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Nonverbal Perception

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INTRODUCTION AND OVERVIEW

Popular lay books promise to reveal the secrets of nonverbal communication. Various books attest that uncovering these “secrets” will provide opportunities to make fabulous first impressions, meet attractive romantic partners, find career success, and even control others. If these claims rang true, we would all have the perfect partner, our dream job, and interpersonal success would abound. Clearly, this is not the case. Those who study nonverbal behavior recognize that such interpersonal communication cannot be defined in a dictionary-type manual. Shifty eyes do not unequivocally indicate that one is lying, just as every brush to one’s arms does not indicate sexual attraction. The messages conveyed across nonverbal channels are much more nuanced and complex than these lay volumes imply. Rather than parsing out the influence of nonverbal cues in interpersonal context, nonverbal researchers recognize and acknowledge that verbal and nonverbal signals work in conjunction to convey messages (Friedman, 1979).

While popular lay books may be misleading in terms of uncovering “secrets” of nonverbal communication, the books do highlight the fundamental importance of nonverbal behavior to social encounters and how we perceive others. Another person’s behavior influences our impression of that person just as our own behavior influences others’ perceptions of us. If you meet a stranger for the first time and he averts his gaze, refuses to shake your hand, and mumbles a greeting, you are likely to come away with the impression that he is unfriendly, shy, or even perhaps hostile. Furthermore, this impression would (and does) develop in a brief amount of time, without much conscious processing (Bargh, 1994).

Nonverbal perception refers to the process by which individuals (i.e., judges or perceivers) perceive the nonverbal behaviors of others (i.e., targets) and how that perception shapes subsequent judgments and impressions of targets (Ambady & Weisbuch, 2010). As most nonverbal perception occurs in the context of a social interaction, the process of nonverbal perception is social-cognitive in nature. There is a particular emphasis in this chapter on the *accuracy* of nonverbal perception; i.e., How well do individuals accurately decode and interpret the nonverbal behavior of others? The reason for an emphasis on accurate nonverbal perception is explained by Funder (1999), who stated that “the psychological process of accurate [person] judgment is as much social as it is cognitive” (p. 117), and thus, accurate person perception represents a true social-cognitive process. Nonverbal perception plays an essential role in accurately determining the states and traits of others.

Chapter outline

This chapter covers several aspects of nonverbal perception. In the first section, we review some major social-cognitive theories of person perception. These person perception models are presented because nonverbal perception is not only about detecting nonverbal behavior but also includes how that nonverbal perception influences impression formation and whether such impressions are accurate. The models I discuss are the Brunswik (1956) lens model, the Realistic Accuracy Model (RAM; Funder, 1995), the ecological theory of social perception (McArthur & Baron, 1983), the parallel process model (Patterson, 1995), the social relations model

(Kenny & La Voie, 1984), and the PERSON model (Kenny, 2004). Whereas these theories do not represent all social cognitive theories involving nonverbal perception, they do provide a representative array of how social psychologists (as well as others) conceptualize the interplay of nonverbal behavior, qualities of targets and perceivers, and social interaction features in the process of person perception. Each of the models presented involves nonverbal perception as part of the larger process of person perception.

In the next section of the chapter, four essential components of nonverbal perception are reviewed: nonverbal cue qualities, target qualities, perceiver qualities, and interaction qualities. These components are discussed because each component has the potential to affect the accuracy of impressions formed of the target by a perceiver during the process of nonverbal perception. Furthermore, the four components of nonverbal perception represent various factors that are included in most social-cognitive models of person perception. In the final section of chapter, some examples of research domains regarding the perception and accurate detection of various states and traits are discussed, including the accurate detection of emotions, sexual orientation, and prejudice. The aim of this section is to highlight how nonverbal perception affects accurate person perception.

As I discuss the importance of nonverbal signals on impression formation and person perception, the research reviewed in this chapter primarily focuses on two classes of nonverbal cues: kinetics, which includes body movements such as gestures, posture, and gait; and vocal cues, which include speech features outside the content of what is being said, such as pauses, interruptions, and pitch (Burgoon & Hoobler, 2002). In terms of perceiving others, researchers often make the distinction between sending nonverbal signals and receiving nonverbal signals. If a message is being communicated through nonverbal channels, successful transmission of that message depends on the sender (encoder or target) as well as the receiver (decoder or perceiver). Given that the purpose of this chapter is nonverbal *perception*, a greater proportion of research reviewed here focuses primarily on nonverbal decoding: i.e., the perception and interpretation of nonverbal signals. This chapter distinctly focuses on nonverbal cues *outside of the face*, facial expression, or eyegaze (for a discussion of face perception, see Chapter 6). The chapter addresses adult social perception: thus, research involving children or animals is not discussed. Additionally, there is an extensive set of research involving nonverbal cues and deception, and summarizing such research is beyond the scope of this chapter. (For reviews, see DePaulo

et al., 2003; Vrij, 2000, 2006.) In general, the research summarized reviews person perception, nonverbal behavior, and accuracy between strangers or in zero-acquaintanceship paradigms (Kenny & West, 2008). Now, let me begin with a discussion of some social-cognitive models of person perception that involve nonverbal perception.

SOCIAL-COGNITIVE MODELS OF PERSON PERCEPTION

Most social-cognitive models of person perception incorporate nonverbal perception, and these models of person perception often test not only what impressions are formed but also whether such impressions are accurate assessments of a target's state or trait. There are several universal elements in the models presented here. All of the models address the accuracy of nonverbal perception. Accuracy is often defined as a significant correlation between targets' measured criteria (e.g., scores of extraversion from the Big Five Inventory) and perceivers' ratings of targets on that variable (e.g., perceivers ratings of targets' extraversion levels); thus, accuracy indicates better-than-chance levels of detecting the state or trait. (See Hall, Andrzejewski, Murphy, Schmid Mast, & Feinstein, 2008 for a discussion of various methods of assessing accuracy in judgments of states and states.) Presumably, this process of accurate person perception is dependent upon the appropriate and accurate decoding of nonverbal behavior, as assessed through nonverbal perception. Each model proposes mechanisms for understanding how a social interaction between a target and perceiver involves nonverbal perception and how such perceptions may affect accurate person perception.

Another universal feature of the presented models is the assumption of (or explicit reference to) automaticity in the process of nonverbal perception, as much of nonverbal perception is considered automatic (Choi, Gray, & Ambady, 2005; Lakin, 2006; see also Chapter 2). As Bargh (1994) noted, automatic processes involve four aspects of cognition: awareness, efficiency, intention, and control. For the most part, nonverbal perception occurs outside awareness, is extremely efficient, occurs without intention, and is not necessarily controllable. Studies show that individuals' impression formations and behaviors are influenced by nonconscious cues (e.g., Chartrand & Bargh, 1996). The automaticity associated with nonverbal perception is reflected in research on mimicry and the "chameleon effect" (Chartrand

& Bargh, 1999). Mimicry is generally considered to be the imitation of others during a social interaction, usually without conscious intent (Hess, Blairy, & Philippot, 1999). Several studies demonstrate the automaticity of such processes by documenting that participants do not report awareness that mimicry took place or accurately describe the processes that led to increased liking of interaction partners who unobtrusively mimicked the participant's behavior (Chartrand & Bargh, 1999; Chartrand, Maddux, & Lakin, 2005). In sum, the social-cognitive models of person perception presented in the next section all involve nonverbal perception, and the accuracy and automaticity associated with that perception. The next section briefly reviews these person perception models.

Brunswik's (1956) lens model, as applied to person perception

The lens model approach is based upon a visual perception paradigm as applied to social situations by Brunswik (1956). This approach employs an individual cue as source of information influencing the resulting impression. A Brunswikian approach to a two-person interaction posits that a perceiver takes in information about a target from many cues. Figure 10.1 presents a modified Brunswik lens model as it applies to social perception. On the left, the perceiver views a target individual and forms an impression. Presumably, this impression is shaped by the middle construct, the nonverbal behavior emitted by the target. On the right exists the target's true personality trait or characteristic that is being assessed. The arrows in Figure 10.1 represent the data or analyses available to the researcher employing a

Brunswikian lens model. The researcher can investigate which cues are influential in a perceiver's impression by comparing the emitted behavior to the perceiver rating (cue utility). A researcher can also explore which cues actually indicate the personality construct of interest by comparing emitted behavior with the target's characteristic (cue validity; Brunswik used the term *ecological validity*). Finally, the comparison between the perceiver's impression and the target's true personality reveals how well the perceiver was able to assess the target. In such instances, the match (or mismatch) of the impression to the existence of an attribute is considered accuracy (Brunswik used the term *achievement* or *functional validity*).

Many applications of the Brunswik lens model involve extensive measurement of many specific nonverbal behaviors, as well as manipulating the presentation of those cues to the perceiver (i.e., judgments made from transcripts of social interactions, audiotape or videotapes, or photographs). For example, several studies also demonstrated that perceivers can accurately perceive intelligence from short excerpts (i.e., "thin slices," as described later) of targets' behavior (Borkenau & Liebler, 1993, 1995; Murphy, 2007; Murphy, Hall, & Colvin, 2003; Reynolds & Gifford, 2001). Each of these studies included the measurement of nonverbal cues related to speech and body position to investigate the association between such behaviors and judgments of intelligence. Other personality traits have been examined in this lens model approach, including agreeableness and dominance (Gifford, 1994), assertiveness (Schmid Mast, Hall, Murphy, & Colvin, 2003), and the Big Five personality traits (extraversion, openness, conscientiousness, agreeableness, and neuroticism; McCrae & Costa, 1990) (Borkenau & Liebler, 1993, 1995; Carney, Colvin, & Hall, 2007; Kufner, Back, Nestler, & Egloff, 2010). Ambady, Bernieri, and Richeson (2000) suggested that the lens model's usefulness in understanding the processes associated with person perception cannot be understated:

The lens model, by integrating the perceiver, the target, and the mediating cues, provides a theoretical framework and methodological structure that allows an investigator to examine [impressions based on brief exposure to targets] with a degree of precision and perspective that reveals the wealth of information contained within a few brief seconds of expressive behavior (p. 238).

In sum, research employing the Brunswikian lens model demonstrates that nonverbal cue qualities play a prominent role in the impression formation and accuracy of target assessment.

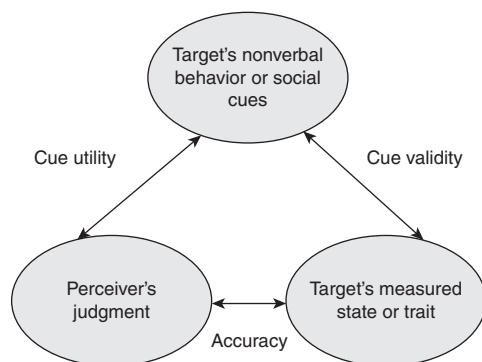


Figure 10.1 Modified Brunswik (1956) lens model as applied to person perception.

McArthur and Baron's (1983) ecological theory of social perception, based on Gibson's (1979) theories of object perception

In response to a number of research studies that employed the Brunswik lensmodel to deconstruct person perception, Zebrowitz and Collins (1997) suggested that the Brunswik lens model may be narrow in utility: i.e., researchers may end up with a list of behaviors associated with impressions and personality traits but those lists vary depending on the trait assessed and the behaviors that were measured. Zebrowitz and Collins suggested that such results are far from ideal and provide little theoretical grounding for understanding the construct of person perception accuracy as a whole. Instead, the authors propose that a Gibsonian ecological approach, which is a theoretical application, as opposed to the Brunswikian methodological model, is more appropriate.

Previously, McArthur and Baron (1983) outlined how the Gibson ecological approach could be applied to social perception. The authors distinguished four elements of this model that make it particularly constructive for understanding processes associated with social perception. The four components of the model assert that: (1) the perception of others is an adaptive function where information contained in the environment guides behavior in social interactions; (2) such information is revealed in events such as social interactions; (3) affordances, which are opportunities where the stimulus (e.g., an individual in the social interaction) may be able to act or be acted upon by objects such as another individual in the environment, are revealed in social interactions; and (4) a perceiver in a social interaction must be aware of or be attuned to such affordances in order to complete the impression formation. For example, in order for a perceiver to recognize extraversion in another, the perceiver must notice the hand gestures, vocal qualities, and/or speech patterns related to extraversion. If the perceiver is not paying attention (i.e., he/she is distracted or looking elsewhere), then extraversion cannot be accurately assessed.

According to McArthur and Baron's (1983) ecological perspective, social cues provide affordances that allow the perceiver to detect relevant and important social information. For instance, a heavy-footed walking gait with long strides would indicate anger and inform the perceiver that threatening circumstances may be impending (Montepare, Goldstein, & Clausen, 1987). The ecological perspective emphasizes that focusing on one valid cue may not be sufficient to form an accurate perception. Using extraversion as an example, relying solely on the cue of a loud

voice to indicate extraversion may not be sufficient for a perceiver to form an accurate impression, because surely there are individuals who are not extraverted but do possess loud voices. Yet, if we know that the target individual has a loud voice, uses large hand gestures, and is highly talkative, the combination or configured structure of these behaviors could accurately inform the perceiver's impression of extraversion. Zebrowitz and Collins's (1997) ecological theory of social perception has been applied in a variety of research paradigms, including impressions and cues of the Big Five (Church, Katigbak, & del Prado, 2010) and rapport (Tickle-Degnen, 2006).

Funder's (1995) Realistic Accuracy Model

Funder proposed his Realistic Accuracy Model (RAM) as a paradigm for understanding the accurate perception of a target's personality (Funder, 1995, 1999). RAM is based on the premise that personality perception can be accurate and is dependent on several factors, including the detection and availability of behavioral cues. While Funder primarily sets forth a model regarding the accurate perception of personality traits, most of the model's components could also apply to the accurate perception of social states (e.g., emotions, anxiety, etc.). Four elements are essential to RAM. The first element, relevance, is that information or behavior related to the target's trait (or state) must be emitted: for example, an extraverted person emits the behaviors of a loud voice and demonstrative hand gestures. The second element of RAM, availability, is that the behavioral information must be available for the judge to detect it: the target individual must be in a situation by which the nonverbal behavior can be displayed. The third element is detection: the judge must detect the behavior through perception. The fourth and final element of RAM, utilization, occurs when a judge makes use of the behavioral information to make a judgment about the target. According to RAM, when a judge uses each of these elements exactly, achievement of judgment accuracy will occur.

Funder (1999) acknowledges that RAM is influenced by Gordon Allport's perspective on the integration of social psychology and personality psychology, as well as the social perception models of Brunswik's lens model (1956) and Gibson's ecological perspective (1979). Furthermore, the model is interdisciplinary, as elements of the model relate to social psychology (availability), personality psychology (relevance), and social-cognitive psychology (detection, utilization).

Funder argues that investigating person perception accuracy should occur with an interdisciplinary approach and to examine such processes through only one lens (e.g., only social psychology or only personality psychology) would not reveal the complexities of such processes. Studies applying RAM demonstrate its utility in understanding person perception accuracy (Blackman & Funder, 1998; Letzring, Wells, & Funder, 2006; Spain, Eaton, & Funder, 2000).

Patterson's (1995) parallel process model

Patterson (1995) introduced a parallel process model whereby nonverbal communication is not dichotomized into encoding and decoding. Instead, Patterson noted that encoding and decoding are occurring in parallel by any given participant in the interaction. Patterson referred to participants in any given social interaction as actors, and these actors, as well as the outcome of the social interaction, are influenced by a variety of factors. According to the model, person perception is the result of a combination of four related factors: (1) determinants, which are variables such as culture, biology, and personality; (2) social environment, which is (to some extent) the choice of participants in the interaction; (3) cognitive-affective mediators, such as disposition, affect, goals, or cognitive resources of interactants; and (4) person perception and behavioral processes, which include the interactants' attentional focus and cognitive effort, as well as the behavioral intentions and actual behavior. The model encompasses the social-cognitive processing of nonverbal perception by unifying two aspects of social interaction: behavioral processes and social judgments related to nonverbal behavior (Patterson, 2006). Patterson (1996) emphasizes the social-cognitive nature of the parallel by linking the behavioral and cognitive aspects of person perception into one underlying, dynamic system.

Kenny and La Voie's social relations model (1984) and Kenny's (2004) PERSON model

Kenny and La Voie (1984) presented a social relations model (SRM) designed to study the perception of personality within an unstructured social interaction. Various components of the model assess variance attributed to a perceiver, a target, and the interaction ("relationship" effects). One requirement of the model is that multiple

interactions occur between targets and perceivers, usually in a round-robin design. Consequently, the SRM can account for independent and non-independent sources of variances within a social interaction (Kenny, 1994; Malloy & Kenny, 1986). Kenny and Albright (1987) then demonstrated how the SRM may be applied to accurate interpersonal judgments by asking whether individuals can accurately perceive the personality of strangers. The SRM has been applied in a variety of research paradigms, from measuring liking between unacquainted pairs (Chapdelaine, Kenny, & LaFontana, 1994) to perceptions of psychopathy (Mahaffey & Marcus, 2006).

Kenny's (2004) PERSON model is a more elaborate design on interpersonal perception. The model was designed to incorporate both categorical information (nonbehavioral information about a target such as physical appearance and demographic features such as age and gender) and behavioral information and how these sources of information combine to influence person perception and accuracy. The model attempts to explain the sources of variance associated with person perception and generally assumes that interpersonal perception contains both accuracy and inaccuracy. The acronym PERSON refers to six possible sources of independent variance in interpersonal judgments: personality, error, residual, stereotypes, opinions, and norms. PERSON is presented as comprehensive model to explain impression formation as it unfolds over time and multiple acts (i.e., target behaviors). The model stresses the importance of understanding interpersonal perception as a complex series of acts, rather than one single act of perception.

Earlier, Kenny (1991) distinguished between the concepts of consensus and accuracy in interpersonal perception. Consensus refers to how much agreement exists between judges who rate the same set of targets: i.e., Do judges generally agree in their judgments of a target? Accuracy, however, depends upon a criterion or outcome variable that can be used to assess how well judges perceive targets. For example, several judges may give similar ratings of a target's extraversion level but those ratings may not correspond to the target's extraversion level as measured by a self-report questionnaire. In this example, the agreement of the judges amongst themselves reflects consensus, but the judges are not accurate in their perception because their ratings do not match the criterion variable of measured extraversion level. The PERSON model can be used to decipher components of interpersonal perception such as perceiver consensus and acquaintanceship effects and allows for the mathematical computation of different variances involved in interpersonal perception. So far there is little empirical

evidence that directly tests PERSON (likely due to its recent formulation), but assumptions and predictions of the model show promise and many studies test various components of the model (e.g., Srivastava, Guglielmo, & Beer, 2010; Vazire & Mehl, 2008).

In sum, the six social-cognitive models of person perception reviewed here all involved the process of nonverbal perception as an essential function in accurately detecting the states and traits of others. Universal features of these models include the role of nonverbal behavior, the automaticity of the processes of person perception, and the accuracy of perceivers in detecting the states and traits of others. Now, let us examine in more detail the process of nonverbal perception. Specifically, we will examine four essential components of nonverbal perception in more detail.

FOUR COMPONENTS OF NONVERBAL PERCEPTION

In terms of a social-cognitive process, nonverbal perception involves four primary components: (1) qualities of the nonverbal behavior being displayed; (2) qualities of the target individual, which may affect the expression of nonverbal behavior; (3) the process of perception by the perceiver, including a perceiver's states and traits, which may affect how that nonverbal behavior is perceived; and (4) qualities of the interaction that may affect the emittance or perception of nonverbal behavior. These four components, and facets of each component, are illustrated in Figure 10.2. Nonverbal cue qualities refers to qualities of the nonverbal behavior being displayed such as speech and voice cues, body cues, and other nonverbal cues such as odor, time, space, and environmental contexts; and whether the cue is presented as static (as in photographs) and/or dynamic (as in video). Target and perceiver qualities refer to aspects of the target or perceiver which may affect how nonverbal behavior is expressed or perceived: these include qualities such as emotional states; personality characteristics (e.g., intelligence, extraversion, etc.); and sociocultural attributes such as age, gender, and culture. Finally, interaction qualities refer to aspects of the interaction between target and perceiver such as the interaction channel (e.g., audio or visual channels), the perceiver's orientation during the interaction (e.g., within the interaction or observing the interaction), interaction length, and the acquaintanceship between perceiver and target. Each component has the potential to affect impressions that are formed based on the

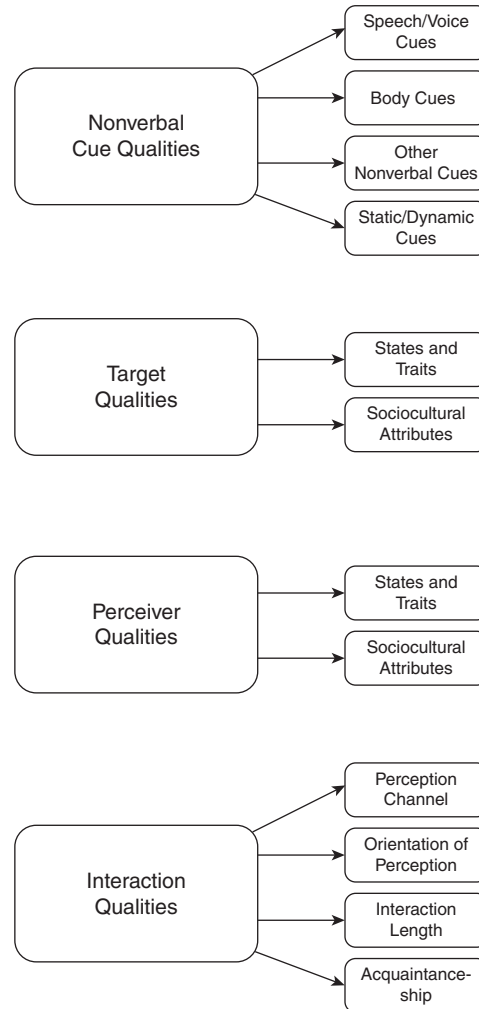


Figure 10.2 Four components of nonverbal perception. Each component contributes to the process of nonverbal perception and consequently has the potential to affect impressions that are formed based on the perception of nonverbal behavior.

perception of nonverbal behavior. Most social-cognitive models of person perception incorporate nonverbal perception, including most, if not all, of these four primary components of nonverbal perception.

Component 1: Nonverbal cue qualities

In this section, various aspects of nonverbal cues and how those features of nonverbal cues may

influence or relate to impressions formed during nonverbal perception are discussed.

Nonverbal cues of voice and speech

One nonverbal cue quality that has the potential to shape person perception is paralanguage; paralanguage is the study of the nonverbal components of speech that communicate emotion and meaning. Speech-related qualities such as pauses during speech, the use of fillers (e.g., “um” or “ah”) or qualifiers (e.g., “sort of”) influence not only how well a speaker communicates but also any subsequent impressions formed by listeners. As Knapp and Hall (2010) noted, listeners are not only influenced by *what* is said by the speaker but also *how* it is spoken. In a classic study, Addington (1968) investigated the effect of voice qualities and speech rate on personality perceptions. Trained male and female speakers were instructed to read a standard passage with seven different voice qualities: breathy, tense, thin, flat, throaty, nasal, and orotund (i.e., richness or fullness). Speakers were also instructed to vary the speech rate (slow, normal, or fast). High reliability was found among judges who rated the speakers for the seven different speech qualities. Raters judged the voices on 40 different personality characteristics such as enthusiastic–apathetic, intelligent–stupid, sensitive–insensitive, kind–cruel, sincere–insincere, and the like. Results showed that voice qualities clearly influenced raters’ impressions; for example, breathiness in females was associated with more femininity and being more shallow, while breathiness in males was associated with being younger and more artistic. Other findings showed that a thin voice was associated with being colder and sluggish, a faster speech rate was associated with being more animated and extraverted, and nasality provoked “a wide array of socially undesirable characteristics” (p. 502).

Subsequent research substantiated the influence of various voice qualities on impressions of strangers. Some illustrative findings include research showing individuals with “childlike” voices were perceived as weaker, less capable, and warmer than individuals with more mature-sounding voices (Berry, 1992; Montepare & McArthur, 1987). Childlike voices were described as having higher pitch and greater tightness, as well as less clarity. Jittery voices were perceived as older (Hummert, Mazloff, & Henry, 1999). Submissive voices were rated as more attractive than dominant voices (Raines, Hechtman, & Rosenthal, 1990). Individuals with voices rated as attractive were judged as more warm, honest, and likeable (Berry, 1990, 1992). In sum, voices and vocal qualities influence how individuals are

perceived by others and “whether we like it or not, our voices do elicit stereotyped personality judgments” (Addington, 1968, p. 493).

Nonverbal cues of the body

Nonverbal cues of the body include factors such as body appearance and movement, gait, gestures, posture, and touch. Again, using the example of target attractiveness, one study found that 20% of overall female attractiveness was attributable to body attractiveness (Mueser, Grau, Sussman, & Rosen, 1984). Another study found that female body attractiveness was positively correlated with body femininity, whereas male body attractiveness was associated with body “averageness” and body masculinity (Peters, Rhodes, & Simmons, 2007). Body posture and position can also influence impressions. A listener who leans forward towards a speaker undoubtedly is perceived as a more involved conversation partner than one who leans back or away. Forward-leaning postures are perceived as indicative of rapport, whereas a backward lean can convey the impression of relaxation or boredom. Gender roles suggest that men adopt a “wide” sitting position with legs apart, whereas women sit in a “closed” position; indeed, targets who sat in a wide position were perceived as more masculine and targets who sat in a closed position were perceived as more feminine (Vrugt & Luyerink, 2000). In one detailed study involving computer animation software to pose mannequin figures in a variety of positions and angles, certain target body postures were found to be associated with various emotions (Coulson, 2004). Sadness was perceived when the mannequin was posed with a chest forward bend and arms at sides, whereas surprised was marked with backwards head and chest bends as well as abdominal twisting. Other body cues, such as head positioning, can influence perceptions; a raised head can convey dominance, whereas a bowed head conveys sadness (Mignault & Chaudhuri, 2003).

Gait information can be useful in person perception, and it can be a powerful source of trait impressions (Montepare & Zebrowitz-McArthur, 1988). Some have argued that gait is particularly relevant during person perception because gait information is one of the first cues available of an approaching stranger (Sakaguchi & Hasegawa, 2006). One interesting line of gait perception research has investigated how potential targets of assault are identified by assailants. Research suggests that potential victims are often identified with awkward or inconsistent movements. Targets who walked slowly, with short strides and less arm swinging, were rated as more vulnerable to attacks (Gunns, Johnston, & Hudson, 2002). Targets identified as potential victims (as rated

by prison inmates) tended to lack interactional synchrony in their body movements (Grayson & Stein, 1981).

Another body cue related to nonverbal perception is touch. Touches can convey impressions such as dominance and affection. For example, pictures of individuals holding hands or engaged in touching a partner's face were rated highly in perceived affection, whereas pictures of hand-shaking targets were rated as least affectionate (Burgoon, 1991). Touch also conveys intimacy and emotion (Thayer, 1986). Touch increased rates of compliance (Patterson, Powell, Lenihan, 1986) but touches by strangers were perceived as aversive (Sussman & Rosenfeld, 1978). The form and length of touch, as well as the gender composition of the touch exchange, all affect perceptions of touch; for example, 1-second hugs were perceived more positively than 3-second hugs (Floyd, 1999). Self-touch refers to touching one's own body such as the head, trunk, arms, or legs. Self-touch as a social behavior has been considered a window into psychological functioning but it may also reflect anxiety or depression in the self-toucher (Mehrabian, 1972). Studies of self-touching show that more self-touching in mock interviews increased the likelihood of a hiring recommendation (Goldberg & Rosenthal, 1986). In general, perceptions related to interpersonal touch are complicated by strong cultural norms about appropriate touching, the gender composition of the touch exchange, and the acquaintanceship of the involved individuals.

Other nonverbal cues

A variety of other cues influence nonverbal perception, including signals related to odor, personal space, time, and environmental contexts (see Knapp & Hall, 2010 for a review). For instance, olfactory cues can have powerful influence on how we perceive others. In one study, male target's body odor attractiveness (a composite variable of ratings of pleasant, sexy, and attractive) was rated by women who smelled the T-shirts that the male targets wore to bed two nights in a row (Foster, 2008); the women's fertility affected attractiveness ratings, where body odor attractiveness correlated with overall attractiveness only in the fertile women condition. Additional studies have shown similar results; sexiness ratings of male body odor were correlated with targets' facial attractiveness and dominance, and in turn, these correlations were stronger during female perceivers' peak fertility (Havlicek, Roberts, & Flegr, 2005; Rikowski & Grammer, 1999). Other nonverbal cues include hand gestures and head movements, which are often displayed in conjunction with speech (Hadar, Steiner, & Rose, 1985).

Such movements can help regulate the flow of conversation and signal listening and engagement in a conversation (Birdwhistell, 1983).

Static and dynamic nonverbal cues

Another quality of nonverbal cues to consider is how the cues are displayed to a perceiver; that is, does the perceiver view the nonverbal behavior through static displays (i.e., photographs or drawings), or dynamic displays? Static displays have an extensive history in the study of person perception and impression formation. Though much of this literature emphasized impressions from facial photographs, there is still a substantial portion of research that investigated impression formation from static stimuli of full body or situational contexts. As an example, attractiveness is one area that makes broad use of static stimuli. Research using photographed stimuli showed that lower body mass index (BMI) and hip-to-waist ratio in women's bodies were positively correlated to ratings of attractiveness (e.g., Singh, Dixon, Jessop, Morgan, & Dixon, 2010; Wilson, Tripp, & Boland, 2005). Women with slumped posture (as displayed in photographs) were rated as less attractive than women with standard or upright posture (Osborn, 1996). Other examples of studies involving photos and impression formation include judging emotion in bodily expressions and poses (Coulson, 2004; Ruffman, Sullivan, & Dittrich, 2009), the relative status of individuals in photographs (Hall, Carter, Jimenez, Frost, & Smith LeBeau, 2002), intelligence (Zebrowitz, Hall, Murphy, & Rhodes, 2002), and relationship status (Sternberg & Smith, 1985).

While static stimuli have proffered a wealth of information regarding associations between nonverbal cues and subsequent impressions, judgments based on dynamic displays may be closer to how individuals experience actual interactions than judgments based on static displays. Dynamic displays refer to behavior with active qualities such as movement or auditory information. Dynamic stimuli may also provide temporal information, as well as muscular cues (as in the case of video stimuli), that can only be apparent in dynamic displays as opposed to captured stills of bodies or expressions (Wehrle, Kaiser, Schmidt, & Scherer, 2000). Examples of dynamic displays could be video clips of social interactions or audiotaped discussions. Another example of dynamic stimuli is the use of point-light displays. Point-light displays are typically generated by recording targets in motion (e.g., walking). In a dark background, targets are usually dressed in black clothing and different areas of the body are marked with light points or reflective tape and/or objects (e.g., beads). The perceiver essentially

sees small points of light against a black background, with the light points corresponding to the target's movements. Using this technique, researchers have found that perceivers are better-than-chance at detecting characteristics such as gender, age, and emotion (Barclay, Cutting, & Kozlowski, 1978; Montepare & Zebrowitz-McArthur, 1988; Ruffman et al., 2009).

Given that individuals spend a large portion of time in dynamic social interaction, the ecological validity of dynamic displays may present more insight into the influence of behavioral cues on person perception processes. However, as Naumann and colleagues (2009) pointed out, judgments or impressions about others can clearly be shaped by both static (e.g., clothing) and dynamic cues (e.g., voice qualities, body movement). In one study, Naumann et al. found that perceivers were better-than-chance at detecting personality characteristics such as extraversion, emotional stability, and self-esteem from photographs of targets who were instructed to pose in a standardized manner. Another study showed that narcissism could be detected at better-than-chance rates from photographs (Vazire, Naumann, Rentfrow, & Gosling, 2008). Such results suggest that impressions may be formed before any dynamic or expressive cues become available.

The aforementioned Brunswik lens model is one example of a social-cognitive model of person perception that heavily emphasizes the importance of individual nonverbal cues in the process of accurate person perception. And while researchers may often consider cues in isolation, the reality is that we process *patterns* of social behavior and it is these patterns which result in impression formation (Patterson, 1995). Thus, while clearly the discrete signals revealed by the voice, body, or other nonverbal cues can be considered separately, ultimately it is the pattern of these cues that work in conjunction for person perception.

Component II: Qualities of target individuals

Central to nonverbal perception is the expression of nonverbal behavior by a target individual. There are a variety of factors that would affect how, when, and what type of nonverbal behavior is displayed by a target. A target state refers to the target's feelings, emotions, motives, and any situationally specific condition that the target is in, mainly while engaged in a social situation that a perceiver is observing or participating in. A target trait refers to personality characteristics, which are generally more stable across situations than

a target state. Other target qualities include variables such as age, gender, and culture. Such qualities in the target obviously play a role in how that target is perceived. Imagine a female target in a social interaction who is seated and smiling (nonverbal behaviors), attractive (physical appearance), young and Asian (sociocultural attributes), who is relaxed (state) and bright (trait). All of those qualities would interact to potentially affect how that female target is perceived by an interaction partner.

Target states and traits

A target's mood clearly plays a role in the expression of nonverbal behavior. A person who is happy is more likely to smile and walk with a bounce in his/her step; a person who is sad is more likely to move in a slow and sluggish manner. Montepare et al. (1987) found that different emotions were marked with different gait cues: happy gaits tended to be quicker; angry gaits tended to be more heavy-footed; and sad gaits were marked by less arm swinging. Another study showed that sadness was related to slower walking speed and vertical head movements (Michalak, Troje, Fischer, Vollmar, Heidenreich, & Schulte, 2009). Dancers expressing anger displayed strong (in force) and high-speech (in velocity) movements (Sawada, Suda, & Ishii, 2003). Such findings illustrate how a target's mood state would influence the expression of nonverbal behavior.

Another example of a target state that may affect the expression of nonverbal behavior is the target's self-presentation or impression management motives. Impression management theory has demonstrated that individuals can often manipulate their behavior to successfully portray desired impressions (Schlenker, 1980). Research shows the intricate interplay between nonverbal behavior and self-presentation goals where various nonverbal cues may (or may not) be displayed depending on self-presentation motives; in one study, those attempting to appear likeable were less inclined to show negative emotions than those attempting to appear competent (Levine & Feldman, 1997). Similar research showed that individuals attempting to appear likeable tend to nod, smile, and gesture more than individuals without that self-presentation motive (Rosenfeld, 1966). An extensive review of the relationship between self-presentation motives and nonverbal behavior has been published elsewhere (DePaulo, 1992). The review highlighted several reasons why nonverbal behavior is relevant to self-presentation motives; DePaulo emphasized that success at self-presentation depends not only on the actor's ability but also on the perceiver's ability to form impressions from social interactions.

Target traits such as extraversion and dominance are reflected in nonverbal displays. A meta-analysis showed that extraverted people are more emotionally expressive (i.e., expressively animated), whereas neurotic individuals tend to be less emotionally expressive (Riggio & Riggio, 2002). Extraverts also were more likely to display a relaxed stance and less likely to fold their arms, whereas high neuroticism was associated with a tense stance (Naumann et al., 2009). Those with higher intelligence (as measured with IQ scores) tended to use more pauses in their speech (Murphy, 2007). These examples from the literature illustrate how a target's personality would influence nonverbal displays.

Sociocultural attributes

Sociocultural attributes of a target influence nonverbal displays. In terms of nonverbal behavior and age, studies show that older adults tend to use less hand gestures and have more variation in vocal pitch than young adults (Cohen & Borsoi, 1996; Hummert et al., 1999). Gender is another target quality that affects nonverbal displays. The study of gender differences in nonverbal behavior has a long history and is well-documented (e.g., Hall, 1984, 2006; Hall, Carter, & Horgan, 2000). In a meta-analysis, Hall (1978) found that women engage in more expressive movements during a social interaction than men, whereas men display more restless leg and foot movement; men's voices are also louder and lower pitched. Other nonverbal behaviors that show gender differences (with women displaying more than men) include nodding, gazing, forward leaning, and gesturing (Hall, 1984).

Another social factor to consider in nonverbal displays is culture; cultures vary in their nonverbal expressiveness. For example, one study of game-show contestants in the United States and Canada showed that US citizens were more expressive, and US women gestured with their hands more than Canadian women (Waxer, 1985). Other findings show cultural differences in gesturing (e.g., Friesen, Ekman, & Wallbott, 1979), body postures (e.g., Kudoh & Matsumoto, 1985), and emotional expression willingness (Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). It is not necessary to review widespread stereotypes about various ethnic groups to understand that nonverbal cues (including physical appearance) influence how individuals who belong to a specific ethnic group may be (mis)perceived and affected by those stereotypes.

Weisbuch and Ambady (2008) argue that nonverbal behavior is essential to the communication of culture. The authors reason that a large part of cultural norms are expressed and communicated

through social influence and social conformity. From their perspective, much of social influence and conformity is the result of nonverbal gestures and cues (in addition to verbal exchanges of cultural norms and ideals). Social circumstances also teach us cultural display rules, which are rules about how and when to display various nonverbal expressions (Ekman & Friesen, 1969). Studies show that individuals are aware of display rules and these rules vary among ethnicities and cultures (Matsumoto, 1990, 1993). Thus, the culture of a target individual would affect what type of nonverbal cues were displayed. All told, the findings reviewed here demonstrate how target qualities would affect the process of nonverbal perception. Several of the aforesaid models of person perception, including the Brunswik lens model, RAM, and PERSON, highlight the importance of target qualities in nonverbal perception and accurate person perception.

Component III: Perceiver qualities

A third component in our discussion of nonverbal perception involves qualities of the perceiver, including how he/she detects a target's nonverbal behavior, as well as the perceiver's states and traits. Just as qualities about a target may affect the target's nonverbal behavior, qualities of the perceiver affect what impressions are formed. Along these lines, one can imagine how such perceiver qualities could shape the impressions formed of a target. The perception formed by a young, Hispanic, happy, gregarious male perceiver may be very different than the perception formed by an older, Caucasian, anxious female, even if both of those perceivers are judging the same target. Thus, a perceiver's personality traits and emotional states, as well as his/her age, gender, and culture, may affect the process of perceiving nonverbal behavior.

States and traits of the perceiver

There are a variety of states and traits that affect how a perceiver processes nonverbal behavior; much of this research examines how moods and personality traits affect how well (i.e., accurately) perceivers detect the states and traits of targets. Presumably, the perceiver's accuracy in assessing a target hinges on the perception of nonverbal behavior and correct interpretation of that nonverbal behavior. In terms of mood, those in sad moods tend to perform worse on nonverbal decoding tasks than those in neutral or happy moods. For example, those who were experimentally induced into a sad mood were worse at detecting

targets' teaching effectiveness (Ambady & Gray, 2002). Another perceiver state to consider is whether the perceiver is under cognitive load. In one study of cognitive load and nonverbal perception, Patterson and Stockbridge (1998) manipulated the cognitive load of participants who were tested on the Interpersonal Perception Task (IPT), a standard measure of interpersonal sensitivity that involves nonverbal perception (Costanzo & Archer, 1989). The authors hypothesized that increased cognitive load would result in higher interpersonal accuracy scores than participants under lower cognitive load condition. Results showed that participants under cognitive load had significantly higher IPT scores than participants with no load. Because nonverbal decoding is primarily automatic, the high cognitive load presumably limited attentional resources such that participants made automatic accurate judgments. On the other hand, participants in the low load condition were distracted by irrelevant cues, because attentional resources were available, leading to inaccurate perceptions. Essentially, the more automatic the judgment, the better decoding accuracy. The pattern of cognitive load leading to more accurate person judgments has been replicated by others (Ambady & Gray, 2002). Overall, such results illustrate how the state of the perceiver (e.g., being under cognitive load) may affect nonverbal perception.

A host of perceiver traits are associated with the decoding of nonverbal behavior. For example, individuals who are high in the need to belong tended to be better at detecting social cues in others (Pickett, Gardner, & Knowles, 2004). Aube and Whiffen (1996) found that those high in self-criticism were more likely to score lower on the IPT, and another study showed that those higher in shyness performed worse on the IPT (Schroeder, 1995). A meta-analysis showed that individuals high in the trait of dominance are better at decoding nonverbal cues (Hall, Halberstadt, & O'Brien, 1997). In another meta-analysis, which investigated personality characteristics associated with decoding accuracy, including 215 independent studies, numerous traits were associated with better decoding, including empathy, conscientiousness, openness, tolerance, and having a high internal locus of control (Hall, Andrzejewski, & Yopchick, 2009). This is only a brief sampling of perceiver states and traits that may affect nonverbal perception, but the overall conclusion is that a variety of a perceiver's states and traits could affect the process of nonverbal perception.

Sociocultural attributes of the perceiver

As mentioned, a perceiver's age, gender, and culture may all affect the process of perceiving

nonverbal behavior. In terms of perceiver qualities and gender, not only are women expected to be better at nonverbal perception compared with men (Briton & Hall, 1995) but also they are generally superior in decoding nonverbal behaviors compared with men (Hall, 1978, 1984, 2006). Reviews about gender and nonverbal communication provide further explication on gender similarities and differences in nonverbal perception (Eagly, 1987; Hall, 1984, 2006). With regards to culture, cultural display rules affect expectations and interpretations of nonverbal behavior. For example, Japanese participants reported that positive emotions should be displayed less often compared with Canadian participants (Safdar et al., 2009); such expectations undoubtedly affect how nonverbal behavior is perceived in a social interaction. With regard to age, one meta-analysis showed that older adults (mean age > 65) performed significantly worse at recognizing many emotions from bodies or voices compared with younger adults (Ruffman, Henry, Livingstone, & Sullivan, 2008; see also Chapter 20). Thus, just as target qualities affect how nonverbal behavior is expressed, perceiver qualities affect how that nonverbal behavior is perceived. Social-cognitive models of person perception, such as McArthur and Baron's (1983) ecological approach to person perception, accentuate the significance of perceiver qualities in accurate person perception.

Component IV: Interaction qualities

The fourth component to consider in nonverbal perception relates to the qualities of the interaction: i.e., What is the context in which the nonverbal perception is taking place? When a perceiver is forming an impression of a target, the impression may be shaped by the interaction channel: i.e., how the perceiver is receiving the target information and the perceiver's orientation to the social interaction. The perceiver could be taking in information about a target through various channels, such as photographs or videos of a target, or even through audio channels (e.g., audiotaping of a target's voice). Furthermore, the perceiver could be a participant within the social interaction or could merely be an observer of a target engaged in a social interaction. Interaction length and acquaintanceship between the target and perceiver are other factors to consider. Each of these qualities is considered in more detail below.

Perception channel and perceiver orientation

A perceiver's observation of a target's nonverbal behavior could take place through a variety of

channels, such as visual (photographs or video) and/or audio channels, or even interaction through touch. In a study of nonverbal cue channels, judges listened to actors' portrayals of four emotions (happy, sad, anger, and surprise), and judges' accuracy was measured according to how well they decoded the emotions from audiotapes or videos of the actors (Wallbott & Scherer, 1986). Decoding accuracy was significantly higher in the video conditions than in the audio conditions. Perceivers who receive nonverbal cues from visual + auditory stimuli (i.e., video with sound) generally outperform perceivers who receive cues in visual-only conditions (e.g., Most & Aviner, 2009; Murphy et al., 2003). Another quality of the interaction that could affect person perception is the perceiver's orientation (whether the perceiver is directly interacting with a target or is perceiving the target as an observer).¹ Research suggests that when perceivers are engaged within the social interaction, their accuracy in decoding nonverbal cues is lower than when they observe nonverbal cues from outside the interaction (e.g., watching targets interact in a video). For example, perceivers who interacted with targets were worse at judging targets' intelligence levels than perceivers who judged targets' intelligence from outside the interaction, by viewing targets in videotaped social interaction (Murphy, 2007, Study 1). Similar results were found in a round-robin design where strangers were less accurate in judging intelligence of others with whom they engaged in a 10-minute social interaction, as compared to acquaintances' judgments of intelligence (Vazire, 2010).

Interaction length

Regarding the length of an interaction, research shows that short excerpts (no more than 5 minutes) of target behaviors are sufficient to obtain accuracy in the detection of certain behaviors or traits, such as trustworthiness, extraversion, and anxiety (Ambady & Rosenthal, 1992). These short excerpts of target behavior are known as "thin slices." A thin slice is as "a brief excerpt of expressive behavior sampled from the behavioral stream . . . any excerpt with dynamic information less than 5 min long" (Ambady et al., 2000, p. 203). The Ambady and Rosenthal study also showed that longer excerpt lengths (>30 seconds) did not increase accuracy in comparison to shorter excerpts (<30 seconds). Though another study showed that accurate decoding of nonverbal cues was affected by both the slice length and the type of judgment being made; i.e., accuracy rates increased when perceivers' judged characteristics such as neuroticism and openness at longer excerpts (20 seconds to 5 minutes) compared to

judgments made at shorter excerpt lengths (5 seconds) (Carney et al., 2007). However, that same study showed that individuals are better-than-chance at decoding intelligence, extraversion, openness, agreeableness, conscientiousness, and neuroticism, regardless of slice length (5, 20, 45, or 60 seconds, or 5 minutes). In a review of dozens of studies, Hall and colleagues (2008) found that accurate decoding was only very weakly associated with target exposure length, confirming the Ambady and Rosenthal findings.

Acquaintanceship

Another interaction quality to consider is the relationship between the target and the perceiver. Are the interactants strangers, acquaintances, friends, or family members? This relationship is referred to as the acquaintanceship between target and perceiver and much of the research regarding nonverbal perception involves a zero-acquaintanceship paradigm; i.e., the target and the perceiver are strangers (Kenny & West, 2008). Yet, research investigating whether acquaintanceship affects how well a perceiver detects nonverbal cues suggests that, perhaps not surprisingly, acquainted others are better at predicting personality traits than strangers (Colvin & Funder, 1991). In that study, participants were videotaped interacting with a stranger, and videoclips of these interactions were shown to zero-acquaintance judges, who rated the participants on personality dimensions. Furthermore, participants recruited friends (i.e., acquaintances), who also rated the participants on personality traits. Acquaintances were better at predicting personality traits than strangers; presumably, "judgments by acquaintances . . . yield better predictions of targets' personalities [than strangers' judgments] because of the acquaintances' greater number of experiences" with the target (p. 887). Interestingly, however, both strangers and acquaintances had equal predictive validity in predicting the target's behavior in a specific situation. Colvin and Funder suggest that there is a boundary on the acquaintanceship effect such that acquaintances may be better at detecting personality, but both strangers and acquaintances share equal skill in predicting behavior. Other results support the acquaintanceship effect whereby longer interactions with a target led to higher accuracy predictions of personality (Letzring et al., 2006). However, there is research demonstrating that increased acquaintanceship increases accuracy in perceiving "low observability" traits, such as intelligence and neuroticism, perhaps because these traits are less easily observed through nonverbal behavior than more expressive traits such as extraversion (Vazire, 2010).

In sum, the four components of nonverbal perception presented here illustrate how various aspects of the nonverbal behavior itself, the states and traits of targets and perceivers, and qualities of the interaction could all interact to affect the decoding of nonverbal cues. Each of these components is featured heavily in many social-cognitive models of person perception. In the following section, several examples of research regarding the accurate detection of states and traits are presented as illustrations of the role of nonverbal perception in accurate person perception.

EXAMPLES OF ACCURACY IN PERCEIVING STATES AND TRAITS

In the last section of this chapter, some examples of how nonverbal perception relates to the accurate detection of states and traits are presented. Most of the reviewed research below employs the thin-slice paradigm where perceivers are only exposed to target behavior in short intervals (as described below). Furthermore, in these accuracy paradigms, the detection of states and traits occurs between unacquainted strangers. The aim of this section is to highlight how nonverbal perception affects accurate person perception. Only a few content areas are reviewed below but there exists additional research illustrating the accurate detection of various interpersonal variables such as status (Schmid Mast & Hall, 2004), rapport (Grahe & Bernieri, 1999), and masculinity and femininity (Lippa, 1998), among others.

Detection of emotion from the body and voice

A vast literature exist documents the accurate detection of emotions in others, and much of this research involves the accurate detection of emotion from facial expressions (e.g., Carroll & Russell, 1996; Ekman et al., 1987; Elfenbein & Ambady, 2003; Matsomoto, 1992). The literature investigating the accurate detection of emotions from the voice and body also reveals substantial recognition accuracy. What is clear from such research is that nonverbal cues are heavily influential in the detection of emotion in others. In one informative study, Planalp and colleagues (1996) asked college students and working adults to make observations about how close others (usually roommates or significant others) displayed emotions. Participants reported events where others displayed emotion cues, and listed specific cues they used to assess that the other was experiencing

an emotion. Over 95% of respondents reported using more than one cue to detect emotion and respondents reported using an average of 6–7 cues to detect emotion. The most common type of cue was vocal, such as voice pitch, loudness, and rate. Other important cues were facial, indirect verbal (e.g., expletives), and movements or body position. In fact, very few respondents reported using direct verbal cues (e.g., the target explicitly stated the emotion they were feeling). The use of nonverbal cues to decode emotion was probably even greater than what participants reported, given that much of nonverbal perception is automatic and occurred outside the participants' awareness. In general, the study underscored the importance of nonverbal cues in understanding how individuals detect emotions in others.

The literature investigating the accurate detection of emotions from the voice and body reveals substantial recognition accuracy. In one extensive study, Banse and Scherer (1996) audio-recorded actors reading standard sentences with varying emotional intentions. Participants were then asked to listen to the vocal expressions and make judgments as to which emotion was being expressed. Accurate recognition of emotions from the vocal expressions was highest for “hot” anger, boredom, and interest, and lowest accuracy rates were found for shame and disgust. Results suggested that emotions may be recognized from acoustic and vocal qualities and such expressions are marked by distinct acoustic profiles. Emotion recognition from vocal cues is documented in many studies (e.g., Ryan, Murray, & Ruffman, 2010; Scherer, Banse, & Wallbott, 2001; Wickline, Bailey, & Nowicki, 2009).

Other examples of accurate emotion recognition from nonverbal cues outside of facial expressions include accurate emotion recognition from body position, movement, posture, and touch (e.g., Atkinson, Heberlein, & Adolphs, 2007; Montepare, Koff, Zaitchik, & Albert, 1999; Sauter, 2010; Sogon & Masutani, 1989; Wallbott & Scherer, 1986). For instance, there was high agreement and accuracy of perceivers in judging happiness, anger, and sadness from body postures, at rates close to those found with facial stimuli (Coulson, 2004). Perceivers were better than chance at detecting emotions such as happiness and anger from videos of actors instructed to walk in emotional situations (e.g., learning that a roommate ruined a new blouse) (Montepare et al., 1987). One fascinating study of recognizing emotion from touch had participants instructed to touch an unacquainted partner (only on appropriate areas of the body) in any fashion to convey one of eight possible emotions (Hertenstein, Holmes, McCullough, & Keltner, 2009). Participants used various types of touches, including hugs,

pats, taps, and strokes, to communicate various emotions; remarkably, previously unacquainted partners were better-than-chance at detecting emotions such as anger, fear, gratitude, and love. These findings confirmed an earlier, similar study that only allowed participants to touch the arm of their unacquainted partner (Hertenstein, Keltner, App, Bulleit, & Jaskolka, 2006). Again, such research accentuates the power of nonverbal cues in the detection and recognition of emotion.

Detection of sexual orientation

Thin-slice research shows that sexual orientation can be detected from nonverbal cues. Ambady, Hallahan, and Conner (1999) investigated whether perceivers could detect sexual orientation from thin slices. Graduate students, who served as targets, were videotaped discussing the balance between extracurricular activities and school work. Perceivers (undergraduate students) were shown silent 10-second clips (extracted from the 25th–35th-second interval in the longer videotaped discussion), a silent 1-second clip (extracted from the 4th–6th-second interval), or eight still photographs of the targets. Perceivers were better-than-chance at detecting sexual orientation and were significantly better at judging sexual orientation from the dynamic, thin-slice conditions (1-second and 10-second silent videos) than the still photos. In a second study, the importance of body movement, posture, and gestures was illustrated when target faces were blocked out and animated figural displays were presented to participants; again, participants were better-than-chance at detecting sexual orientation. Additional studies have confirmed these original findings; perceivers can accurately detect sexual orientation from thin slices of behavior (Johnson, Gill, Reichman, & Tassinari, 2007; Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010). Clearly, this detection relies on the perception and recognition of nonverbal cues.

Detection and display of prejudice

Research demonstrates that nonverbal cues may subtly reveal prejudicial attitudes and racial biases. One study investigated whether participants could detect prejudicial attitudes from viewing thin slices of targets' social interactions (Richeson & Shelton, 2005). Black and White targets were video recorded in either same-race or interracial dyadic interactions. The targets also completed measures of racial bias. Twenty-second slices of these interactions were then shown to Black and

White participant judges, who were asked to rate the positive affect and appearance of prejudice in the targets. Results showed that Black judges' ratings of targets' positive affect were significantly correlated with White targets' implicit bias scores, but only for the White targets in interracial interactions. Notably, judges only viewed thin slices of single targets; they did not know the race of targets' interaction partners. Thus, Black judges detected racial biases from White targets, but those racial biases are only apparent in interracial interactions (as opposed to same-race interactions). Such results suggest that implicit racial biases can be perceived in context-relevant situations via nonverbal cues.

Other research has found similar results indicating that racial bias is revealed during social interactions via nonverbal behavior. For example, participants with higher measured implicit racial bias engaged in more positive interaction behaviors (assessed with ratings of friendliness, comfort level, and abruptness) during interactions with a White experimenter than a Black experimenter (McConnell & Leibold, 2001). In the same study, higher racial bias scores were correlated with more smiling, greater speaking time, and fewer speech errors and hesitations in interactions with a White experimenter compared to interactions with a Black experimenter. High-prejudiced participants showed more behavioral inhibition (less body and hand movements) during discussions about fraternities on college campuses with a Black experimenter than with a White experimenter, suggesting that high-prejudiced participants inhibited their nonverbal behavior as not to risk appearing prejudiced (Richeson & Shelton, 2003). Once again, such findings illustrate the importance of nonverbal perception in the process of person perception.

CONCLUSION

Nonverbal perception involves the recognition and interpretation of nonverbal cues. The influence of nonverbal cues such as vocal qualities and body movement on the impressions we form of others cannot be understated. As the research reviewed in this chapter illustrates, the processes involved in nonverbal perception consist of four basic components: (1) nonverbal cue qualities; (2) target qualities; (3) perceiver qualities; and (4) the social context, namely interaction qualities. Accurate person perception is a complex process intertwined with the perception of nonverbal cues, and these interpersonal judgments represent a true social-cognitive mechanism. And while we may

never achieve a dictionary-style manual that defines which nonverbal signal corresponds to which interpersonal state or trait, nonverbal perception research establishes that nonverbal cues are influential and essential in our everyday interactions with others.

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NOTE

1 While perceiver orientation could be considered a perceiver quality, I have categorized it under interaction qualities because perceiver orientation refers to the perceiver's position within the interaction.

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