CHAPTER

14 Initial Impressions of Others

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Abstract

"Initial impressions" bring together personality and social psychology like no other field of study—"personality" because (1) impressions are about personalities, and (2) perceivers' personalities affect these impressions; and "social" because (3) social cognitive processes of impression formation, and (4) sociocultural contexts have major effects on impressions. To make these points, we first review how people explicitly describe others: the terms we use, how these descriptions reveal our theories about others, the important roles of traits and types (including stereotypes) in these descriptions, and other prominent frameworks (e.g., narratives and social roles). Then we highlight recent research on the social cognitive processes underlying these descriptions: automatic and controlled attention, the many effects of primes (semantic and affective) and their dependence on contexts, the acquisition of valence, spontaneous inferences about others, and the interplay of automatic and control processes. Third, we examine how accurate initial impressions are, and what accuracy means, as well as deception and motivated biases and distortions. Fourth we review recent research on effects of target features, perceiver features, and relations between targets and perceivers. Finally we look at frameworks for understanding explanations, as distinct from descriptions: attribution theory, theory of mind, and simulation theory.

Keywords: traits, stereotypes, social cognition, attention, priming, spontaneous inferences, automaticity, accuracy, deception, attribution, theory of mind, simulation

Who are you? How should we describe you? A colleague once asked me (JSU) if I knew what it was like to be a bat, referring to Nagel's (1974) famous essay on consciousness and the mind-body problem. I said that I didn't even know what it was like to be me. Where should I begin? What should I leave out, so the account takes less than a lifetime, and is responsive to his question? What about the influences and processes I'm oblivious to or have forgotten? How accurate are my impressions, and against what standards of accuracy? Is there one truth or many? These are the kinds of questions this chapter addresses (but does not answer), by noting how social and personality psychologists approach them, in theory and in research. We hope to give you an overview of the terrain in this area.

In some ways, the impressions studied by social and by personality psychologists could not be more different. The initial impressions studied by social psychologists are fleeting and dissipate in the face of extended interactions; exist only in the minds of perceivers; can be manipulated or managed; and are presumed to be flawed guides to future behavior. The initial impressions studied by personality psychologists are stable and coherent over time and place; exist apart from particular perceivers; and should provide true guides to future acts.

However, our view is that they are inseparable, two sides of the same coin. Both are social constructions (like the economy or the legal system). Both concern the nature of persons: what their characteristics are; what causes them to behave in particular

ways in specific situations, as well as more generally; what they think and feel; and so on. And both arise from the same initial evidence: other people's behaviors in particular situations. Social psychologists focus on perceivers and what they make of this evidence; personality psychologists focus on targets and what produces this evidence. But perceivers have personalities too; and targets act in the actual or imagined presence of perceivers. Individual differences are part of the picture throughout. So these two emphases are not only two sides of the same coin, they are two intertwined aspects of a conceptual Gordian knot. Cutting through this knot to divide it into social and personality halves does violence to all these interrelations. So this apparent division is largely a matter of (real) professional territoriality, that is, different scientific traditions and academic audiences. Because this chapter focuses on *initial* impressions, we draw more heavily from social psychologists' work. But the complementary concerns of personality psychologists, with their long-term perspectives, make important contributions too.

How we form impressions of others has long been a fundamental question in both social and personality psychology, because our interactions depend in fundamental ways on our impressions of others. (Of course we might start with questions about impressions of social situations or relationships. But Western, and especially U.S. psychology has been individualistic for a long time, for cultural (Lehman, Chiu, & Schaller, 2004) and ideological (Ichheiser, 1949) reasons. We begin with *the terms we explicitly use to describe* other people. What are these terms, and when do we use them? How are they related to each other, and what do their relations reveal about our theories about other people?

We also form *implicit (unspoken and unconscious) impressions*, and our explicit descriptions are based on processes of which we are largely unaware. What are some of these processes? What captures our attention, unbidden? What produces positive or negative evaluations? How do we unconsciously infer inner qualities (e.g., traits) from outer observables (e.g., behaviors)? The second section of this chapter reviews some of these processes. Distinctions between explicit and implicit impressions, and automatic and controlled processes are central.

Research on *accuracy* has been oddly independent of research on processes, in part because Cronbach's (1955) devastating critique of accuracy research intimidated other researchers for decades, and Mischel's (1968) critique of personality research raised questions about whether there is anything to be accurate about. But now there are more sophisticated approaches to these questions, and this is a lively area of research. We review conceptions of accuracy in trait judgments and sample current results. We also describe recent research on deception (lying), and some motivated biases and distortions in forming initial impressions.

The fourth section surveys some of the *features of targets, of perceivers, and of their relations with each other* that affect initial impressions. Faces and other visual information form most of the work on targets. We also note recent work on impressions in cyberspace, and reputation. Relations include power and psychological distance.

Finally we note recent work on *explanations of others' behaviors*, focusing on three frameworks: (1) attribution theory, (2) theory of mind, and (3) simulation theory and self-reference. Explanations are more than descriptions. They are more motivated and judgmental, and carry clearer implications for responsibility, credit, and blame. They depend on large and often implicit theories, such as Tetlock's (2002) politician, theologian, and prosecutor frameworks.

Lay Descriptions of Others

How do people describe one another? Park (1986) had members of her seminar at Northwestern University describe each other every week for 7 weeks. She content-analyzed the results into five categories: traits and habits; behaviors; attitudes, feelings, and beliefs; demographics; and physical and biological characteristics. Traits dominated the descriptions (65%), followed by behaviors (23%). Traits were used more and behaviors were used less as targets became better known. So traits are central in describing others.

People differ in how they describe others, even at "zero acquaintance" (Kenny & West, 2008). In their classic demonstration, Dornbush, Hastorf, Richardson, Muzzy, and Vreeland (1965) asked summer campers to describe their tent mates. On average, when one perceiver described two different targets, the categories overlapped 57%, but when two perceivers described the same target, categories overlapped only 45%. Perceivers affected category choice more than targets did. People differ in which categories are chronically accessible (come easily to mind; Higgins, 1996), and this produces different descriptions, and memories. Thus an important determinant of individual (i.e., personality) differences in describing and remembering targets is differences in the chronic accessibility of perceivers' concepts.

Looking beyond initial impressions (as we occasionally do), familiarity with the target affects category use. Idson and Mischel (2001) found that traits usually outnumbered mental states. But relatively fewer traits were used the longer perceivers had liked (but not disliked) targets, and the more situations they had seen them in. Fewer traits were used for important (vs. unimportant) targets. Familiarity also affects how targets are categorized automatically. Unfamiliar faces get categorized by salient stereotyped categories, whereas familiar faces do not (Quinn, Mason, & Macrae, 2009.) Thus descriptions of unfamiliar targets contain more traits, fewer mental states, and are less conditional on situations than familiar others.

Communicating descriptions to an audience changes the descriptions. Zajonc's (1960) classic study showed that descriptions are more "differentiated, complex, unified, and organized" (p. 166) when perceivers expect to communicate. Lassiter, Geers, and Apple (2002) found that this organization produced fewer units of behavior, fewer remembered behaviors, and less positive affect. When people know something about their audience, communications are "tuned" to the audience. Todorov (2002) showed not only that these tuned descriptions affect memory for and attitudes toward targets, but also these descriptions mediate tuning's effects. Wyer and Gruenfeld (1995) provided a thoughtful review of related literature.

Perceivers' cultures also affect descriptions. Westerners use more trait terms and fewer relational and contextually qualified terms than Asians. For example, Shweder and Bourne (1984) asked residents of Chicago and Orissa, India, to describe close acquaintances. Americans use more context-free descriptions (71.7%), including unqualified traits, than did Oriyas (50.4%), and more abstractions than Oriyas (74.6% vs. 35.2%). Self-descriptions show similar cultural differences (Rhee, Uleman, Lee, & Roman, 1995). Although this difference is often explained by individualist versus collectivist conceptions of individuals, Kashima, Kashima, Kim, and Gelfand (2006) suggest that it reflects cultural differences in linguistic practices. Westerners, more than Asians, objectify and decontextualize descriptions not only of individuals, but also of relationships and even groups (also see Adams, chapter 8, this volume).

Traits' Relations to Each Other

Implicit theories of traits' relations to each other, that is, implicit personality theories (IPT), have been studied primarily through factor analyses of trait ratings (Schneider, 1973). The same Big Five factors of personality—openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism—emerge from ratings of traits' semantic similarity, co-occurrence likelihoods, and the prototypicality of acts, as well as from ratings of complete strangers, well-known others, and the self (John, 1990). A long-standing controversy concerns whether IPT reflects actual relations among traits or merely semantic relations, which distort judgments of actual relations. Borkenau (1992) found that distortion happens occasionally, but cannot fully account for IPT.

Poon and Koehler (2008) looked for individual differences in inferring traits and behaviors from other traits and behaviors, with particular attention to Dweck's (Dweck, Chiu, & Hong, 1995) entity theorists (who believe traits are fixed) and incremental theorists (who believe traits are malleable). For semantically similar (vs. unrelated) traits and behaviors, inferences were more extreme for entity than incremental theorists. Thus, moderately reliable theories (0.57 over 8 weeks) about the reliability of trait and behavioral information affect inferences among them. Poon and Koehler (2006) found that priming entity knowledge made participants more confident about trait inferences.

How universal is this Big Five structure? With some important caveats, Heine and Buchtel (2009) concluded that "there is good evidence that the Big Five reflect the universal structure of personality" (p. 378), when scales are based on translated English rating scales. But studies based on indigenous Chinese, Filipino, Spanish, or Greek traits uncovered six or seven factors, only some of which correspond to the Big Five. Saucier (2003a) reports evidence that the seven factors from studies of Filipino and Hebrew traits may be more universal than the Big Five. Heine and Buchtel (2009) describe some interesting functional evolutionary ideas about possible origins of the Big Five factor structure. (See also Fleeson, chapter 3, this volume.)

Rosenberg, Nelson, and Vivekananthan (1968) suggested that most IPTs are dominated by two correlated but distinct evaluative dimensions: social warmth and competence. Recently Judd, James-Hawkins, Yzerbyt, and Kashima (2005) have termed these "the fundamental dimensions of social judgment," and examined their relations in judging groups. Although usually related positively in judging individuals, they are negatively related in judging groups. They are sometimes called the "Big Two" dimensions, in homage to the Big Five.

How well do the Big Five describe individual targets? All the analyses above are based on data aggregated over many targets, but individual targets show idiosyncratic trait structures, and individual perceivers organize traits in idiosyncratic ways. Exploratory factor analyses of ratings of single targets, rated repeatedly over many days, do not yield the familiar Big Five for most targets. Nesselroade and Molenaar (1999) report that fewer than a third of their targets showed the Big Five pattern, and Borkenau and Ostendorf (1998) put this figure at 10%. Thus multiple ratings of single individuals over time rarely yield the Big Five.

Finally, most traits are hierarchically organized, for example, being charitable is a way of being generous, which is a way of being kind, which is a way of being good. Targets' familiarity and likability affect the preferred level of description, and there is a basic (default) level for most hierarchies (John, Hampson, & Goldberg, 1991). Each factor has several hierarchical subcomponents; for example, extraversion includes sociability, lack of restraint, assertiveness, and adventurousness.

Conceptions of Traits

Traits terms are used in many ways (Uleman, 2005). Most personality researchers (e.g., McCrae & Costa, 2003) think of traits as relatively stable internal causes of behavior, with predictive utility across many situations. On the other hand, Wright and Mischel (1987) showed that traits' meanings are implicitly (and sometimes explicitly; Wright & Mischel, 1988) conditional on the situation in which they are used. Thus two youthful targets may be described as *aggressive* even though one aggresses only toward peers and the other only toward adult authorities. More generally, most of us seem to have theories about the kinds of personality differences that are revealed in different situations. Higgins and Scholer (2008) note that behaviors in "high-demand [stressful] situations" best reveal coping abilities, whereas behaviors in "low-demand situations" best reveal preferences, values, and tastes. All these approaches treat traits as causal rather than merely descriptive (of people and/or behaviors). Kressel and Uleman (2010) showed that isolated trait terms have the properties of causes (of behavior), even when lacking explanatory and descriptive functions. This suggests that traits are theory-based concepts (Murphy & Medin, 1985) with inherently causal meanings, even though they are also the most abstract level at which behaviors are described (Semin & Fiedler, 1991). They can both describe and explain behavior.

Traits are part of the "(folk) theory of mind" (section "Explanations," below), a set of concepts that people use to understand others (and themselves). Malle (2004) presents the most articulated version available for American adults, developed to account for their explanations of behaviors. Malle's fundamental distinction is between *intentional* behaviors (i.e., *actions*, which have *reasons*) and *unintentional* behaviors (which have *causes*). Causes of unintended behaviors ("She failed organic chemistry.") can be in the situation or the person, and include traits (e.g., *stupid*). Actions have three kinds of explanations: (1) *enabling factors*, which include traits such as abilities; (2) *reasons*, based on targets' *values*, *beliefs*, and *desires*; and (3) *causal histories of reasons*, that is, the background or origin of the targets' reasons (including traits, e.g., *ambitious*) without the reasons themselves. Thus traits play several different roles and have different meanings in folk theories of mind.

Understanding others also involves narratives (e.g., Schank & Abelson, 1995). Read (1987) argued that explaining an extended sequence of behavior—and (we would add) even describing it—requires a scenario, including targets' plans and goals. He conceives of most traits as goal-based categories. Read, Jones, and Miller (1990) showed that ratings of how effective behaviors are at attaining trait-related goals predicts ratings of behaviors' typicality (in the graded structure of trait categories) as well as confidence in making trait inferences from behaviors. (See also Read & Miller, 2005.)

Working with a prototype conception of personality trait and state categories, Chaplin, John, and Goldberg (1988) found that trait and state category "prototypes are not defined by averages . . . but by ideal (or extreme) attribute values. Like other ideal-based categories, traits and states serve particular goals. Trait concepts permit people to predict the present from the past; state concepts identify those behaviors that can be controlled by manipulating the situation" (p. 541).

Dweck and her colleagues have produced the most extensive research on individual differences in person concepts, with their entity and incremental theorists (e.g., Levy, Plaks, & Dweck, 1999). Different judgments and explanations of individual, as well as group characteristics (Levy, Plaks, Hong, Chiu, & Dweck, 2001), follow from these two orientations. Entity theorists emphasize traits, trait-consistent information, and evaluations in their descriptions. Hong, Chiu, Dweck, and Sacks (1997) found that entity theorists make more implicit

evaluative inferences (assessed via evaluative priming). McConnell (2001) showed that incremental theorists make memory-based judgments and entity theorists make on-line judgments. Plaks, Stroessner, Dweck, and Sherman (2001) showed that entity theorists attended more to stereotype-consistent information, whereas incremental theorists attended more to stereotype-inconsistent information. Plaks, Grant, and Dweck (2005) showed that attention is also differentially affected by how consistent new information is with perceivers' theories of change.

Church et al. (2003) examined lay theories of behavior in two cultures, with their questionnaire about beliefs about traits and situations. The five trait beliefs concern traits' stability, cross-situational consistency, predictive validity, ease of inference from a few behaviors, and accuracy for describing and understanding others. The five situational beliefs are roughly parallel. These two belief sets formed two factors that are essentially orthogonal. Dweck's measures are only moderately related to them. Thus, beliefs about the trait- and context-driven nature of human behavior (Church et al. 2003), as well as dispositionist, situationist, and interactionist thinking (Baumann & Skitka 2006; Norenzayan, Choi, & Nisbett, 2002) are not mutually exclusive, and vary by individual as well as culture.

Types

Traits are not the only terms we use to describe others. One of the most important alternatives is types, including stereotypes. Andersen and Klatzky (1987) showed that social types (e.g., *clown, bully*) are more distinctive, and visually and associatively richer than related traits. People can also answer behavioral questions about others more quickly when they are described in terms of types rather than traits, suggesting more efficient information processing (Andersen, Klatzky, & John, 1990). Saucier (2003b) reported 2- and 8-factor structures of 372 common English types. The two factors were contemptibleness (including *moron*, *rat*, *monster*), implying social rejection and derogation; and admirableness (*hero*, *star*). The 8-factor solution included some factors that resemble the Big Five, but more that suggest types have unique functions and are often highly evaluative. Ethnophaulisms (racial and ethnic slurs) constitute one class of evaluative types that has received particular attention from Mullen (e.g., Leader, Mullen, & Rice, 2009).

As some ethnophaulisms suggest, we may see others as not fully human. Haslam and colleagues distinguish uniquely human attributes from human nature. The former "implicate culture, social learning, and higher cognition, whereas human nature implicates what is natural, innate, and affective" (Haslam, Loughnan, Kashima, & Bain, 2008, p. 58). Human nature is universal, essential, and the concept emerges early in individual development, whereas uniquely human qualities are infrequent and emerge in maturity (e.g., Haslam, Bain, Douge, Lee, & Bastian, 2005). The denial of uniquely human qualities is the basis for *animalistic dehumanization*, wherein people (especially outgroups) are likened to animals. The denial of human nature is the basis for *mechanistic dehumanization*, wherein people are likened to machines (Haslam et al., 2008). These are empirically distinct across a number of cultures (e.g., Australia, China, and Italy; Haslam, Kashima, Loughnan, Shi, & Suitner, 2008).

Leyens and colleagues (Leyens et al., 2000) studied variations in descriptions of the emotions of essentialized social group members. They differentiate primary emotions (simpler, physiological, externally caused) from secondary emotions or *sentiments* (*French*; complex, cognitively oriented, and internally caused). The latter are more "uniquely human" versus animal (Demoulin et al., 2004). Ingroups are accorded more *sentiments* than are outgroups; and there is a reluctance to attribute *sentiments* to outgroups (Cortes, Demoulin, Rodriguez-Torres, Rodriguez-Perez, & Leyens, 2005).

Essentialism—the belief that types are based on intrinsic, inherited qualities—plays an important role in stereotyping others, especially when the stereotypes have a plausible biological basis such as with gender, race, and sexual orientation (see Yzerbyt, Judd, & Corneille, 2004). Carnaghi et al. (2008) found that the use of nouns rather than adjectives to describe others is associated with more essentialistic beliefs about them. Gelman (2003) argued that preschoolers naturally employ essentialistic concepts in developing their folk psychologies.

Stereotypes

Stereotyping is a huge topic, so we touch on only a few highlights. Schneider notes that at a minimum, "stereotypes are qualities perceived to be associated with particular groups or categories of people" (2004, p. 24). Some but not all theorists hold that stereotypes are also negative, inaccurate, and/or consensual. In practice, the categories most often studied as "stereotypes" have been those most socially, politically, and legally fraught, for example,

race, ethnicity, gender, and age. *Prejudice* is the affective or attitudinal/evaluative component of stereotypes, and *discrimination* is the behavioral consequence. So all the theoretical and empirical complexities associated with attitudes and their relations to behavior apply to prejudice, including the distinction between implicit and explicit processes and measures. In addition, much of the research on social identity, self-categorization, and intergroup perceptions involves stereotypes.

Notwithstanding race, gender, and so forth, many social features can be used to categorize others. Weeks and Vincent (2007) showed that people spontaneously use religion, even when another salient category (race) is available. Lieberman, Oum, and Kurzban (2008) showed that kinship is as important a category as sex or age. Kinzler, Shutts, DeJesus, and Spelke (2009) showed that when 5-year-old children were asked to "choose friends" from among novel others, who did or did not share their own language or race, same-language trumped same-race. Paladino and Castelli (2008) showed that simply categorizing others as ingroup versus outgroup members (based on ethnicity, nationality, age, political views, or even a minimal group paradigm) has immediate motoric approach-avoidance consequences. The last three papers present evolutionary arguments.

The stereotype content model (SCM; Fiske, Cuddy, Glick, & Xu, 2002), and its successor, the BIAS map (Behaviors from Intergroup Affect and Stereotypes; Cuddy, Fiske, & Glick, 2007), describe relations among social structure, stereotype contents, and the emotions and behaviors associated with them. Perceptions of group members vary along two dimensions: competence (confident, independent, competitive, intelligent), which is predicted by their social status; and warmth (tolerant, warm, good-natured, sincere), predicted by their low social competitiveness with perceivers. In the resulting two-dimensional space, groups with negative stereotypes (low competence and low warmth, e.g., the poor, and homeless) cluster together, and are opposite groups with positive stereotypes (high competence and high warmth, e.g., professionals, ingroup members). The model naturally accommodates ambivalent stereotypes: low competence and high warmth (e.g., the elderly), and high competence but low warmth (e.g., the wealthy). Each quadrant or cluster elicits characteristic emotions: contempt and resentment (low-low), pride and admiration (high-high), pity and sympathy (low-high), and envy and jealousy (high-low) respectively.

The BIAS map includes behaviors by distinguishing active from passive, and harm from facilitation. Active facilitation includes helping, and active harm includes attacking. Passive facilitation ("acting with") includes associating with or using, and passive harm ("acting without") includes excluding. Using a combination of surveys and experiments, Cuddy et al. (2007) showed that the effects of stereotypes on behaviors are mediated by particular emotions. Furthermore, a meta-analysis by Talaska, Fiske, and Chaiken (2008) showed that emotional reactions to social groups predict discriminatory behavior twice as well as stereotypes do.

This framework has generated two other interesting findings. First, when perceivers think about their emotional responses to groups, those in the low competence, low warmth (contempt) quadrant do not activate brain regions that are typically activated by observing people (the medial prefrontal cortex). This suggests perceivers dehumanize such group members (Harris & Fiske, 2006). However, when perceivers have a more individuating goal (judging targets' food preferences), this effect disappears (Harris & Fiske, 2007).

Second, these two dimensions of warmth and competence (the Big Two) have a compensatory relationship in comparative judgments of groups. Yzerbyt, Provost, and Corneille (2005) found that when a group was higher on one dimension, it was seen as lower on the other. Kervyn, Yzerbyt, Judd, and Nunes (2009) showed how this compensatory relationship plays out through confirmatory biases in impression formation. They define the compensation effect as "the tendency to differentiate two social targets in a comparative context on the two fundamental dimensions by contrasting them in a compensatory direction" (p. 829). This compensatory relationship is unique to these two dimensions, and contrary to the well-known halo effect (Yzerbyt, Kervyn, & Judd, 2008).

Given that many stereotypes are ambivalent, why do evaluations of stereotyped group members seem so univalent? Quinn, Hugenberg, and Bodenhausen (2004) showed that, consistent with research on retrieval-induced forgetting, cued-recall rehearsal of some targets' traits (e.g., Susan—independent) inhibits free recall of nonrehearsed traits (e.g., liberal, opinionated), regardless of their valence. However, activating an applicable stereotype (e.g., feminist) changes this effect, facilitating free recall of nonrehearsed traits that are evaluatively consistent with rehearsed traits, and inhibiting recall of evaluatively inconsistent traits. This effect may

underlie "the momentary experience of evaluative consistency in person perception" (p. 519). Gawronski, Peters, Brochu, and Strack (2008) presented a general theory and supportive evidence on how and when cognitive consistency operates to reconcile conflicting evaluations and beliefs in prejudiced behavior.

People belong to many social groups. For example, Weeks and Lupfer (2004) found that "lower-class Black targets were primarily categorized by race, whereas middle-class Black targets were primarily categorized by social class," spontaneously (p. 972). Multiple categories facilitate subtyping, in which targets who disconfirm a stereotype are put into a subcategory that preserves the stereotype itself, or subgrouping, in which stereotypes are differentiated (Richards & Hewstone, 2001). More generally, goals and situational factors can determine which categories or subcategories are activated, often automatically (e.g., Gilbert & Hixon, 1991). Crisp and Hewstone (2007) reviewed research on multiple social categorization, and its implications for reducing and preserving stereotyping.

Finally, important individual differences in stereotyping and prejudice are tapped by both explicit and implicit prejudice measures; see the section on unconscious processes, below. Sibley and Duckitt (2008) performed a meta-analysis of 71 studies looking at relations between the Big Five, prejudice, right wing authoritarianism (RWA), and social dominance orientation (SDO). SDO and RWA mediated most effects, consistent with "a dual-process motivational model of ideology and prejudice" (p. 248).

Other Frameworks for Describing Others

People are often described through stories or narratives. Being complex, such impressions almost always combine descriptions, judgments, and explanations. Narratives can arise to simply convey information, to form impressions (Wyer, Adaval, & Colcombe, 2002), or to judge guilt (e.g., Pennington & Hastie, 1992).

Park has long contended (1986) that people form complex multidimensional *person models* of others, organized around central concepts and used to generate attributions, explanations, and predictions through simulation. In a methodological tour de force, Park, DeKay, and Kraus (1994) presented participants with brief self-descriptions of how several targets behaved in five different settings: work, home, social, chore, and leisure (Study 1). Kenny's (1994) social relations model (which decomposes ratings into components due to targets, to perceivers or judges, and to their statistical interaction) showed that perceivers organized the behavioral information with some consistency across situations, producing a large target effect. A large judge x target effect showed that different perceivers (judges) developed different person models, even though all perceivers had the same information. Perceivers also wrote brief descriptions of the targets, and there seemed to be only a few different central concepts for each target, based more on how behaviors were combined (i.e., the person models) than on how each behavior was interpreted.

In Study 2, participants read the five self-descriptive statements for each of four targets from Study 1, and then wrote free descriptions and five descriptive traits for each. Then they rated each target on many traits, completed a recognition memory test for the original statements, and chose which of three possible person models (adapted from Study 1) best captured their impressions. Even though participants all read the same descriptions, they developed different models (as seen in their free descriptions and model choices), and these predicted differences in trait ratings and recognition memory, including false recognition of conceptually related foils. There was no relation between model choices and perceivers' self-descriptions. The authors suggest that person models are spontaneously constructed during impression formation, and are flexible combinations of traits, narratives, and other elements organized around central concepts. Many of these effects were replicated and extended by Mohr and Kenny (2006), who also saw them as explaining the robust finding that there is typically low consensus among perceivers of the same targets.

A completely different approach can be found in Carlston's (1994) associated systems theory. It describes relations among four systems: sensory (esp. visual appearance), verbal (esp. traits), affective (esp. responses to others), and action (esp. behavioral responses). While the theory has not received extensive testing (cf. Claypool & Carlston, 2002), it organizes several literatures and underscores the complexity of our representations of others.

Finally, social roles describe others, including role stereotypes. Social roles are also common in self-descriptions. For example, Rhee et al. (1995) coded self-descriptions from 353 American and Korean college students, using "probably the most elaborate and sophisticated coding scheme to date" (Kashima et al., 2006, p. 390). Traits were the most common description (30%), but 22% were social

identities. Most of these were social roles. Social roles can be classified into ascribed versus attained, voluntary versus involuntary, and hierarchical categories. Such distinctions play little part in impression formation research, even though many languages (e.g., Japanese) make elaborate role distinctions in forms of address. Rather, research often treats roles as situational or contextual explanations for behavior, contrasting them with dispositional explanations, perhaps because Westerners think of people as "occupying" or "playing" roles, whereas they "have" dispositions.

One exception to the neglect of roles is Alan Fiske's (1992) proposal that there are four basic types of social relationships: (1) communal sharing, as among close kin; (2) authority ranking, among superiors and subordinates; (3) equality matching, or egalitarian relationships; and (4) market pricing, based on equitable exchanges. Fiske, Haslam, and Fiske (1991) predicted that when one makes errors that substitute one person for another—by misnaming them, misremembering who did what to whom, or acting toward one person as though they were another—these confusions are more likely between others with whom one has the same kind of basic relationship. Across seven studies, they found that these relationship types "and gender predict the pattern of errors as well as or better than the age or race of the people confused" (p. 673). This suggests that people implicitly categorize others in terms of these four types of relationships, and that even when these types do not appear in descriptions, they affect memories of and actions toward others.

Processes of Impression Formation

Where do our descriptions of others come from? As noted above, they are shaped and constrained by our concepts, theories, and culture. And as elaborated below ("Features of Targets, Perceivers, and Relations"), they depend on the stimuli that others emit: appearance, behavior, and so forth. But how can we understand the pathways from receiving stimuli to producing descriptions or explanations of others? This is the purview of "social cognition," which investigates the cognitive and motivational processes that construct our phenomenological social world. Our treatment here must be brief, but see Carlston (forthcoming) and Uleman, Saribay, and Gonzalez (2008) for more detail.

Dual-process theories dominate this area, and many dichotomies feature the distinction between *automatic* and *controlled* cognitive processes. Thoroughly automatic processes take place outside of awareness, without intentions, without conscious control, and quickly and efficiently (free from interference by concurrent cognitive operations). Controlled processes have the opposite features (Bargh, 1994). But these features do not always co-occur, so it is important to specify how a process is or is not automatic (Moors & De Houwer, 2007).

Closely related to this (oversimplified) dichotomy is the one between implicit and explicit measures. In promoting this distinction, Greenwald and Banaji (1995, p. 4) focused on awareness. "The signature of implicit cognition is that traces of past experience affect some performance [e.g., a measure], even though the influential earlier experience is not remembered in the usual sense—that is, it is unavailable to self-report or introspection." But implicit measures are often treated as though they are thoroughly automatic. So De Houwer, Teige-Mocigemba, Spruyt, and Moors (2009) redefined implicit measures as "outcomes of measurement procedures that are caused in an automatic manner" (p. 347), even though Nosek and Greenwald (2009) demur. De Houwer et al. (2009) provide a useful conceptual analysis of how automaticity's features apply to two prominent implicit measures (the Implicit Association Test, or IAT, and affective priming).

A study that illustrates many of these concepts (Rydell, McConnell, Mackie, & Strain, 2006) independently manipulated and measured explicit and implicit attitudes toward a target person, Bob. In the first block of 100 trials, participants formed an impression by reading brief descriptions of positive behaviors performed by Bob. Each behavior was preceded by a subliminal negative word. Participants' explicit evaluations of Bob at the end of this series were positive, but an IAT showed negative implicit associations with him. Then they read 100 additional behavioral descriptions of Bob, which were now negative, each preceded by a subliminal positive word. After this second block of trials, explicit attitudes had become negative but implicit associations with Bob were positive. Participants were not aware of the subliminal stimuli, their implicit attitudes, or the connection between the two. Implicit attitudes were thus formed without intentions, and were completely at odds with explicit attitudes. (This study did not examine efficiency or controllability.)

Automatic processes are important in many ways including directing attention, activating concepts (including traits and stereotypes), in evaluative

conditioning and priming, in forming inferences, and in interactions with controlled processes.

Attention

Several theories, including evolution, suggest that some stimuli should automatically capture our attention. Subliminally presented threatening faces attract more attention than neutral faces, but only when presented in the left visual field (Mogg & Bradley, 1999). Concurrent tasks that reduce working memory can eliminate the ability of angry faces to capture attention (Van Dillen & Koole, 2009). In deliberate searches of multiface arrays, there is conflicting evidence for an "angry face" effect. Juth, Lundqvist, Karlsson, and Öhman (2005) found that happy (vs. angry or fearful) faces were detected faster and more accurately among neutral distracters, but socially anxious participants showed the angry face effect, suggesting important personality differences. Implicating more functional and motivational moderators, Öhman and Juth (2010, p. 59) report that the angry face effect is restricted to "male targets in the context of familiar [vs. novel] faces—a common situation for interpersonal violence." Thus these automatic effects are not invariant, and are moderated by several variables.

Goals are among the most important moderators. For example, participants with experimentally created egalitarian goals are less successful at ignoring words related to egalitarianism (Moskowitz, 2002). Maner, Gailliot, and Miller (2009) found that participants exposed to mating primes and not in a committed relationship showed automatic attention to physically attractive opposite-sex others. Maner, Gailliot, Rouby, and Miller (2007) showed automatic "attentional adhesion" to potential rivals by participants primed with mate-guarding, but only if they were insecure in their own relationships.

Attention operates at several levels, from automatic attention capture to deliberate information search. At the automatic level, negative information is more likely to capture attention (Pratto & John, 1991), although this can be moderated by affective context (Smith et al., 2006). The encoding flexibility model (Sherman, Lee, Bessenoff, & Frost, 1998) describes how attention is flexibly deployed between consistent and inconsistent information about a stereotyped target; when cognitive resources are scarce, inconsistent information attracts more attention. Unprejudiced perceivers seek stereotype-inconsistent information (Wyer, 2005). De Bruin and Van Lange (2000) found that people search first for, and are more influenced by information relevant to morality than competence. And differentially attending to those we like, including ingroup members, unintentionally biases stimulus sampling in the social environment, with interesting consequences for impression formation (Denrell, 2005).

Other people's attention is often signaled by their gaze direction, and this in turn captures perceivers' attention, often without awareness. Indeed, gaze following is one of the foundations of competent social interaction from infancy onward (Frischen, Bayliss, & Tipper, 2007).

Priming

Brief, even subliminal exposures to stimuli can activate concepts that then influence impressions. The classic study by Higgins, Rholes, and Jones (1977) exposed participants to traits (e.g., *adventurous* or *reckless*) which influenced their impressions of a target who behaved in ways that could be interpreted either way. Besides such assimilation effects, priming can produce contrast effects. Förster, Liberman, and Kuschel's (2008) "global/local processing style model" (GLOMO) describes some of the variables that determine whether assimilation or contrast occurs. See also Bless and Schwarz (2010) and Stapel (2007) for important alternative accounts of assimilation and contrast effects.

There are several types of priming (Förster, Liberman & Friedman, 2008). Repetition priming (when the same stimulus is repeated) typically increases perceptual fluency and reduces response times. Semantic priming can activate semantically related concepts (which then disambiguate stimuli, or bias subsequent judgments), goals (which direct behavior and ensure persistence by deactivating competing goals), or behaviors themselves. Procedural priming makes particular cognitive operations more likely. Affective or evaluative priming influences evaluations outside of awareness. Even cultural orientations, including individualism and collectivism, can be primed (Oyserman & Lee, 2008).

Semantic primes' effects depend on many variables (Weisbuch, Unkelbach, & Fiedler, 2008). For example, Petty, DeMarree, Briñol, Horcajo, and Strathman (2008) showed that subtle primes work best for people high in the need for cognition, whereas blatant primes work best for those who are low in the need for cognition.

Stereotypes are primed by many stimuli including simply faces (e.g., Rule, Macrae, & Ambady, 2009). Stereotyping is supported by differential attention and attribution processes (Sherman, Stroessner, Conrey, & Azam, 2005); is reinforced

through nonconscious mimicry by those who agree with stereotyped statements (Castelli, Pavan, Ferrari, & Kashima, 2009); and is supported by perceivers' nonconscious positive moods (Huntsinger, Sinclair, & Clore, 2009). Goal activation and goal satisfaction influence the application of stereotypes (van den Bos & Stapel, 2009); and the mere presence of other ingroup members can prompt egalitarian goals and affect implicit attitudes (Castelli & Tomelleri, 2008). Activated stereotypes and implicit evaluations predict different behaviors (Amodio & Devine, 2006). Kunda and Spencer's (2003) widely cited framework describes which goals operate in social interactions with stereotyped group members, and how they affect both stereotype activation and application. See Schneider (2004) for more.

Affective or evaluative priming occurs when the first stimulus of a pair (e.g., *sunshine*) speeds up the evaluation of a second stimulus (e.g., *puppy*) when their valences match. This occurs with stimulus onset asynchronies as brief as 300 ms, even when perceivers are unaware of the priming stimulus (Fazio, Sanbonmatsu, Powell, & Kardes, 1986), and does not depend on explicit evaluations (Bargh, Chaiken, Raymond, & Hymes, 1996). Evaluative priming is widely used as an implicit measure of attitudes toward the first stimuli (Fazio & Olson, 2003). But it can also affect explicit evaluative judgments of the second stimulus (Ferguson, Bargh, & Nayak, 2005).

Valence Acquisition

Stimuli, including other people, acquire positive or negative valence in many ways. Some of the most interesting recent research is in the attitudes literature. Duckworth, Bargh, Garcia, and Chaiken (2002) showed that completely novel stimuli are automatically evaluated within milliseconds. The bases of these automatic evaluations are unknown, but this work suggests that many novel stimuli are inherently valenced (Zajonc, 1980).

Single events can confer valence on otherwise neutral people. Balance theory (Heider, 1958) and research show that we like the friends of our friends, as well as the enemies of our enemies (Tashakkori & Insko, 1981). Strangers may also be (dis)liked because they resemble significant others who are (dis)liked, even when that resemblance is not recognized (Andersen, Reznik, & Glassman, 2005). Such *social cognitive transference* is largely automatic. Evaluations based on explicit information (e.g., target's membership in a valenced group) can persist well after the information itself is forgotten (Castelli, Zogmaister, Smith, & Arcuri, 2004). And perceivers' current emotions can also confer valence. DeSteno, Dasgupta, Bartlett, and Cajdric (2004) found that induced anger (vs. sadness or neutrality) created implicit negative attitudes toward minimal outgroups.

Over many trials, repeated *mere exposure* to stimuli (including other people) can make them more positively valued, through greater familiarity and processing fluency, even if that exposure is subliminal (Bornstein, 1989). Thus rapid supraliminal or subliminal exposure to outgroup members' faces increases liking for new faces from those outgroups (Zebrowitz, White, & Wieneke, 2008), and exposure to white faces can increase whites' prejudice (Smith, Dijksterhuis, & Chaiken, 2008). People's liking for average over distinctive faces seems to be based on mere exposure, even though attractiveness ratings are not (Rhodes, Halberstadt, Jeffery, & Palermo, 2005).

Explicit evaluations of others, based on the same behaviors, can be quite ideosyncratic. Schiller, Freeman, Mitchell, Uleman, and Phelps (2009) detected large individual differences during impression formation in fMRI activation of the amygdala and posterior cingulate cortex by particular behaviors, and these predicted subsequent evaluations of the actors. "Subjects regarded different segments of person-descriptive information as being relevant or irrelevant for their subsequent evaluations. The idiosyncratic basis for this . . . shapes how subjects weigh different types of information and which information is selected for additional processing" (p. 511).

Evaluative conditioning (EC), through repeated pairings with valenced objects, can impart positive or negative valence to previously neutral people. Walther, Nagengast, and Trasselli (2005) suggest that EC does not depend on awareness or on highly invariant contingencies, unlike classical or signal conditioning; resists extinction; is subject to counterconditioning; produces evaluations that spread to other stimuli that were already associated with the target; and is based on association mechanisms. So it likely plays an important role in many familiar social phenomena. See also Ferguson (2007).

Attitudinal ambivalence occurs when evaluations of others are simultaneously positive and negative. Van Harreveld, van der Pligt, and de Liver (2009) describe this conscious phenomenon and its consequences for decision-making, in their model of ambivalence-induced discomfort (MAID). A different sort of ambivalence arises when implicit

(inaccessible) and explicit (accessible) attitudes differ (Rydell et al., 2006). Son Hing, Chung-Yan, Hamilton, and Zanna (2008) describe several interesting implications of such a two-dimensional (positive-negative and implicit-explicit) model for prejudice. And Rydell and McConnell (2006) provide a convincing dual "systems of reasoning" approach to how differing implicit and explicit attitudes toward the same object (e.g., person) can themselves change and also affect behavior.

Spontaneous Inferences from Behaviors

Early models of impression formation assumed that "behaviors will typically not be spontaneously encoded in terms of trait (attribute) concepts unless a specific processing objective requires it" (Wyer & Srull, 1986, p. 328). Research on "spontaneous trait inferences" (STIs), using more than a half-dozen paradigms, challenged this assumption. Reading descriptions of targets' trait-diagnostic behaviors with the intent to memorize or familiarize oneself with them produces trait inferences, with little or no effort or awareness, and these inferences affect subsequent judgments (Uleman, Newman, & Moskowitz, 1996). Implied traits are activated (lexical decision and probe recognition paradigms) and bound to representations of the target (false recognition and savings-in-relearning paradigms; Carlston & Skowronski, 2005; Todorov & Uleman, 2004). STIs are more likely in individualistic (Anglo) than collectivist (Hispanic) cultures (Zárate, Uleman, & Voils, 2001), and more likely by those high on idiocentrism (Duff & Newman, 1997) and the personal need for structure (Moskowitz, 1993). Once STIs are formed about one member of a social group that is high (but not low) in entitativity, they generalize to other group members (Crawford, Sherman, & Hamilton, 2002).

Besides traits, people spontaneously infer goals (Hassin, Aarts, & Ferguson, 2005), justice concepts (Ham & Van den Bos, 2008), counterfactual behaviors (Roese, Sanna, & Galinsky, 2005), and nonsocial causes (Hassin, Bargh, & Uleman, 2002). Both traits and situational causes may be activated simultaneously (Ham & Vonk, 2003). Target valences are inferred spontaneously, especially by extraverts, and persist for days (Bliss-Moreau, Barrett, & Wright, 2008). Moreover, some affect prompted by targets' behaviors (e.g., disgust) is spontaneously retrieved on subsequent encounters with their faces (Todorov, Gobini, Evans, & Haxby, 2007), as detected by fMRI.There are other neuroscience STI studies. Mitchell, Cloutier, Banaji, and Macrae (2006) located a region of dorsal medial prefrontal cortex that is spontaneously activated (fMRI) by trait-diagnostic, but not by nondiagnostic behaviors. Van Overwalle, Van den Eede, Baetens, and Vandekerckhove (2009) report differential ERP evidence for spontaneous and intentional trait versus goal inferences.

Spontaneous trait transference (STT) refers to communicators becoming associated with the trait implications of behaviors they ascribe to others (Skowronski, Carlston, Mae, & Crawford, 1998). Several interesting differences between STIs and STTs implicate different cognitive processes (e.g., Carlston & Skowronski, 2005). Participants with the task of judging the veracity of trait-implying statements show no evidence of STIs, but STTs persist (Crawford, Skowronski, Stiff, & Scherer, 2007). STTs do not occur when representations (photos) of both communicator and target are present at encoding (Goren & Todorov, 2009).Gawronski and Walther (2008) present evidence for their transfer of attitudes recursively (TAR) model, in which communicators become associated with the *evaluative* (not trait) implications of behaviors ascribed to others. They provide a lucid discussion of differences (in predictions and mechanisms) among STT, balance theory, EC, and TAR, including evidence that TAR is inferential rather than associative.

Control and Automatic Processes

The old dichotomy between controlled and automatic processes is too simple. Not only do (1) the several criteria for automaticity not always co-occur, but also (2) virtually all processes of interest to social psychologists involve both control and automatic processes, and (3) there are many kinds of mental control (e.g., Pennebaker & Wegner, 1993). One fruitful approach to this complexity is provided by Jacoby's (1991) process dissociation procedure (PDP), which defines control in terms of the difference in performance on the same basic task under two conditions: one in which automatic and controlled processes work together to facilitate performance, and the other in which they oppose each other. Often the former condition involves simply performing the task as intended, and the latter condition involves eliminating or *controlling* effects of prior information on performance, by excluding it. Hence the definition of control is straightforward and natural. Control exists to the extent that performance differs between the two conditions. Once control (C) is estimated, a pair of equations provides estimates of A, automatic processes. See

Ferreira, Garcia-Marques, Sherman, and Sherman (2006) for multiple illustrations.

Most PDP research on person perception involves stereotyping, because of the strong interest in controlling its undesirable effects. For example, in Payne's (2001) weapons identification task, participants must identify a stimulus as a tool or a gun as quickly as possible, while trying to avoid the influence of preceding photos of a black or white man on each trial. On black-gun trials, automatic processes (stereotypic associations of black men with violence) and controlled processes (detecting a gun rather than a tool) both contribute to rapid accurate performance. But on black-tool trials, they oppose each other. Typical results show both C and A making significant contributions, so the interesting questions concern variables that influence their magnitude. Payne (2008) provides an excellent overview of research using this approach, including its use in conjunction with social neuroscience conceptions of control (Amodio, Devine, & Harmon-Jones, 2008).

More complex multinomial models of control and automatic processes' joint operation are possible. A particularly well developed one, the quad model (Sherman et al., 2008) includes two parameters that usually represent automatic processes (AC, activation; and G, guessing) and two for control processes (D, detection; and OB, overcoming bias). AC is the probability that a particular construct, evaluation, or behavioral impulse is activated by the stimulus, as in priming. D is the probability of detecting the correct response, strategically. OB is the probability that a correction occurred, given that AC could produce a response different from what D suggested. And G is the probability of guessing a correct response, given that neither AC nor D suggested a response. The model has shown adequate fit to data from semantic and evaluative priming tasks, weapons identification, the IAT, and the Go/No-Go Associations Test (GNAT). Sherman et al. (2008) describe several cases in which reanalyses with the quad model modify previous conclusions. For example, context effects on "automatic associations" may result from changes in control processes as well. Training to reduce biased stereotypic associations can both decrease AC and increase D. Implicit biases that increase with alcohol consumption were shown to result simply from decreases in OB. And individual differences in controlling race bias (Amodio et al., 2008) were traced to differences in AC and D, but not OB.

Virtually all applications of the quad model to date have used reaction times, but it is not restricted to these. Burke and Uleman (2006) described a study of the effects of spontaneous trait inferences on subsequent trait ratings of targets. They showed heightened AC of implied traits to targets; minimal G; and significant individual differences—for participants run in the first part of the semester. Participants run at the end of the semester showed less AC and greater G, supporting informal observations that these Ps unconsciously learned less and guessed more.

The quad model will change our view of automatic and controlled processes, from the idea that each is tapped by particular tasks, or that if they cooccur they always compete with each other, to the view that there are be several kinds of each, and that they complement and compete with each other, depending on task demands and conditions. The prospect of correlating quad parameters with behaviors and social neuroscience markers is particularly exciting.

Accuracy of Initial Impressions

Gauging perceivers' accuracy depends on having criteria against which to compare their perceptions. When objective criteria for accuracy exist (e.g., height, income), there are few problems. But subjective criteria or ratings (e.g., how tall or successful?) present special problems, including how perceivers interpret the question (Uleman, 2005) and frame the comparisons they are making. Thus a woman may be judged as the same height as a man, but relatively "tall" because she is implicitly compared with other women (Biernat, 2003). Many of the criteria of interest to personality and social psychologists are subjective (e.g., traits) with shifting comparison frames.

If subjective ratings of a target are used as criteria, are a target's self-ratings, or a composite of others' ratings more valid? There seems to be no general answer. Vazire and Mehl (2008) present evidence that each has substantial predictive validity for a range of everyday behaviors' frequencies, and each often has unique validity. Behaviors are probably the least controversial criteria for accuracy (Kenny & West, 2008), especially (and perhaps only) when the behaviors are unambiguous.

The accuracy of stereotypes has been a research topic in its own right. Jussim (2005) has been particularly vigorous in documenting the accuracy (as well as the errors) of stereotypes, often with behavioral evidence in natural settings such as schools. He provides an excellent discussion of how to distinguish between accuracy and self-fulfilling prophecies,

the importance of differentiating levels of analysis in analyzing stereotypes, and how accuracy can sometimes lead to discrimination.

Accuracy in Trait Judgments

There are at least four major conceptions of accuracy in trait judgments. Kruglanski (1989) viewed traits as useful social constructs based on consensus, with their reality moot. Gill and Swann described "pragmatic accuracy" as "accuracy that facilitates the achievement of relationship-specific interaction goals" (Gill & Swann, 2004, p. 405). They found that both group members and romantic partners had more functional, pragmatically accurate perceptions of others in task- and relationship-relevant domains than otherwise. Gagné and Lydon (2004) found that in relationships, bias and accuracy coexist in different areas. Perceivers are "more accurate in epistemic-related relationship judgments while being more positively biased in esteem-related relationship judgments" (p. 322).

Funder's realistic accuracy model (RAM; 1995) assumes traits are "real," and advocates multifaceted criteria to assess them. So Letzring, Wells, and Funder (2006) used self-ratings, ratings by knowledgeable peers, and clinical interviews to establish criteria for accuracy, in a study of perceptions of triads of strangers. Reminiscent of Brunswik's (1956) lens model, RAM holds that accuracy depends on (1) the relevance of behavioral cues to a trait, (2) how available these cues are for observation, (3) the ease with which they can be detected, and (4) how they are used. In an interesting extension, Letzring (2008) found that the accuracy of *observers* of triadic interactions was positively related to the number of "good judges" (good social skills, agreeable, well adjusted) within the triads. This suggests that good judges are not only better at detecting and using relevant cues, but that they also elicit them in ways other observers can use.

Ickes (2009) focuses on empathy in social interactions; has developed innovative methods for defining and measuring accuracy in knowing what interaction partners were thinking and feeling; and has generated a wealth of interesting results.

The most quantitatively sophisticated views of accuracy emerge from Kenny's social relations model (SRM; Kenny, 1994) and PERSON model (Kenny, 2004). This work isolates several sources of accuracy, in both targets and perceivers. The SRM decomposes ratings of many targets, by many perceivers, into independent components attributable to targets, to perceivers, and to their unique interactions ("relationship effects"). The PERSON model decomposes the variance in such ratings into components that are more psychologically meaningful (namely Personality, Error, Residual, Stereotype, Opinion, and Norm; but note that Kenny's quantitative definitions of these mnemonic terms are not always obvious). PERSON generates predictions and explanations of several interesting phenomena, once appropriate parameters from past research are employed. For example, the surprising degree of consensus among perceivers at "zero acquaintance" and from "thin slices" of behavior is attributable largely to Stereotypes ("shared assumptions based on physical appearance"; Kenny, 2004, p. 268). With increasing acquaintance, asymptoting at about 100 acts after a few hours of interaction, consensus hardly increases, but is based entirely on Personality (perceivers' consistent shared interpretation of the target's acts). Yet consensus only accounts for about 30% of the variance in impressions. The remainder is based on Opinion (the consistent, private, and "unique view that the perceiver has of the target," Kenny, 2004, p. 268).

PERSON accounts for other important results. First, consensus partly depends on how much perceivers observe the *same* target behaviors. Yet this effect only makes a large difference for extraversion (among the Big Five, usually employed in these studies), probably because perceivers typically observe the same behaviors in groups, and group settings are uniquely appropriate for extraverted behaviors. Second, O is the dominant contributor to accuracy under standard conditions. Kenny (2004, p. 272) notes that Swann has called this "circumscribed accuracy" and claimed it reflects behaviors that are uniquely available to the perceiver. But most research suggests that it represents unique *interpretations* of target's behaviors by the perceiver, not unique *behaviors*. There is much more to PERSON, and to Kenny's general approach, than can be described here (e.g., Kenny & West, 2008). It simultaneously takes into account accuracy and bias of various sorts (e.g., Kenny & Acitelli, 2001); accounts for changes in perceptions over time; and models many of the findings from natural and experimental settings. As the field becomes more sophisticated and software becomes friendlier, it will become increasingly influential.

Deception

Bond and DePaulo (2008) analyzed how well perceivers can detect strangers' deception, across 247 experimental studies, and found that their ability is

negligible. Perceivers differ from each other in suspiciousness, but not in accuracy. Overall, they judge others as truthful. Some targets are more credible (believable) than others, based partly on physical appearance. Credibility differences among targets are larger than differences in trust/suspicion among perceivers, but these are also unrelated to detecting deception. Results are essentially the same when testing lies by acquaintances, and high-stakes lies. These studies, however, exclude important factors that lead to detecting deception in real-world settings. Park, Levine, McCornack, Morrison, and Ferrara (2002) asked over 200 undergraduates to describe incidents of detecting deception in their own lives. People usually relied on information from third parties, and physical evidence. Becoming suspicious in the first place was critically important; and that the process often took days to months or longer. All of this suggests that cues from liars' behavior alone are not only few and far between, they are also relatively unimportant in detecting deception. (See also Kassin & Kovera, chapter 30, this volume.)

Motivated Biases and Distortions

Motivated biases and distortions occur in many ways. When the self-concept is threatened (e.g., via failure feedback), stereotypes are more likely activated and applied, and this restores self-esteem (Fein & Spencer, 1997). Furthermore, self-concept threat selectively activates the relevant (vs. irrelevant) content in a stereotype, which is then selectively applied to stereotyped (vs. nonstereotyped) targets (Govorun, Fuegen, & Payne, 2006).

In general, perceivers are motivated to draw inferences about others that are harmonious with their current self-concepts, if not also self-affirming (see Dunning, 2003, for a review). In defining positive traits, perceivers (particularly those with high self-esteem) emphasize self-descriptive manifestations of these traits, and evaluate others who fit these definitions more positively (e.g., Beauregard & Dunning, 2001). When a target is known to be competent in a given domain, perceivers infer that s/he possesses self-descriptive attributes (McElwee, Dunning, Tan, & Hollmann, 2001). Thus a violinist who learns that a well-liked target is musical assumes she plays the violin.

Repressors show less evidence of STIs from negative (vs. positive) behaviors, but this bias disappears when they must respond quickly. This suggests that they attend to threat cues early in processing and engage in avoidance at later stages (Caldwell & Newman 2005).

Defensive projection involves perceiving in others qualities that are unacceptable in oneself. Newman, Duff, and Baumeister (1997) argued that defensive projection is not directly motivational, but is a by-product of cognitively suppressing thoughts of self-relevant but undesirable qualities. This suppression then makes these thoughts hyperaccessible, so they affect perceptions of others. Perceivers led to believe they have an undesirable trait that they are asked to suppress perceive this trait in another group, and the success of suppression predicts the strength of projection (Newman, Caldwell, Chamberlin, & Griffin, 2005). Others argue that perceiving negative qualities in others may function to deny their relevance to oneself: Perceivers who received feedback that they were high on an undesirable trait (anger or dishonesty), and then had a chance to project the trait onto a target, showed less accessibility and self-attribution of the trait (Schimel, Greenberg, & Martens, 2003).

Functional projection occurs when people perceive qualities in targets that are functionally related to their own mental states (Maner et al., 2005). For instance, following the activation of self-protection goals, white U.S. participants perceive more anger (but not other, functionally irrelevant emotions) only in faces of outgroups implicitly associated with threat (e.g., black males and Arabs, but not black females or whites). Similarly, white U.S. males perceive more sexual arousal in white female faces after a mating goal is primed. Chronic self-protection and mating goals show similar effects.

Mortality salience (MS, i.e., thoughts of one's own death) motivates people to increase the search and preference for stimuli that validate their cultural worldview. Those high in MS prefer stereotype-consistent outgroup targets (Schimel et al., 1999) and targets who praise or endorse their worldview (Greenberg et al., 1990). MS also increases seeking and preferring order and stability in the social world. So MS increases primacy effects in impression formation and the preference for Heiderian interpersonal balance (Landau et al., 2004), especially for perceivers high in the personal need for structure.

Ideological beliefs affect person perception in motivational ways. Rich targets are seen as more competent (e.g., intelligent), and poor targets as warmer, consistent with the SCM (Fiske et al., 2002). The source of affluence (inheritance or hard work) and perceivers' belief in the Protestant work ethic influences these impressions (Christopher et al., 2005). Conversely, exposure to targets who

display complementary qualities (e.g., "poor but happy" and "rich but miserable") increases explicit endorsement of system-justifying views, because the belief that "no one has it all" legitimizes an unjust world (Kay & Jost, 2003). Similar effects on justification of gender inequalities occur for exposure to complementary gender stereotypes (Jost & Kay, 2005). Exposure to innocent victims implicitly activates justice concerns, because such targets threaten perceivers' belief in a just world (Hafer, 2000). These findings show that simple exposure to hypothetical others with particular combinations of characteristics can activate political views of broad social significance.

Features of Targets, Perceivers, and Relations

Target Features

The face is central for identifying individuals, but within the first few hundred milliseconds, perceivers also extract social category membership (Macrae, Quinn, Mason, & Quadflieg, 2005); infer personality attributes (Todorov, Pakrashi, & Oosterhof, 2009), sexual orientation (Rule, Ambady, & Hallett, 2009), sexual strategy (e.g., Boothroyd, Jones, Burt, DeBruine, & Perrett, 2008), and social dominance (e.g., Chiao et al., 2008), and retrieve previously learned behavioral information (Todorov et al., 2007). Zebrowitz (2006) outlined much of what is known and what remains to be discovered, for a comprehensive theory of face perception.

Information from a target's face, and information known through other channels, provide the context for each other (Johnson & Freeman, 2010). For example, inferences from a target's face are used in interpreting verbal information ("reading from faces"), and personality knowledge influences the perception of faces ("reading into faces"; Hassin & Trope, 2000). Similarly, a target's social category membership influences perception of facial features (Eberhardt, Dasgupta, & Banaszynski, 2003) and facial expressions of emotions (Hugenberg & Bodenhausen, 2003). Perception of facial emotions and implicit prejudice guide category inferences (Hugenberg & Bodenhausen, 2004), as does disliking the target (Richeson & Trawalter, 2005). The widely reported amygdala response, indicating white perceivers' racial bias to black male faces (e.g., Phelps et al., 2000), only occurs when target faces are looking at perceivers (Richeson, Todd, Trawalter, & Baird, 2008).

Sophisticated quantitative analyses of faces and responses to them are increasingly prominent. Oosterhof and Todorov (2008) used a statistical model of face shapes to generate a multidimensional array of emotionally neutral faces, and then got trait ratings of them. Two dimensions—trustworthiness/valence and dominance/power—account for these ratings quite well. In another approach, the extent to which "normal" faces resemble anomalous or baby faces (as measured by activations in a connectionist network) predicted perceivers' trait impressions of the faces (Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). While their accuracy is debated (e.g., Penton-Voak, Pound, Little, & Perrett, 2006), face-based inferences from faces affect such important behaviors as voting (Todorov, Mandisodza, Goren, & Hall, 2005) and criminal sentencing (Blair, Judd, & Chapleau, 2004).

Other visual cues, from posture to hand movements (self-touching) to hair style, have a wide range of meanings. The ability of targets to accurately send nonverbal cues ("encoding") and of perceivers to interpret them ("decoding") varies. Perceivers with better psychosocial adjustment and higher intelligence generally decode nonverbal cues more accurately (Hall, 2009). Perceivers also differ in their reliance on perceptual cues, as measured by the paper-and-pencil Perceptual Reliance Index (PRI; Livingston, 2001).

"Thin slices" are short, dynamic audio and/or visual streams of behavior with a mixture of information about targets (e.g., facial expressions, body posture and movements, speech, context of behavior, etc.). Perceivers accurately detect such diverse outcomes from thin slices as doctors' effectiveness in treating patients and their history of malpractice, teachers' effectiveness, the type and quality of relationship that dyads have, a variety of dispositions, personality disorders, and targets' testosterone levels (see Ambady, Bernieri, & Richeson, 2000). Such judgments rely mostly on nonconscious, intuitive processes (Choi, Gray, & Ambady, 2005). The accuracy of thin slice judgments is limited by familiarity with the target's cultural background and context, the kind of judgment made, and perceivers' ability to decode relevant information. Speed-dating provides live thin slices, allowing dyadic processes to be examined in real time with high external validity (Finkel & Eastwick, 2008).

Point-light displays enable researchers to study kinematic cues separately from other bodily and facial features. They afford social inferences as detailed as a target's vulnerability to attack (see review by Johnson, Pollick, & McKay, 2011).

Johnson and Freeman (2010) argue that visual cues and the inferences they afford set the context for one another, as when angry bodies (in point-light displays) are categorized as male more often than female, and vice versa for sad bodies; or when a target's sex and gender, inferred from body shape, influences whether or not particular body motions are seen as attractive.

Gifford (2006) warned of the complexities of nonverbal research, particularly using targets' self-reports or informants' reports to evaluate *accuracy.* He argued, on the basis of Brunswik's (1956) lens model, that an ideal study should employ a set of independent, trained judges that code targets' nonverbal behaviors. This allows the researcher to test which cues are encoded (displayed) by targets; what their personality dispositions are (*cue validity*); which of these cues are decoded by perceivers; and what kinds of personality impressions they arrive at (*cue utilization*). For instance, in judgments of extraversion-gregariousness, head nodding was both a valid (i.e., more extraverted targets nodded more) and a utilized cue (i.e., the frequency of nods correlated positively with perceivers' judgments of extraversion).

Auditory cues provide information about targets' affect (see Juslin & Scherer, 2005, for an excellent review). Cues from different modalities interact. Integrating facial and vocal information has implications for affect and identity perception (reviewed by Campanella and Belin, 2007). People can match unfamiliar faces to voices, and vice versa, at better than chance levels (Kamachi, Hill, Lander, & Vatikiotis-Bateson, 2003). Such findings suggest that, while often studied in isolation, cues from different modalities are perceived concurrently, as a Gestalt.

Olfaction and hormone effects have been studied mostly in terms of women's increased sensitivity (e.g., faster categorization times) to male faces for heterosexual women and female faces for homosexual women (Brinsmead-Stockham, Johnston, Miles, & Macrae, 2008), and women's preference for more masculine faces for short-term relationships during the high fertility phase of their menstrual cycle (Penton-Voak et al., 1999). See Schaller (2007) for a review. Olfactory cues influence person perception even when they do not come from the target (Demattè, Österbauer, & Spence, 2007).

Artifacts, byproducts, and settings provide useful cues about targets. For example, music preferences support personality inferences (Rentfrow & Gosling, 2006), as do ambient sound samples, recorded unobtrusively by a device carried by targets (Mehl, Gosling, & Pennebaker, 2006). People construct the physical settings they occupy (home, office, bedroom, etc.) by deliberately decorating them ("identity claims") or otherwise leaving marks behind ("behavioral residue") (Gosling, Ko, Mannarelli, & Morris, 2002). Observers pick up mostly valid cues from residential spaces (e.g., how organized a person's office is) and arrive at consensual and generally accurate judgments (judged against self- and informant-reports) of targets' standing on the Big Five factors.

Cyberspace provides many ways for people to express themselves. Personal Web sites consist almost entirely of identity claims (vs. behavioral residue) and thus may provide a particularly clear and coherent message about the author's personality. Overall, Web site observers develop consensual and accurate impressions of targets, as judged by self- and informant-reports (Marcus, Machilek, & Schütz, 2006; Vazire & Gosling, 2004). Inferences of openness to experience from Web sites are about as accurate (relative to self-reports) as from long-term acquaintanceships. The accuracy of impressions from Web sites is comparable to impressions from offices and bedrooms.

Reputations are shared impressions of a target. Anderson and Shirako (2008) argued that reputations develop because perceivers are motivated to pass on their impressions of targets. They also showed that targets that are more visible in a community are more likely to develop reputations, and that these reputations are more closely tied to their behavior history.

In their distributed social cognition (DSC) model, Smith and Collins (2009) explored "multiple perceivers and targets who actively elicit information from each other in interaction and share their impressions within networks of social relationships, influencing each others' impressions over time" (p. 344). They outlined various mechanisms that suggest that "the structural patterns of social ties among individuals can be just as important as the individual and dyadic processes of impression formation in determining what information each individual has access to, as well as the overall patterns of impressions" (p. 349). Using multiagent simulation with only three simple mechanisms (e.g., the likelihood of sampling information about an actor decreases as the valence of the actor becomes more negative), they provide insights into complex emergent phenomena that are hard, if not impossible, to predict otherwise.

Perceiver Features

Aging may reduce basic social-cognitive abilities related to theory of mind (Sullivan & Ruffman, 2004), recognizing emotions (Phillips, MacLean, & Allen, 2002) and establishing joint attention with others (Slessor, Phillips, & Bull, 2008). Diminished cognitive inhibition may produce more stereotyping and prejudice (von Hippel, 2007). In addition, people rely more on affective (vs. deliberative) information processing strategies as they age, due to declines in the efficiency of control processes (Peters, Hess, Västfjäll, & Auman, 2007). They are more susceptible to making dispositional attributions (Blanchard-Fields, 1994) unless they are high in attributional complexity (Horhota & Blanchard-Fields, 2006). This latter finding may represent an increased reliance on cultural explanations for behavior, because older Chinese adults do not show greater correspondence bias (Blanchard-Fields, Chen, Horhota, & Wang, 2007).

On the other hand, older adults have some advantages and ways to compensate for their biases. The older a person is, the more they are likely to rely on trait-diagnostic information, suggesting increased ability "to discriminate between more and less informative aspects of individuals' behaviors" (Hess & Auman, 2001, p. 507). When the target is more personally relevant and when they are held accountable, older adults make more accurate trait inferences and recall more target information (Hess, Osowski, & Leclerc, 2005). Additional time for making judgments can alleviate older adults' bias toward dispositional attributions (Chen & Blanchard-Fields, 1997), and eliminate other age differences (Ybarra & Park, 2002).

Working memory capacity (WMC), measured by attention span tasks, is directly related to controlling attention. So WMC should be related to stereotype suppression, correcting initial impressions (e.g., to take into account situational factors), forming on-line versus memory-based impressions, and forming more complicated person impressions that integrate multiple, inconsistent elements (Barrett, Tugade, & Engle, 2004, pp. 560–561). The importance of executive functioning in person perception is well established (see Macrae & Bodenhausen, 2000). But there is still "a dearth of research on the impact of individual differences in attentional resources on social cognition" (Conway, 2000, p. 7). Not all types of cognitive load impair person perception in the same way (e.g., Macrae, Bodenhausen, Schloerscheidt, & Milne, 1999), and the effects of alcohol on person perception cannot be reduced to overall impairment of WMC (Bartholow, Pearson, Gratton, & Fabiani, 2003).

Emotional Intelligence (EI) is attracting increased empirical attention following recent theoretical advances that provide a clearer definition of the construct (Mayer, Roberts, & Barsade, 2008). But little is known about how EI relates to first impressions, including the accurate perception of emotions.

Relational Features

Perceivers and targets are related in many ways that develop over time. Because this chapter concerns only initial impressions, we restrict our review to two relations that are present initially: power and psychological distance.

Power that perceivers hold over targets, or even over others who are not targets, can affect impression formation (Guinote & Vescio, 2010). For example, Houssais, Uleman and Saleem (2009) found that merely thinking about past situations in which one had power over others produced more STIs about unrelated targets. But usually power describes relations between perceiver and target.

Early research showed more stereotyping of the powerless by the powerful (Fiske, 1993; also Vescio, Snyder, & Butz, 2003). But power can lead to individuation of powerless targets if they are useful for attaining goals, especially goals that are mentally active and supported by a legitimizing organizational structure (Overbeck & Park, 2006). High-power perceivers are attracted to goal-relevant targets more than low-power perceivers, especially when the relevant goal is activated (Gruenfeld, Inesi, Magee, & Galinsky, 2008), an important qualification of the general finding that goal-relevant stimuli are evaluated more positively (Ferguson & Bargh, 2004). Mast, Jonas, and Hall (2009) found that priming high power (vs. low power) led to greater interpersonal sensitivity, partially mediated by positive social emotions (e.g., pride, feeling respected)—results contrary to some earlier research (e.g., Galinsky, Magee, Ines, & Gruenfeld, 2006). Importantly, this was true only when power was construed empathically (feeling responsible for subordinates) and not egoistically (putting oneself first).

Targets' power affects attributions about their behavior by unrelated perceivers. Overbeck, Tiedens, and Brion (2006) argued that the stereotype for "powerful people" includes being less constrained and therefore more likely to act on dispositional than situational bases. This may be more than just

a stereotype (e.g., Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). Perceivers attribute the actions of high (vs. low) power targets more to dispositional than situational causes (Overbeck et al., 2006). Attributions about low-power targets are also influenced by the type of power to which they are subject. Coercive power leads to more situational attributions than referent power. Differential attributions to high vs. low-power targets are also more evident when the role of situational constraints is unclear.

Psychological distance (spatial, temporal, and in terms of probability) has effects on a remarkable range of phenomena (Liberman, Trope, & Stephan, 2007). Construal level theory (CLT; Trope & Liberman, 2000) asserts that psychological distance (vs. closeness) produces high-level construal of events and objects, including other people, and this is associated with a focus on abstract, global, and superordinate features. Traits are relatively high level, abstract ways of thinking about others. Thus when targets are more distant, the correspondence bias is stronger (Henderson, Fujita, Trope, & Liberman, 2006; Nussbaum, Trope, & Liberman, 2003, Study 1), behavior is seen as more cross-situationally consistent (Nussbaum et al., 2003, Study 2), and perceivers ask more decontextualized, abstract questions about others when predicting their future behavior (Nussbaum et al., 2003, Study 3). Perceivers use more abstract (e.g., trait) terms in describing distant vs. close others (Fujita, Henderson, Eng, Trope, & Liberman, 2006). And people are more likely to make STIs when targets are spatially or temporally distant, or when in an abstract mind-set (Rim, Uleman, & Trope, 2009). So psychological distance produces more trait use when intentionally describing, predicting, and explaining others, as well as when thinking about them spontaneously.

Explanations

Explanations (vs. descriptions) of others' behavior involve causal theories, and these invariably involve attributions and assignments of responsibility, credit, and blame. The line between descriptions and explanations is not always clear, and it is obscured when "descriptions" are crafted to deflect blame. Nevertheless, this distinction is important (Hamilton, 1998). Three general frameworks for understanding explanations have been popular: attribution theory, theory of mind, and simulation theory. Each has a long history, so we focus on recent developments.

Attribution Theory

A basic but seldom asked question concerns the accuracy of attributions of causality. Robins, Mendelsohn, Connell, and Kwan (2004) looked at perceivers' consistency and agreement on their partners' and their own behaviors and their causes. Although there was relatively high consistency and agreement on behaviors (such as talkative, warm, nervous, and effective), there was virtually no agreement on their causes (target's mood, personality, partner, and other aspects of the situation). This suggests "that causal attributions are more strongly influenced by implicit biases" (p. 342).

Nevertheless, when presented with highly selective behavior summaries, perceivers do show many of the regularities first suggested by early attribution theorists. Hilton (2007) presents important updates. Regarding Kelley's ANOVA model, he notes that attributions are not based solely on observed covariation, but depend heavily on general world knowledge, which determines what is expected and what is not. Only the latter needs explanation. Further, early misspecification of the model produced underestimates of people's rationality and overestimates of bias. He notes Morris and Larrick's (1995) Bayesian demonstration that faulty beliefs rather than faulty reasoning from these beliefs account for the "fundamental attribution error" (FAE), and that there is wide variation in beliefs about relations between situational and dispositional causes (e.g., Church et al., 2003). Gawronski (2004) posed a more fundamental challenge to the FAE (the belief that situational factors have little impact on behavior), contending that it is dead but that the correspondence bias lives on. Hilton (2007) emphasizes that attributions are based on spontaneously imagined counterfactuals as well as actual observations, and are also constrained by the Gricean rules of conversations. These were missing from earlier theories.

Malle (2006) challenged the actor-observer asymmetry, in which perceivers attribute others' behaviors to dispositions, but their own behaviors to situations. In a meta-analysis of 173 studies, he found that, "the classic actor-observer asymmetry was very small or non-existent" (p. 900). Furthermore, the effect was evident for negative events, but reversed for positive events.Malle, Knobe, and Nelson (2007) reported six new studies that also collectively failed to find the actor-observer asymmetry, either in terms of the person-situation dichotomy or in trait ratings.

The other major development concerns attributions of blame and responsibility. Earlier formulations (e.g., Shaver, 1985) posited that these followed

from attributions of causality, accompanied by attributions of intention, foreseeability, capacity, and so forth. Only then was blame attributed. Haidt (2001) turned this formulation on its head and posited that intuitions (often emotionally based) come first, followed by rationalizations and reasoning. And most of the reasoning happens socially, between people, rather than through inner speech. Thus, "moral intuitions and emotions drive moral reasoning" (p. 830). Not all moral reasoning depends on others' opinions (Haidt & Kesebir, 2010), but much of it does. Haidt's formulation has precedents. Alicke (2000) showed clearly that people's evaluation of causality in culpable events is affected by outcomes over which the target had little or no control.

Theory of Mind

"Theory of mind" attempts to delineate how people (and other mammals) infer the mental events that occur in others' minds. Malle (2004) developed an adult folk theory that organizes people's explanations for others' behaviors in natural settings, in the spirit of Heider (1958), and provides an alternative to classical attribution theory. Explanations are communications, not simply private thoughts. So they follow conversational (Gricean) rules, and carry implications of praise and/or blame in addition to mere causality. The central distinction is between accidental behaviors (e.g., stumbling) and intentional acts, not between situational and dispositional causes. Intentionality judgments depend on multiple cues, and the ability to make them emerges early in life. Sensitivity to the various features of animacy occurs during infancy (Rakison & Poulin-Dubois, 2001). By 16 months, infants distinguish intentional acts from accidental behaviors, and are less likely to repeat an adult's action that is followed by "Whoops" (and hence accidental) than by "There!" (Carpenter, Akhtar, & Tomasello, 1998). Even 6- to10-month-old infants form impressions, and prefer puppets who intentionally help rather than hinder other puppets (Hamlin, Wynn, & Bloom, 2007).

In Malle's (2004) framework, only *behaviors* (accidental) are explained by *causes,* whereas *acts* are explained by *reasons*. Causes can be situational or personal (including traits), whereas reasons depend on the target's values, beliefs, and desires. If such immediate mental states are unknown, a *causal history of reasons* explanation is offered, in personal (e.g., "he is lazy") and/or situational terms. Finally, acts may be explained in terms of situational and/or personal enabling factors, again including traits. This framework has considerable support and leads to novel predictions. For example, Malle et al. (2007) found good evidence for three kinds of actor-observer asymmetries (although not the traditional one).

Reeder's multiple inference model (Reeder, Vonk, Ronk, Ham, & Lawrence, 2004) is consistent with Malle's framework. It contends that people explain others' intentional acts in terms of motives (i.e., reasons, based on values, beliefs, and desires); that multiple motives are considered; that these motives have specific content; and that these are reconciled with situational pressures to produce trait inferences (or not). Specific motives mediate specific trait inferences. Reeder, Monroe, and Pryor (2008) showed that the nature of situational constraints affect the motives and traits inferred about the "teacher" in Milgram's obedience situation. Reeder (2009) discusses the model more generally, contrasting it with traditional attribution theory.

The theory of mind or "mindreading" perspective is also consistent with Idson and Mischel's (2001) findings noted above, and with Royzman, Cassidy, and Baron's (2003) "epistemic egocentrism," which shows that adults retain much of the failure in perspective-taking seen in young children's failure at the false-beliefs task.

Simulation Theory and the Self-Referential Perceptions of Others

Simulation theory (e.g., Perner & Kühberger, 2005) is less an explicit deductive theory than the other two, involving not so much inferring the other's mental state or situation from general principles as imagining oneself in the other's situation, and reading off from that simulation an explanation of why the other acted as that way, and what the other might feel and do. Much research on understanding others emphasizes the self as a starting point (Alicke, Dunning, & Krueger, 2005). People seem to use self-knowledge automatically to make inferences about others, and assume self-other similarity by default (Epley, Keysar, Van Boven, & Gilovich, 2004; Krueger, 2003; Mussweiler, 2003), particularly for ingroup members (Robbins & Krueger, 2005). Others' emotions are understood by feeling them in ourselves (Niedenthal, Barsalou, Ric, & Krauth-Gruber, 2005), as are other aspects of people's behavior (Chartrand, Maddux, & Lakin, 2005). People spontaneously project both their chronic and primed goals onto others (Kawada, Oettingen, Gollwitzer, & Bargh, 2004). They also

assimilate impressions of romantic partners to themselves, an adaptive process in high-functioning relationships (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002).

Children require practice in correcting these automatic egocentric inferences (Epley, Morewedge, & Keysar, 2004). This correction seems to fit an "anchoring-and-adjustment" model. Egocentric biases increase under time pressure, decrease with accuracy motivation, are adjusted serially and insufficiently, and stop at satisfactory but not necessarily accurate points (Epley, Keysar, et al., 2004). Although the self is a reasonable basis for inference about others, and even an adaptive strategy in the absence of information about others, adults make egocentric inferences even when they have ready access to concrete knowledge of others' beliefs (Keysar, Lin, & Barr, 2003; Royzman et al., 2003).

Van Boven and Loewenstein (2003) proposed a dual-judgment model, in which people first imagine being in the other's situation. An "empathy gap" occurs in self-predictions (i.e., predictions of one's own future acts are colored by current mental states), and this gap also appears in predicting others. Thus thirsty perceivers projected more thirst than warranted for others in a different situation, and this was mediated by self-predictions.

Judging others (vs. self) can use different information (folk theories vs. introspection, respectively), producing divergent inferences about intrapersonal and interpersonal insight (Pronin, Kruger, Savitsky, & Ross, 2001). Others may also be seen as different from self in having less essential humanness (Haslam et al., 2005), being more driven by ulterior motives or self-interest (Reeder, Pryor, Wohl, & Griswell, 2005), and more susceptible to influence and bias (Ehrlinger, Gilovich, & Ross, 2005; Van Boven, White, Kamada, & Gilovich, 2003). See Pronin, Gilovich, and Ross (2004) for a review. People project more when targets are similar to self, but rely on stereotypes more for dissimilar targets (Ames, 2004). As noted earlier, motivated biases link self with other perception in many ways. In general, people are motivated to see others in ways that support current self-views, or better yet, self-enhance (Balcetis & Dunning, 2005; Dunning, 2003).

To summarize, people are beset by egocentric biases and knowledge when perceiving others for cognitive (e.g., high accessibility of the self) and motivational (e.g., self-enhancement) reasons. Mental state inferences are no longer a "haphazard enterprise" (Davis, 2005, p. 53) but are systematically studied tools of perceivers. And there is a lively debate between simulation theory versus theory-of-mind accounts of mindreading (Perner & Kühberger; 2005; Saxe, 2005).

Conclusion

More than most other areas of research, impression formation lies at the very heart of social and personality psychology. Other's personalities are the object of study; perceivers' personalities affect their perceptions; and both of these classes of "personality" variables interact with each other and a variety of situational or "social" variables. Finally, the very metaconcept of personality is based on impressions of others. Initial impressions are the beginning of these stories.

So who are you, at least to strangers like us? It should be clear that there is no simple or complete answer. The answer depends on what you do and how we interpret it; on the social categories to which you belong, and what we are interested in or attuned to; on how you look, and what that means to us; and on who is asking, and when, and why, as well as what we all want to believe. Rather than a single answer, there is a Rashomon of realities (Kurosawa, 1950), each with its own truths and biases. Impressions are conjoint social constructions by targets and perceivers, their personalities and cultures. Understanding them requires analyses at multiple levels (cultural, personal, social, neuronal) in multiple time frames (lifetimes, years, immediate situations, and milliseconds) and degrees of awareness (explicit and implicit), and from multiple points of view (self, perceiver, consensus, and some future eye-of-God scientific framework that integrates all of these). There is no sword to cut this Gordian knot. It must be unraveled and assembled one thread at a time. But we hope you find, as we do, that the skeins and fabrics that have emerged so far are fascinating.

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