. On the other hand, it could be argued that people who are more successfully skilled in interpersonal interactions will find them more rewarding, which may, in turn, reinforce tendencies toward extraversion.

Other individual differences. Though few findings regarding the remainder of the Big Five traits exist in the literature, there is one exception. Matsumoto et al. (2000), described earlier, also found positive correlations between two personality traits, openness and conscientiousness, and performance in decoding posed nonverbal expressions of facial affect. This finding was replicated across three of their studies and across both the Big Five Inventory and NEO methods of self-report assessment of the Big Five.

In addition to extraversion and anxiety findings described earlier, Knyazev et al. (2008) found decoding biases that were related to several other traits. People who scored high on the following traits were likely to perceive faces as being more hostile. The Behavioral Approach System (Gray, 1970) has been theorized to regulate motives to move toward objects or outcomes. Anger, physical aggression, hostility, and verbal aggression all correlated positively with higher than average perceptions of hostility in faces. Intellect, agreeableness, and conscientiousness predisposed subjects to perceive faces as more friendly.

Russell, Stokes, and Snyder (1987) assessed nonverbal decoding skill in boys. Subjects were recruited from local elementary schools and from community mental health agencies serving children with behavioral and emotional difficulties. To measure their nonverbal decoding ability, Russell et al. used a few different performance measures. The Face and Body PONS (Rosenthal et al., 1979) was used, which is a shorter version of the PONS measure described earlier. Additional measures included the Expression Grouping and Cartoon Predictions subtests of the Four-Factor Test of Social Intelligence (O'Sullivan & Guilford, 1976). Expression Grouping is a 30-item multiple-choice test in which subjects choose from four line drawings depicting facial expressions, hand gestures, or body postures the one drawing that best matches the thought, feeling, or intention repeated in each of the three stimulus drawings. The Expression Grouping subtest assesses the subject's ability to abstract common attributes from similar expressive behavior. For the Cartoon Predictions subtest, subjects choose from three line drawings the one that best depicts a resolution to the emotional interpersonal situation depicted by a stimulus line drawing. The Cartoon Predictions subtest assesses the subject's ability to predict the social consequences of emotionally laden interactions. Primary caregivers completed the 131-item short form of the revised Personality Inventory for Children (Lachar, Gdowski, & Snyder, 1982), which was scored on its four factor scales: Undisciplined/Poor Self-Control (Factor 1), Social Incompetence (Factor 2), Internalization/Somatic Symptoms (Factor 3), and Cognitive Development (Factor 4). Russell et al. found that children who were poorer at behavioral inhibition were also poorer decoders of nonverbal communication across the various performance measures used.

Nowicki and Duke (1994) developed the Diagnostic Analysis of Nonverbal Accuracy Scale. In it, participants are presented with a series of posed expressions in face, voice, and body postures. The emotions expressed include happiness, sadness, anger, and fear. After a brief viewing of a still image or an audio clip, participants must select which of the four emotions are being displayed. Nowicki and Duke examined children's accuracy of emotion recognition from posed face, voice, and body-posture stimuli. Accuracy scores increased with age and were positively related to peer and teacher ratings of personal and social adjustment but were not related to IQ.

The correlates of nonverbal decoding ability do not compose a clear picture. Beneficial individual difference variables, such as social adjustment and extraversion, have a positive relationship to decoding ability. On the other hand, neuroticism and anxiety, which are less positive, also have a positive relationship to decoding ability according to some findings. Though much of the research here uses an

overall decoding ability in their studies, it is possible that different subtypes of decoding ability would lead to different relationships. A more nuanced understanding of these relationships is needed.

Nonverbal Encoding

The act of displaying emotions or communicating nonverbally is discussed here under the name *encoding*. Con artists and actors alike make a living off the fact that efficacy in encoding information is an ability or skill that differs between persons and is somewhat stable. However, nonverbal encoding has a weak history of research. This is in part due to the more extensive cost of assessing encoding abilities with performance measures because it requires both a participant to perform as well as multiple observers to rate the performance for each encoder.

H. R. Riggio and Riggio's (2002) meta-analysis of expressive behavior and its relationship to personality demonstrated a relatively stable relationship between extraversion and emotional expressiveness. However, this meta-analysis combined several different types of measurements of expressiveness. Earlier we discussed the findings relating extraversion to stable tendencies toward expressivity. Here, however, we are discussing the studies that included a measure of quality of expressivity, though in some cases these overlap. Of particular interest are the studies they examined that used performance methodologies. Though self-reports of expressivity had the strongest relationship to extraversion, studies with posed and spontaneous performance measures of expressivity also demonstrated a reliable relationship to neuroticism. Among the studies included in the meta-analysis, R. E. Riggio, Widaman, and Friedman (1985); R. E. Riggio and Friedman (1986); and Buck (1975) found that extraverts were better at accurately encoding nonverbal expression than introverts, and that people who scored higher on neuroticism were generally less successful in encoding posed emotional facial expressions. Cunningham (1977) found that extraversion was positively related with emotion encoding ability in both the posed and spontaneous conditions.

Tucker and Friedman (1993) video-recorded participants in three situations. The situations included engaging in natural social interaction, describing a past emotional experience, and posing various basic emotional expressions. Naive observers judged which emotion was being communicated. Tucker and Friedman used the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) to assess personality, and findings suggest that nonverbally skilled, charismatic participants were higher in extraversion and expressivity.

In an unpublished study involving a nonverbal encoding measure, Todd and Bernieri (2014) moved beyond posed facial expressions of emotions. They developed a task that involved participants silently acting out a variety of simple social scenarios chosen to be relevant to everyday lives of university students. These scenarios had three valence options for the same scene: a positive, negative, or neutral manner. Participants were assigned several different scenarios and valences and enacted them for observers. A group of fellow participants were the judges who attempted to identify which scenario and valence the encoder had been assigned to portray. Whereas encoding scores were positively correlated with measures of empathy and other measures of social skill, the correlations with personality variables in the NEO Five-Factor Inventory (Costa & McCrae, 1992) and the California Adult Q-Sort (Block, 1961/1978; as modified for use by nonprofessionals by Bem & Funder, 1978) were negligible, which suggests that perhaps encoding skill beyond posed facial expressions does not have a simple relationship with personality.

There are very few studies measuring nonverbal encoding ability, and even fewer that relate that ability to measures of personality. More research is clearly needed in this area before firm conclusions can be offered.

CONCLUSIONS AND DIRECTIONS FOR THE FUTURE

Though the picture painted is not always clear, there seems to be little reason to doubt that nonverbal behavior and personality have deep and meaningful connections. Research thus far has not generally been organized from a personality perspective, making integration of findings and applications to

other domains difficult. Future research needs to be better organized. For now, we suggest that the Big Five framework would be a good place to start. Future studies of nonverbal behavior should routinely include personality measures, especially of the Big Five, and report the correlations even when the primary focus of the study is perhaps elsewhere. This practice would, over time, allow consistent and coherent relations between personality and nonverbal behavior to more clearly emerge.

A second suggestion is that future research more purposefully focus on the intersection of personality and nonverbal behavior. As was seen throughout this chapter, these relationships were often reported as almost an aside to the main purpose of various studies. This lack of emphasis on personality is perhaps unsurprising considering the history of the field and the fact that many of the researchers in nonverbal communication were trained in social psychology rather than personality. While reviewing the literature, we often came across otherwise excellent studies of nonverbal behavior that gave individual differences only cursory attention or even ignored them altogether. It is time that nonverbal behavior and personality relationships got more of the spotlight.

Third, researchers exploring the intersection between personality and nonverbal behavior would do well to heed the hard-won methodological gains made in personality research over the past few decades. These gains include aggregating behaviors across situations, assessing behaviors at more general levels of analysis, and using better standardized measures.

Using aggregation or multiple measurements is perhaps the biggest lesson learned from the person–situation debate. Personality researchers have established that it is unwise to focus on one behavior or one situation when attempting to assess correlates between traits and behavior. To establish whether a nonverbal behavior relates to a personality trait, multiple opportunities to assess the appearance of the given behavior should be used rather than a single instance. Behaviors, of course, change substantially across situations, but relative or rank-order consistency may reveal consistent patterns. For example, people will vary considerably in their expressivity depending on context, but highly expressive people may consistently be the most expressive people in the room, regardless of context.

Another hard-learned lesson is standardization. Though advances have been made in nonverbal measurement systems, assessment of nonverbal behavior still has not settled the way personality assessment has. It would be wise to move away from the apparent grab-bag of variables that results in each lab generating its own definitions and measures of nonverbal behavior. As elsewhere in psychology, most of the studies of the connection between personality and nonverbal behavior lack any form of close replication. Many large gaps remain that make it difficult to perform meta-analysis of similar methodologies or findings. When looking at different studies using different methods, the shifting relationships may look like instability rather than the complex flux of many different variables intersecting in a single moment. This is probably why in the present chapter we were able to draw strong conclusions only at the most general level (e.g., extraverts are more expressive overall).

As any personality psychologist will tell you, one size does not fit all, and the world tends to work better when that fact is taken into consideration. It stands to reason that in situations where different personalities need to work together (e.g., military, workplace, politics, anywhere people are), a good understanding of how people's personalities might influence their nonverbal behaviors could be useful for improving communication. There is still much to be learned about the ways individual differences influence nonverbal communication and styles, but we hope that this chapter proves as a useful stepping stone along the path of pioneers in this wide-open domain.

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