7

Mind Perception

Daniel R. Ames & Malia F. Mason

What will they think of next? The contemporary colloquial meaning of this phrase often stems from wonder over some new technological marvel, but we use it here in a wholly literal sense as our starting point. For millions of years, members of our evolving species have gazed at one another and wondered: What are they thinking right now ... and what will they think of next? The interest people take in each other's minds is more than idle curiosity. Two of the defining features of our species are our behavioral flexibility – an enormously wide repertoire of actions with an exquisitely complicated and sometimes non-obvious connection to immediate contexts – and our tendency to live together. As a result, people spend a terrific amount of time in close company with conspecifics doing potentially surprising and bewildering things. Most of us resist giving up on human society and embracing the life of a hermit. Instead, most perceivers proceed quite happily to explain and predict others' actions by invoking invisible qualities such as beliefs, desires, intentions, and feelings and ascribing them without conclusive proof to others. People cannot read one another's minds. And yet somehow, many times each day, most people encounter other individuals and "go mental," as it were, adopting what is sometimes called an *intentional stance*, treating the individuals around them as if they were guided by unseen and unseeable mental states (Dennett, 1987). Many scholars say that mind perception is more than a fortuitous development – this capacity itself may be the essence of human evolution (e.g., Byrne & Whiten, 1988). Nothing could be more necessary and familiar. But perhaps nothing could be more strange.

In this chapter, we move between the strangeness and familiarity of mind perception through the lens of social cognition. We define *mind perception* as the everyday inferential act of a perceiver ascribing mental states such as intentions, beliefs, desires, and feelings to others. For the present chapter, we use the term *mind reading* interchangeably with mind perception. We begin by focusing on *how* perceivers do this, drawing on accounts ranging from protocentrism to social projection as well as models of how perceivers shift between inferential strategies. We then turn to *how well* perceivers read one another's minds. As the social psychological literature is fond of pointing out, perceivers are far from perfect in their judgments of others. We review accounts of various distortions and also describe conditions under which judgments show better and worse validity. Lastly, we describe work showing how mind perception comes to life in a number of important domains, such as intergroup relations and interpersonal conflict, addressing selected contexts *where* perceivers engage in mind reading. We hasten to note that a growing tradition of work examines the ascription of mental states to things other than human minds, such as anthropomorphism of non-living objects or attributions of agency to religious figures or deities (e.g., Epley, Waytz, Cacioppo, 2007; Gilbert, Brown, Pinel, & Wilson, 2000). While this work is fascinating, we restrict our current scope to how human minds attempt to model other human minds.

Mind perception is a vibrant, active topic across academia, drawing in primatologists, developmental psychologists, philosophers, and neuroscientists, among others. Even a partial survey of the field can occupy an entire book or edited volume – and often does (e.g., Apperly, 2010; Decety & Ickes, 2009; Leslie & German, in press;

Malle & Hodges, 2005). We focus in this chapter on work that relates most directly to social cognition. Some of the relevant work in this field has been done through the broader lens of person perception and trait judgment (Gilbert, 1998). We see mind reading and person perception as thoroughly intertwined and so we draw on that tradition of work in our description of what we currently know and what questions remain.

HOW WE DO IT

At first glance, mind perception seems impossible. Indeed, philosophers often speak of the "problem of other minds" as a basic and punishing conundrum: people can never really be sure that other people even *have* minds, not to mention the challenge of figuring out what might be going on in them. Yet somehow most people solve this problem each day, at least to their own satisfaction. How? Over the past few decades, scholars have identified various routes perceivers take to read other minds. Many of these accounts are single-strategy models, focusing on an individual mechanism or source, such as social projection or behavioral evidence. In recent years, several bridging models have emerged, describing ways in which perceivers shift between various inferential tools. In the sections that follow, we review models of mind-reading strategies as well as models of how perceivers shift between strategies.

Reading situations

Sometimes all we need to know to read someone's mind are their circumstances. A delivery person steps onto a porch to find a snarling pit bull, a programmer's painstakingly crafted code finally executes correctly after a dozen revisions, a lecturer realizes mid-talk that the front zipper on his pants is wide open. For these cases and countless others, at least some of the contents of actors' minds seem obvious, a reflection of the situation. Philosopher Daniel Dennett (1987) argued as much in his account of the intentional stance whereby onlookers ascribe beliefs and desires to actors based on "their place in the world." A foundational principle of social psychology is that a good deal of people's cognitions and behaviors are a product of the situations they face (Ross & Nisbett, 1991). While everyday perceivers may be susceptible to overlooking such effects, some models of social judgment attempt to capture folk situationism. For instance, Trope's (1986) model of disposition inference suggests that perceivers often use situations to disambiguate an actor's behaviors and mental states. Trope presented perceivers with photos featuring ambiguous facial displays (e.g., a look that could suggest either anger or happiness) and manipulated the situation in which the display was described as occurring (e.g., a coach whose team is winning or losing). The situational contexts had a dramatic effect on the emotions perceivers ascribed to the actors (e.g., winning coaches were seen as happy, losing ones as angry).

Karniol (e.g., 1986, 2003) has been a central figure in advancing a situation-based mind-reading account. She identified a series of "transformation rules" that perceivers use to predict an actor's thoughts and feelings. For instance, when asked to read the mind of a target seeing a boat, perceivers might first assume the target's thoughts reflect the characteristics of the stimulus itself (e.g., "He thought about what a big boat it was"). Karniol's (1986) account posits that perceivers work through an ordered series of stimulus-related links in the process of mind reading. For instance, after stimulus characteristics, perceivers might consider stimulus-directed desires (e.g., "He wanted to buy the boat") and cognitions about similar category members (e.g., "He thought it looked like his uncle's boat"). This account turns on the idea that perceivers' reason from prototypes, starting with a "default" view of what human agents think, want, and feel in various circumstances. Perceivers may then adjust from this prototype or default view to reason about themselves and about specific other individuals (Karniol, 2003).

Reading behavior

A substantial amount of social cognition and person perception research in the past half century has roots in attribution theory and research. Tracing back to Heider's "naïve analysis of action" (1958), attribution theory suggests that perceivers often read targets' minds by attempting to read the causes of their behavior. In the wake of Heider, attribution scholars embraced and elaborated this approach, unpacking the ways in which perceivers perform causal analyses of behaviors (e.g., Jones & Davis, 1965; Jones & Harris, 1967; Kelley; 1973; Nisbett & Ross, 1980). A major theme in this work is that perceivers seem especially ready to assume that an actor's intentions faithfully correspond to displayed behavior or achieved outcomes – a *correspondent inference* (Gilbert & Malone, 1995). Recent work has also

considered how perceivers read behavioral profiles *across* situations. For instance, Kammrath, Mendoza-Denton, and Mischel (2005) showed that perceivers were sensitive not only to the base rate of behavior (e.g., semi-frequent friendliness) but also to its covariance with situational features (e.g., friendly to superiors but not subordinates).

Several accounts have focused on the ubiquity with which, and processes by which, perceivers posit mental states underlying behaviors. Malle (2004) proposed a framework for describing folk explanations for behavior, an inferential chain flowing backwards from intentional behavior to intentions, reasons, and the causal history of reasons. Malle (2004) found that the vast majority of spontaneous explanations offered for others' intentional behavior feature reasons (e.g., "Why did she hire him? Because he was the best candidate.") and that these reasons typically entailed inferences about the actor's desires (e.g., "She wanted to hire the best candidate") and/or beliefs (e.g., "She believed he was the best candidate"). Elsewhere, Reeder (2009) has argued that perceivers attend to the *soft constraints* in situations, such as instructions from authorities or bribes that shape the motives ascribed to actors. Read and Miller (e.g., 2005) have suggested that perceivers look for a fit between observed behavior and their pre-existing schemas – script-like knowledge structures that can organize episodes around actors' goals. For example, through a process of explanatory coherence, a perceiver might apply a narrative of *vindication* to an observed episode, which would feature an initial harm, an attempted harm in response, and an underlying goal of retribution.

The human impulse to read minds from behavior starts very early: by age two, infants show evidence of interpreting the intentions underlying behaviors and discriminating between intentional and unintentional acts (e.g., Meltzoff, 1995). Other work shows that perceivers naturally parse streams of behavior into meaningful units based in part on an actor's intentions and the fulfillment of goals (e.g., Baird & Baldwin, 2001; Newtson, 1973). Recent research suggests that perceivers read intentions from behavior with great speed, perhaps even automatically (e.g., Fiedler & Schenck, 2001). In short, perceivers often read minds by reading behavior, parsing ongoing and sometimes ambiguous streams of situated action into meaningful *acts* and then instinctively if imperfectly ascribing corresponding beliefs, desires, and feelings to actors. Along with reading arcs of intentional action, perceivers also draw inferences from non-verbal behavior and voice; Murphy (Chapter 10) discusses these dynamics in greater detail.

Reading faces

Reading minds by reading faces has a long history, tracing back at least to Aristotle, who noted that hooked noses suggest ferocity and small foreheads imply fickleness. While there are reasons to think that perceivers may read far too much into faces, or commonly misread them altogether, the readiness of perceivers to do so, and the inferential paths perceivers take, continue to be actively studied (see Todorov, Chapter 6).

One tradition of research has examined the ways in which static facial features affect social judgments. Zebrowitz (1997) has reviewed how various qualities and configurations, such as attractiveness, are taken as cues by onlookers of a person's character and attitudes. Zebrowitz has also documented the ways in which a target's *baby-facedness* – a constellation of child-like facial qualities, including a pronounced forehead, large eyes, and a softened chin – affects perceivers' judgments and behavior (e.g., Friedman & Zebrowitz, 1992). Baby-faced individuals are expected to be comparatively warm, submissive, and naïve. Recently, Todorov, Said, Engell, and Oosterhof (2008) argued that perceivers spontaneously draw judgments – such as trustworthiness and dominance – from faces within a fraction of a second. These judgments endure, shaping other inferences and behavior, such as voting for political candidates.

Other research has focused on the perception of emotional expressions. Darwin (1872) was one of the first scholars to portray emotional displays as having a signaling and coordinating function between people. For such coordination to work, perceivers must be reasonably adept at reading emotional states from displays. Scholars disagree about whether faces are a reliable guide to the experience of emotion, with some seeing facial displays as more of an automatic, non-culture-bound readout of experience (e.g., Ekman, 2003; Ekman & Friesen, 1971) and others seeing displays as more of a contrived message produced within cultural frames for social consumption (e.g., Russell & Fernandez-Dols, 1997). Yet most scholars agree that perceivers show facility in recognizing emotional displays and exhibit a readiness to ascribe feelings and intentions on the basis of such displays. Recent work suggests that emotion recognition may even be automatic and effortless on the part of perceivers (Tracy & Robins, 2008).

Perceivers also seem ready to leap beyond inferring current emotional states from displays. Numerous scholars have found overgeneralization effects whereby perceivers draw broader, characterological inferences about a target based on a single emotional display ("That smile means she's

a friendly person" vs "That smile means she's happy right now"; Knutson, 1996; Montepare & Dobish, 2003).

Ames and Johar (2009) argued that facial displays are often read in conjunction with the behavior or outcomes they accompany. They suggested that positive affective displays (e.g., expressions of happiness and satisfaction) can *augment* behavior-based inferences, whereas negative displays (e.g., expressions of remorse or dissatisfaction) can *discount* behavior-based inferences. They found that perceivers ascribed less benign intentions to helpers when their acts were accompanied by negative compared to positive displays (i.e., seemingly reluctant helpers are seen less positively), but that perceivers ascribed less sinister intentions to harm-doers when their acts were accompanied by negative compared to positive displays (i.e., seemingly reluctant harm-doers are seen more positively). Identical affective displays can thus have divergent effects on mind reading, depending on which behaviors they accompany. Ames and Johar (2009) also showed that the augmenting and discounting effects of affective displays diminished over the course of accumulating behavioral evidence. As perceivers observe more of an actor's behavior, their mind reading appears to reflect more behavior-based inferences and less affective display-based adjustments.

Faces play another important role in mind reading: they can signal category memberships that are taken as diagnostic. Perceivers appear to spontaneously extract category membership information – such as sex, race, and age – from facial displays, even under taxing conditions (e.g., Macrae, Quinn, Mason, & Quadflieg, 2005). As we discuss in the next section, social category information may have a direct impact on mind reading and can also shape how perceivers interpret facial expressions and behavior.

Reading groups and members

Stereotyping is a pervasive aspect of social judgment (see Bodenhausen et al., Chapter 16). Here, we consider the direct impact of stereotypes on mind perception as well as how stereotypes act as lenses.

Direct effects

Stereotype content is more than just "those people are bad" or "these people are good." In recent years, numerous scholars (e.g., Cuddy, Fiske, & Glick, 2008; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005) have argued that stereotypes revolve around two dimensions: warmth and competence. Some groups are stereotyped as comparatively high in warmth but low in competence (e.g., the elderly), whereas other groups are stereotyped in the reverse fashion (e.g., the rich). Ascribing competence to a target may not be a matter of mind reading per se, but we believe attributing warmth or its opposite to a group or an individual entails suppositions about goals and intentions (Read & Miller, 2005). Thus, the content of many stereotypes can have direct entailments for the mental states perceivers ascribe to targets.

The axis of warmth and cooperativeness is a recurring theme in the large body of research on gender stereotypes (e.g., Eagly & Mladinic, 1989). In the United States, women are often seen as more communal, cooperative, and emotional, whereas men are often seen as more individualistic, competitive, and rational (e.g., Heilman, 1995). Another large body of work on racial and ethnic stereotypes reveals expectations that can shape mind perception, perhaps even without the perceiver's awareness (e.g., Brigham, 1971; Devine, 1989). For instance, Krueger (1996) found evidence of cultural stereotypes among Whites in the United States, characterizing Blacks as aggressive, unmotivated, arrogant, and violence-prone. Thus, a perceiver's stereotypes can lead directly to inferences about the mental states of targets based on category memberships, including gender and race.

Stereotypes as lenses

A young schoolboy walks down a hallway between class periods and another walks up and bumps into him. Is the act mean and threatening or friendly and playful? The difference depends on what's in the bumping boy's mind – and the answer may turn on his race. Sagar and Schofield (1980) presented this scenario and similar ambiguous behaviors to schoolchildren, varying the race of the actors. Both Black and White participants rated Black actors as more mean and threatening than White actors. Racial and other stereotypes can thus act as a lens, governing how perceivers read the intentions that underlie ambiguous behaviors (Devine, 1989).

Stereotypes can also act as lenses for interpreting facial behavior. Hugenberg (2005) found that European American participants were faster to correctly categorize happy White faces as happy than they were to categorize angry White faces as angry. The reverse was true for Black faces: respondents took longer to identify the happy faces than the angry ones. In other work, Hugenberg and Bodenhausen (e.g., 2003) have linked differences in interpretations of racially-varying faces to different levels of perceivers' implicit prejudice.

Mentalizing

Before closing this section on the role of stereotypes in mind reading, we want to highlight one additional way in which stereotypes can have an impact. Some extreme stereotypes portray certain groups and members as less-than-human, targets for which a perceiver might not even adopt an intentional stance (e.g., Haslam, 2006). In some cases, perceivers may even resist ascribing certain distinctly human emotions (e.g., guilt, hope) to out-groups even though they grant them more basic emotions (e.g., fear, anger; e.g., Leyens et al., 2000). We return to dehumanization in greater detail later in this chapter.

Reading oneself to read others

In many cases, perceivers gauge what others think, want, and feel by consulting what they themselves think, want, and feel. Using one's own mind as a template for understanding others is common – and some accounts go so far as to say that the self provides an irrepressible anchor for reading others. In this section, we'll consider several species of using oneself as a template, starting with a basic mechanism of projection (my attitudes are your attitudes) and moving on to more elaborate processes (I imagine what it would be like to be you in your situation and ascribe that to you).

From me to you: Simple social projection

The most basic form of social projection emerges when a perceiver ascribes or projects his or her own general attitudes and mental states to a target. Hundreds of studies have documented and explored projection, sometimes under the label of *false consensus*, an effect whereby people overestimate the extent to which others share their attitudes and attributes (e.g., Ross, Greene, & House, 1977; see Krueger, 2000 for an overview). Various mechanisms have been proposed, including motivational processes such as wanting to belong or feel normal (e.g., Pyszczynski et al., 1996). Other explanations posit cognitive mechanisms, such as naïve realism, or the sense that one's own attitudes are a natural and sensible reaction to reality, rather than an idiosyncratic or subjective construal (Ross & Ward, 1996). Put another way, I prefer brown bread and I assume others do, too, because it is simply and obviously *better* than white bread (i.e., the difference is in the bread, not in me). In this vein, Krueger (1998) argued that, "Projection is a perceptual rather than a cognitive-motivational phenomenon. The perception of consensus is assumed to be part of the initial encoding of the stimulus rather than the outcome of subsequent higher level processes" (p. 202).

From me to you in your situation: Simulation and perspective taking

Perceivers may assume that others share their general taste in bread or films, but what do perceivers do when they have to judge a person in a particular situation, such as how they might respond when asked to donate to a particular charity or how they might feel when offered payment for a potentially embarrassing lip-synching performance in front of a large audience.

Here, too, many accounts suggest that people will turn to themselves as a template for understanding others, but these inferences involve a more active kind of transformation: putting oneself into another person's shoes in a particular situation, a process variously referred to as *simulation* or *perspective taking*.

Van Boven and Loewenstein (2005) argued that this involves two distinct steps: first, a perceiver imagines himself or herself in a target person's situation ("How would *I* feel if offered payment in exchange for lip synching?"); and, second, the perceiver then translates this into a judgment about how a target person would react ("How would *she* feel if offered payment in exchange for lip synching?"). Multiple streams of research suggest that people do frequently anchor on themselves in simulation and perspective taking. For instance, Epley, Keysar, Van Boven, and Gilovich (2004) showed that perceivers were anchored on their own interpretations of ambiguous messages when guessing others' interpretations – and that this anchoring was exacerbated under time pressure. Elsewhere, Epley, Morewedge, and Keysar (2004) found that children and adults both had initial egocentric interpretations of instructions in a coordination task but that adults more readily adjusted from them to take the perspective of their uninformed counterparts. Together, these accounts converge on the notion that a natural starting point for judging others is to start with the self – and when cognitive development and resources allow, to make adjustments for the situation and the target.

Which tool when? Process moderation and multi-process accounts

Having briefly reviewed a variety of inferential tools for reading minds, the puzzle seems to shift from "How could a person possibly understand what's happening in someone else's mind?" to "When is each of these many tools used?"

Answers to this question are beginning to emerge (e.g., Ames, 2005).

While perspective taking is reflexive for some people, scholars have found that prompting perceivers to actively take another's perspective seems to affect their inferences. These changes hold suggestions about how mind-reading tools may combine with or supplant one another. For instance, Galinsky and Moskowitz (2000) showed that asking people to imagine and write about a day in the life of an elderly person ("looking at the world through his eyes and walking through the world in his shoes") appeared to reduce the accessibility and application of stereotypes. Moreover, active perspective taking appears to increase the overlap between self-representations and judgments about a target (Davis, Conklin, Smith, & Luce, 1996).

These accounts suggest that perceivers may shift between the self and stereotypes as templates for reading minds. What draws perceivers toward one template or the other? Group boundaries appear to matter. Clement and Krueger (2002) found that projection appeared to be diminished for certain out-group targets. Jones (2004) found similar effects, suggesting that perceived social distance accounts for the difference. Other scholars have shown that the type of relationship between groups matters: a cooperating out-group may evoke more projection than a competing out-group (Riketta & Sacramento, 2008; Toma, Yzerbyt, & Corneille, 2010).

These results highlight that differences – group boundaries, social distance, competition – might draw perceivers away from projection. Some evidence suggests that differences might draw perceivers toward stereotyping. Kunda and Spencer (2003) found that a perceiver's accessibility of target stereotypes appears to diminish over the course of an interaction with a target, but that a disagreement with the target – a reminder of differences – can reactivate the stereotype.

Attempting to account for shifts between stereotyping and projection in mind reading, Ames (2004a, 2004b) built on this prior work to offer a *similarity contingency* model (see also Ames, Weber, & Zou, in press). This model argues that when direct evidence, such as behavior, is ambiguous, perceivers may turn to projection and stereotyping, guided in their use of these templates by their subjective sense of similarity to the target. Ames (2004a) showed that mind readers are inclined to overgeneralize from isolated markers of similarity. Presented with a few similarities to a novel target person (e.g., shared appreciation for a particular comedian), perceivers appeared to engage in widespread projection and reduced stereotyping; perceivers learning about dissimilarities seemingly eschewed projection and embraced their stereotypes of the targets' groups. Other work (Ames, 2004b) found a similar pattern in judgments about groups: Perceivers directed to identify similarities to the group engaged in greater levels of subsequent projection and less stereotyping; perceivers directed to identify differences seemed to shift away from projection and toward stereotyping. Importantly, Ames argued that the subjective sense of similarity was not necessarily closely linked with *actual* similarity. Indeed, his studies found that feelings of similarity and actual similarity between a perceiver and target were at most weakly related, if they were linked at all.

This view of mind readers as shifting between the templates of self and stereotypes presents a more complex account than historical views of the "cognitive miser" (Fiske & Taylor, 1991). A stereotyping view of the cognitive miser suggests that mind readers face the choice between effortful individuation and easy stereotyping. A projection view of the cognitive miser suggests that mind readers face the choice between effortful adjustment and easy anchoring on the self. The similarity contingency account portrays the perceiver as having multiple low-effort mind-reading heuristics – including projection and stereotyping – and shifting between them in predictable ways depending on a (fallible) subjective sense of similarity.

Recent work in social-cognitive neuroscience converges with this view. Mitchell, Macrae, and Banaji (2006) found that different brain regions showed differential activity when making inferences about similar and dissimilar others: mentalizing about similar (vs dissimilar) others appeared to evoke greater activity in the ventral medial prefrontal cortex, a region that has been linked to self-referential thought. In other work, Mitchell, Ames, Jenkins, and Banaji (2009) identified the right frontal cortex as showing heightened activity during stereotyping judgments; this region has been linked with semantic retrieval and categorization. Building on the emerging evidence for multiple tools and tool switching, Mitchell (2009) argued that

> Rather than debating which singular process gives rise to human social abilities, a central aim of social cognition should be identification of the full range of available mentalizing processes and a delineation of the contexts in which one or another is brought to bear on the problem of understanding others (p. 1310).

Initial answers to the "Which tool when?" question have emerged, suggesting when people might shift between routes such as projection and stereotyping en route to reading minds. More refined and elaborate accounts of "Which tool when?" are sure to follow.

Reading via technology

Before concluding our discussion of how perceivers read minds, we want to briefly acknowledge technology-enabled communication as a source of mind reading that has received increased attention in recent years and will likely be a focus of more work in the years ahead. Scholars have begun to explore how people read and misread one another through electronically mediated channels. For instance, Kruger, Epley, Parker, and Ng (2005) found that email recipients have difficulty decoding the tone (e.g., sarcastic or funny) of a message, even though message senders believe their intended signals are exceedingly clear. Other scholars have found that such misunderstandings can compound, with email leading to reduced cooperation and outcomes in negotiation (e.g., Morris, Nadler, Kurtzberg, & Thompson, 2002) and to unproductive escalation of conflicts (e.g., Friedman & Currall, 2003). However, other work shows that electronically mediated communication can yield effective social judgments. For instance, Vazire and Gosling (2004) found that judges reviewing personal websites reached some valid conclusions about the site's creators, including inferences about their openness to experience; the authors argued that these inferences were based on cues in the sites themselves, not simply a product of sex or age stereotypes. While online social networking profiles can be a chance to present an idealized version of oneself, research suggests that perceivers have some ability to separate the wheat from chaff and draw accurate judgments about targets, based on their digital presence (Back et al., 2010).

HOW WELL WE DO IT

In the preceding section, we reviewed a variety of routes everyday mind readers use to get inside others' heads. When it comes to inferential arrows, the folk psychology quiver is hardly empty. But that does not necessarily mean the arrows fly straight or hit their mark. In this section, we address questions of accuracy in mind perception, including how to define it and the extent to which, and the conditions under which, it emerges.

Defining and determining accuracy

Social psychologists have grappled with questions of accuracy in social perception for decades (e.g., Cronbach, 1955; Taft, 1955). We discuss some basic ideas here, drawing in part on more extensive discussions elsewhere that include not only mind perception but also person perception more generally (e.g., Funder, 1995; Gilbert, 1998; Swann, 1984).

As several scholars have noted, accuracy takes variant forms. Both Kruglanski (1989) and Funder and West (1993) suggest that theoretical perspectives of accuracy in social judgment take three basic forms, each with its own unique view of what accurate mind reading entails. The *pragmatic* perspective emphasizes the practical value or utility of a judgment and therefore defines success in terms of the outcome of personal interaction (Jussim, 1991; Swann, 1984). Accurate judgments are those that facilitate performance in the social environment. The *constructivist* perspective often defines accuracy in terms of degree of consensus between observers (Kenny, 1994; Kruglanski, 1989). Many, but certainly not all, researchers who adopt this concept of accuracy consider traits and mental states to be social constructions, not necessarily real characteristics belonging to people (indeed, some philosophers of mind suggest that folk psychological concepts such as "belief" and "desire" are groundless and should be abandoned; e.g., Churchland, 1999). Finally, the *realistic* view of accuracy assumes that, despite their intangibility, mental states and personality more generally are genuine properties of people. Researchers working from this perspective believe one can and should identify criteria against which participants' judgments can legitimately be compared, such as the target's self-rating (Funder, 1995; Kenny & Albright, 1987). Yet another view of accuracy and bias comes from a focus on *inferential processes*, often implying normative views of how judgments ought to be made. From this perspective, perceivers whose social judgments are influenced in ways that they should not be (or are not influenced in ways they should be) are distorted, even if the final judgment cannot readily be compared with a criterion value (Gilbert, 1998).

Even researchers who adopt the same theoretical perspective on accuracy tend to measure mind-reading acuity in their own idiosyncratic ways. Some researchers assess participants' knowledge (e.g., Ickes & Tooke, 1988), some measure their physiological reactivity to a target's experiences (e.g., Levenson & Reuf, 1992), and others are concerned primarily with participants' behavioral responses to a target (e.g., Bernieri, Davis, Rosenthal, & Knee, 1994). Despite the diversity in how accuracy is defined and studied, many – but not all – scholars argue that it emerges less often and less strongly than it should. A significant share of scholarly attention is channeled toward examining biases in mind perception and we

review some of the most-studied culprits in the section that follows.

The dark side of mind reading

People are far from flawless when it comes to perceiving other minds. One domain that highlights the challenge is the detection of others' deception and lying. Research suggests that most perceivers fair little better than chance at detecting others' deception (Bond & DePaulo, 2006). To make matters worse, it appears that perceivers generally have little to no idea about how well or badly they fare in deception detection and other forms of mind reading (e.g., Ames & Kammrath, 2004). We cannot survey the entire literature on mind perception biases here, but we discuss several of the most-studied varieties below.

Misreading the self and misprojection

As they age, children generally outgrow their initial extreme egocentrism, coming to recognize that not everyone shares their religious beliefs, food aversions, or fashion tastes (e.g., Flavell, Botkin, Fry, Wright, & Jarvis, 1968). A wealth of social psychology research suggests we never fully outgrow this egocentrism and that this innate inclination to perceive, understand, and interpret the world in terms of the self compromises the effectiveness with which we perform the task. As discussed earlier, perceivers often use their own mind as a template for understanding other people's minds. *False consensus* refers to people's tendency to overestimate the degree to which other individuals share their beliefs, attitudes, and values (e.g., Ross et al., 1977). This "egocentric attribution" (Heider, 1958) or "attributive projection" (Holmes, 1968) habit leads people to overestimate the prevalence of their own mental states. Although some scholars question whether false consensus really represents a bias (e.g., Dawes, 1989), many regard it as a pervasive distortion in mind perception and numerous explanations have been offered for the effect.

Motivational accounts argue that assumed consensus bolsters confidence and reassures people of the soundness and legitimacy of their attitudes (e.g., Sherman, Presson, & Chassin, 1984). Selective exposure explanations emphasize the fact that people generally eat, work, and socialize with like-minded individuals (Ross et al., 1977). People's beliefs may be biased because they tend to sample their immediate social circles and not a more diverse population when making these estimates (Kahneman & Tversky, 1973). Some scholars suggest the effect is a stubborn byproduct of basic perceptual processes, with perceivers anchoring on themselves despite feedback on their performance and warnings about the bias (e.g., Krueger & Clement, 1994). Other scholarship has identified boundaries, such as research suggesting that egocentric projection biases may diminish when perceivers have more cognitive resources, time for judgment, and incentives for accuracy (e.g., Epley et al., 2004). The similarity contingency model (Ames, 2004a) argues that when perceivers sense dissimilarity to a target, even if the sense of dissimilarity is itself exaggerated or baseless, they may shift away from projection and instead embrace stereotypes, although this shift from one heuristic to another is no guarantee of increased accuracy.

Misreading behaviors and situations

Among the attributional distortions perceivers display, the tendency to overweight dispositional factors (e.g., "He's so kind") and underweight situational determinants ("His mother is watching") when assigning causes to others' behaviors – the *correspondence bias* – continues to be widely referenced and fiercely debated (e.g., Gilbert & Malone, 1995; Jones & Harris, 1967; Malle, 2006; McClure, 2002). From a mind perception perspective, the correspondence bias suggests that perceivers have a tendency to assume a target's actions and outcomes are consistent with, and caused primarily by, their underlying intentions and attitudes ("She's grouchy and dismissive today because she dislikes people, not because her back hurts").

Motivational accounts of the correspondence bias suggest that people are prone to reverse engineer mental causes from behavioral outcomes because this assumption fulfills a basic need to believe that the world is predictable and fair (Gilbert & Malone, 1995). An unfortunate consequence of this desire can be assigning blame to victims and ascribing intentionality to failed attempts and chance occurrences. In contrast, proponents of processing accounts of the correspondence bias argue that this impulse is a consequence of the two-step manner in which people explain behavior. Rather than consider the internal and external causal drivers simultaneously, perceivers first automatically and spontaneously intuit an agent's attitudes and dispositions and then engage in an effortful correction process that acknowledges situational, external causal factors (Gilbert & Malone, 1995; Trope, 1986). Under cognitive load, or even everyday conditions, perceivers may perform this correction process incompletely, if at all.

Although the precise nature of the bias and its underlying mechanisms remain topics of study,

these accounts generally converge on the conclusion that perceivers are often overzealous about assigning internal, mentalistic explanations for others' actions and outcomes.

Expectations, selective perception, and resistance to updating

A wealth of research suggests that mind reading is compromised by perceivers' discomfort with ambiguity, their pre-existing expectations, and the manner in which they collect information and test their intuitive theories about the causal forces behind others' actions (e.g., Roese & Sherman, 2007).

Evidence suggests that one source of inaccuracy in mind reading is the tendency to embellish a single interpersonal interaction or data point to arrive at a coherent impression of someone. The *halo effect* (e.g., Nisbett & Wilson, 1977) refers to perceivers' habit of generating initial, global evaluations (e.g., "She's a good person") and drawing wide-ranging inferences about the individual that are consistent with the evaluation ("She kind, creative, punctual ..."). A principal source of the illusory halo appears to be intuitive theories that perceivers hold about trait/attitude covariance (e.g., Shweder & D'Andrade, 1980). Perceivers' tendency to see other people as either all good or all bad can lead them to overlook the nuances in a target's collection of traits, attitudes, and beliefs.

Social judgment also lends itself to the *confirmation bias,* perceivers' preference for testing hypotheses by looking for confirming instances rather than by seeking both potentially confirming and disconfirming cases (e.g., Ross, Lepper, Strack, & Steinmetz, 1977; Snyder & Swann, 1978). Perceivers tend to overlook highly diagnostic evidence that is disconfirming, are insensitive to negative features, and are often incapable of incorporating data that take the form of nonoccurrences (Nickerson, 1998). A handful of confirmatory "hits" seems sufficient to validate even the most erroneous hunches and people seem resistant to revising or improving their skewed social hypothesis-testing approaches. The notion that people jeopardize their mind reading by tenaciously clinging to their initial beliefs or expectations features prominently in a diverse set of literatures, including research on impression formation (e.g., Carlston, 1980), self-fulfilling prophecies (e.g., Jussim, 1986), stereotyping and prejudice (e.g., Macrae & Bodenhausen, 2000), and implicit personality (e.g., Schneider, 1973).

Taken in their entirety, these findings about biases in mind perception suggest that even the most heroic attempts at mind reading risk being thwarted by perceivers' tendency to put too much faith in initial hunches, to selectively attend to information that is consistent with initially favored hypotheses, to limit themselves to positive hypothesis testing, and to disregard information that challenges the veracity of their expectations and initial beliefs. Put another way, despite the variety of tools perceivers employ, the problem of other minds remains a real problem. In a technical sense, we cannot read minds. And in a practical sense, it appears we often don't.

Not quite so dark

Are everyday mind readers really so faulty? Before we describe work on the conditions that appear to promote or inhibit effective mind perception, we wish to briefly highlight accounts that push back against the characterization of perceivers as largely inept (Krueger & Funder, 2004; Kruglanski & Ajzen, 1983; Swann, 1984). While people and their behavior are sometimes puzzling to one another, perceivers hardly spend their days chronically bewildered by the complicated creatures that share their lives. And while society certainly has troubles and conflicts, somehow billions of people make it through each day unharmed and with their relationships intact, having coordinated their behavior with numerous others.

Critics of the view that people are largely inept at mind reading generally acknowledge that misjudgments have the potential to expose the inference process and that detecting them is therefore key to developing a theoretically rich model for how people interpret and predict their social world. Their concerns center primarily on researchers' willingness to infer fundamental mind-reading inadequacy from misjudgments that are detected in contrived experimental settings. Several researchers (e.g., Funder, 1987; Kruglanski & Ajzen, 1983) have noted a widespread failure to distinguish judgment errors from unequivocal mistakes: whereas the former are deviations from a normative model, the latter refer to something incorrectly done or believed. Funder (1987) contends that narrowly defined misjudgments of artificial stimuli are useful for assessing the validity of the normative model purported to capture the reasoning process. Errors are not in themselves informative about whether people have fundamentally flawed reasoning faculties. And while some errors observed in social inference studies might very well reflect an inherent flaw in a perceiver's mind-reading toolkit, some researchers argue that determining this requires broader criteria than scholars typically employ in their studies. Furthermore, these authors point out that what seems like flawed logic in an experimental setting

may be viewed as sound, if not adaptive, when considered in a broader context (Haselton, Nettle & Andrews, 2005; Hogarth, 1981; Kenny & Acitelli, 2001). Indeed, as we note later in the section on conflict, some kinds of misreading can have benefits.

These critiques suggest a more balanced view of mind perception ability. They highlight the need for studies that consider how deviations from a normative model might be adaptive and suggest that mind perception scholarship can fruitfully advance from multiple vantage points, including the question of "Why aren't mind readers perfect?" as well as the question of "How can people ever read minds at all?" (Krueger & Funder, 2004; Mason & Macrae, 2008).

Better or worse

We now move beyond the question of whether people can or cannot read minds and turn to factors that may account for variance in mind-reading accuracy. We adopt a modified version of Funder's (1995) interpersonal accuracy framework, highlighting three factors that predict mind-reading success: the characteristics of the judge (i.e., good judge), the properties of the target (i.e., good target), and the quality of the data on which the inference is based (i.e., good data).

Good judges

The notion that certain people make more effective interpersonal judgments has a long history in social psychology research (Taft, 1955). In this section, we consider the stable personality characteristics, interpersonal styles, and demographic factors that distinguish "good" and "poor" judges. It is worth noting that, with the exception of research on empathic accuracy (e.g., Ickes, 1993), non-verbal communication (e.g., Riggio, 1986), and emotion reading (e.g., Mayer & Salovey, 1997), most researchers have been concerned primarily with determining who excels at judging stable personality characteristics and not mental states per se. However, one might reasonably expect that the individual characteristics that enable effective trait reading would also promote, or perhaps rely on, effective reading of more transient mental features (e.g., Hall, Andrzejewski & Yopchick, 2009; Ickes, Buysse et al., 2000).

Interpersonal orientation and social sensitivity

Two of the more consistent findings in interpersonal accuracy research are the superiority of those who are interpersonally oriented and those who are socially sensitive. Skilled interpersonal judges tend to exhibit greater interest in the social environment (Riggio & Carney, 2003) and are more open to new experiences (Matsumoto et al., 2000); they are more conscientious and tolerant (Hall et al., 2009) and are generally more communal (Vogt & Colvin, 2003) than less-adept mind readers. Consistent with this notion that astute readers are more attuned to the surrounding social environment is evidence that they tend to be more empathic (Funder & Harris, 1986) and that they score higher on measures of self-monitoring (Ames & Kammrath, 2004). Effective readers also tend to score high on measures of extraversion (Hall et al., 2009) and expressiveness (Riggio & Carney, 2003). Finally, it is worth noting the small but reliably negative correlation observed between interpersonal accuracy and neuroticism, shyness, and depression (Hall et al., 2009).

Intelligence and cognitive style

Some evidence suggests that greater reasoning ability and intelligence are associated with an enhanced capacity for mind reading (Davis & Kraus, 1997; Murphy & Hall, 2011). Why this relationship might exist is not yet fully understood. There is also evidence that certain cognitive styles are associated with greater effectiveness on social judgment tasks. Wood (1980) reported that people who score high on measures of interpersonal cognitive and attributional complexity were more effective with an impression-formation task. In their meta-analysis of predictors of success on social-inference tasks, Davis and Kraus (1997) report finding a strong relationship between participants' performance and measures of cognitive/attributional complexity (see also Fletcher, Danilovics, Fernandez, Peterson & Reeder, 1986). This relationship suggests that people who are motivated to develop elaborate and intricate models of others become more attuned to the idiosyncratic collection of characteristics their subjects possess.

Gender

Gender differences appear to exist in social judgment validity; however, the source of this performance discrepancy is the subject of debate. Several of Hall's studies reveal that women are generally more effective than men at drawing interpersonal inferences (1978, 1984). This gender difference has been observed in young children, across cultures, and is present across face, body, and voice judgments (e.g., McClure, 2000; Rosenthal et al., 1979). There is reason to suspect that these differences reflect varying levels of motivation (e.g., Ickes, Gesn, & Graham, 2000) or experience discussing and reflecting on personal interactions (e.g., Cross & Madson, 1997), rather than innate differences (see, however, Hall, Blanch, Horgan, Murphy,

Rosip, & Schmid-Mast, 2009). In recent work, Klein and Hodges (2001) reported that the initial gender differences they detected disappeared when participants were offered monetary incentives for their performance.

Culture Other work has considered the role of acculturation in mind reading. People commonly communicate their attitudes through facial expressions, gestures, posture, and other body movements (Ekman & Friesen, 1967; Mesquita & Frijda, 1992). While perceivers recognize emotions at better-than-chance levels both within and across cultures, there are cultural variations both in the display of emotions and in the rules perceivers use to decode their significance (e.g., Matsumoto, 1993). Consequently, accuracy is higher when non-verbal manifestations of attitudes are expressed and perceived by members of the same cultural group.

Social habits For some, effectiveness simply comes down to their natural social interaction habits. Whether intentional or not, some interpersonal styles are more likely to elicit disclosure from others (Miller, Berg, & Archer, 1983). Women tend to elicit more disclosure than men and friends tend to elicit more disclosure than strangers (e.g., Rubin & Shenker, 1978). People who express interpersonal warmth and positivity (Taylor, Altman, & Sorrentino, 1969) or who convey interest by establishing eye contact with their interaction partner also tend to elicit more disclosure from others (Jourard & Friedman, 1970).

While the notion that certain individuals are more effective readers seems beyond dispute, it is worth highlighting that cross-paradigm or cross-domain performance correlations are generally quite low. Mind-reading performance in one domain is usually not highly correlated with mind-reading performance in another domain (e.g., Ames & Kammrath, 2004). Thus, while the question of "Who is a good judge?" continues to attract deserved attention, there may be real limits on the extent to which universally good judges exist.

Good targets

The bulk of the existing work on mental state inference focuses on perceiver characteristics that predict accuracy, yet one would expect that validity would also depend on features of the target. Despite the relative paucity of work on who makes a good mind-reading target, the existing research indicates that both the target's *capacity* to express himself or herself and his or her *willingness* to do this affects mind perception outcomes.

Expressivity Expressivity is often defined as the accuracy with which an individual indicates her motivations and needs via emotions (Sabatelli & Rubin, 1986), distinct from emotionality (typically characterized as volatility or fluctuation). Buck (e.g., 1985) has argued that expressive displays evolved to provide "an external readout of those motivational-emotional processes that have had social implications during the course of evolution" (1985, p. 396). In other words, expressions, in the broad sense of the term, are a means by which people provide others access to thoughts and experiences that would otherwise be trapped underneath their skin. To the extent that social exchange partners effectively express their emotional and motivational states, they are better understood, laying the groundwork for effective coordination with others (Zaki, Bolger, & Ochsner, 2008).

Expressivity tends to be higher in people who are talkative and sociable, as is evidenced by its correlation with measures of extraversion (e.g., Kring, Smith & Neale, 1994), in individuals high in self-esteem, and in people with fewer social inhibitions (e.g., Buck, 1979). Expressivity is also associated with a predisposition for anxiety, hostility, or depression, as is evidenced by its correlation with measures of neuroticism (Kring et al., 1994). Several researchers report that women are generally more spontaneously expressive than men (Buck, 1979; Riggio & Carney, 2003). Six-month-old females are both more expressive and more effective at regulating negative emotion states (e.g., irritability) than their infant male counterparts (Weinberg, Tronick, Cohn, & Olson, 1999). Other evidence reveals modest trends in expressivity across the human life span. While older adults more effectively regulate their negative emotions, they are also slightly less expressive than their younger counterparts (Gross et al., 1997).

Importantly, people's spontaneous expression of emotion depends on both the nature of the emotion being communicated, the relationship they have with the recipient of the message, and the interaction of the two. Whereas expressivity is inhibited in the presence of unfamiliar others, it is enhanced in the presence of familiar, or even similar others, though this effect may be strongest when positive emotions are involved (e.g., Buck, Losow, Murphy, & Costanzo, 1992; Wagner & Smith, 1991).

Disclosure A target's capacity to emit expressions with good signal value matters less if he is reticent in revealing his attitudes, intentions, and beliefs: i.e., expressivity is valuable if it accompanies disclosure. One central challenge facing

mind readers is eliciting mental states from their interaction partners (Andersen, 1984). Who tends to be effective at encouraging others to share clues about their desires, beliefs, and feelings?

A number of researchers have reported enhanced interpersonal judgment in familiar vs unfamiliar dyads, an effect that is purported to be at least partially mediated by the amount of information disclosed (Funder & Colvin, 1988; Stinson & Ickes, 1992; Thomas & Fletcher, 2003). When people trust their interaction partner, they are more inclined to reveal information that is diagnostic of their underlying attitudes, intentions, and beliefs. In fact, the most consistent and frequently cited finding regarding the interpersonal effects of self-disclosure is disclosure reciprocity. Countless studies have demonstrated that recipients who are disclosed to respond in kind at a comparable level of intimacy (e.g., Cozby, 1973). Several researchers have tracked patterns of sharing over time between partners, friends, and romantic couples. For example, Taylor (1968) demonstrated a rapid increase in non-intimate disclosures, paralleled by a gradual increase in intimate disclosures over time among new male roommates.

Although these findings suggest that disclosure is determined by relational factors, there are also relatively stable individual differences in self-disclosing behavior (e.g., Berg & Derlega, 1987). Individual variations in self-disclosure manifest in the amount that people reveal, the content of their revelations, and its appropriateness (Cozby, 1973).

Good data

We end the section on mind-reading accuracy with a consideration of the role of data quantity and mental-state visibility in social inference. As one might expect, mind perception validity tends to improve when drawn from a large and relevant sample of behavioral data points.

Acquaintanceship and data quantity Although some scholars suggest that interpersonal accuracy may be nearly as good after brief exposure as after extended experience (e.g., Ambady & Rosenthal, 1992), other evidence indicates that mind reading improves when the target and perceiver have a history of past interactions (e.g., Funder & Colvin, 1988; Thomas, Fletcher & Lange, 1997). Compared to strangers, close acquaintances provide significantly better estimates of both personality traits (Funder & Colvin, 1988; Paunonen, 1989) and transient psychological states (e.g., Stinson & Ickes, 1992). For example, Stinson and Ickes (1992) report that, on average, male friends had empathic accuracy scores that were 50% higher than male strangers, while Thomas and Fletcher (2003) reported improvements in interpersonal accuracy across increasing levels of interpersonal closeness.

What is the source of this acquaintanceship advantage? There is reason to suspect that some of this enhancement reflects a greater willingness among friends to exchange information (Stinson & Ickes, 1992). Others suggest that acquaintances are privy to targets' covert and latent behavioral tendencies and that they utilize this knowledge when drawing inferences about their behavior. From this perspective, extensive experience with a target gives perceivers an opportunity to develop theories about the idiosyncratic beliefs and desires motivating the individual's behavior. Consistent with this latter position is evidence that friends are more effective than strangers at predicting each other's behavior in future and hypothetical scenarios (Colvin & Funder, 1991; Stinson & Ickes, 1992). There is also evidence that the more acquainted a perceiver is with a target, the less their judgment validity depends on the observability of the trait/state in question (Paunonen, 1989).

Visibility Research on personality inference suggests that trait visibility (i.e., observability) is an important determinant of judgment accuracy (Funder & Colvin, 1988; Hayes & Dunning, 1997; see Vazire, 2010). Traits that are associated with observable behaviors (e.g., extraversion) are more reliably judged than traits characterized by private thought patterns (e.g., neuroticism; Vazire & Gosling, 2004). While limited work has focused on mental-state visibility, the trait inference literature clearly suggests that mental states that manifest in visible behaviors will be more accurately judged.

WHERE WE DO IT

Thus far in this chapter, we have reviewed the various inferential tools perceivers appear to use to read minds. We have also described shortcomings in mind perception and factors that seem to promote or inhibit judgment validity. We turn now to several domains in which mind perception comes to life – in effect, discussions of *where* we do it. In most cases, these domains map on to academic literatures that may not be focused on mind perception per se, but that hold insights for the psychology of mind perception and that also beg to be informed by mind perception scholarship. We begin with culture, and then move on to intergroup relations and conflict.

Culture

Is mind perception the same across cultures? The question is a fundamental and important one because the answer can clarify whether, how, and when mind perception draws on innate modules that are fundamental, universal, hard-wired parts of human psychology as well as culturally informed folk theories, representations, and values. Accounts differ, but most scholars acknowledge layers of similarities and differences (e.g., Ames, Knowles, Rosati, Morris, Kalish, & Gopnik, 2001; Lillard, 1998). It appears that perceivers in virtually all cultures (a) see others as having mental lives and (b) are guided in their everyday interactions by inferences about others' minds. However, differences exist in dimensions such as the extent to which private mental lives are discussed publicly, in the folk ontologies used to describe and distinguish between mental contents, and in the ways in which intentions are ascribed to others (e.g., Lillard, 1998; Mason & Morris, 2010). We discuss some of these differences in the sections that follow (see Chapter 22, for additional discussion of culture).

Situationism

As noted earlier in our discussion of the correspondence bias, considerable work suggests that perceivers tend to explain a target person's acts in terms of the target's underlying attitudes and dispositions, often overlooking or underweighting situational factors. However, the classic evidence for these effects comes from Western studies (e.g., Jones & Harris, 1967); evidence that has emerged from other cultures in the past few decades suggests a somewhat more complicated picture. Consistent with the view that self and other construal differences predispose members of interdependent cultures to consider social-relational causes of action, Miller (1984) demonstrated that East Asians are more inclined to view actions as arising from social contexts than Westerners. The diminished tendency of East Asians to draw on dispositional factors and their enhanced reliance on social contextual factors when constructing explanations for other people's behaviors has subsequently been replicated by a number of researchers (e.g., Knowles, Morris, Chiu, & Hong, 2001; Miyamoto & Kitayama, 2002; Morris and Peng, 1994; see, however, Krull et al., 1999).

This relatively recent research suggests that mind perception is partly rooted in intuitive lay beliefs that people have about the causes of behavior (Heider, 1958). From this perspective, different cultural conceptualizations of self, other, and self–other relationships are thought to promote different intuitive lay beliefs about agency. In turn, such differences lead to discrepancies in how a given behavior is interpreted by members of different cultures. Although cultural belief systems have thus been implicated in behavior interpretation and mind perception, this does not mean the process is necessarily explicit or effortful. In recent years, a number of scholars have argued that these effects can unfold spontaneously (e.g., Maass et al., 2006), with cultural differences emerging most strongly when need for closure is high (e.g., Chiu, Morris, Hong, & Menon, 2000), and perceived cultural consensus around belief systems is substantial (e.g., Zou et al., 2009). A challenge for future researchers is to determine whether attribution differences reflect greater situational correction, more automatized situational correction, or a greater likelihood of anchoring on situational causes by members of interdependent cultures (e.g., Knowles et al., 2001; Mason & Morris, 2010).

Routes to mind reading

Perceivers in different cultures may have different material to work with and may take different routes to drawing inferences about others' minds. Anthropologist Edward Hall (1976) distinguished between low- and high-context cultures: individuals in the former trade messages that are more direct, explicit, and openly confrontational, whereas individuals in the later communicate less directly, variously through allusion, silence, and reliance on contextual cues (see also Ting-Toomey, 1985). Some research shows, for instance, that US negotiators rely more heavily on direct information-sharing strategies, conveying priorities and interests explicitly, whereas Japanese negotiators rely more on indirect strategies (Adair, Okumura, & Brett, 2001). Matsumoto and colleagues (e.g., 2008) have found that members of collectivist cultures show a greater tendency to mask emotional expressions, following more discrete cultural "display rules" for expressivity. Thus, some cultures appear to provide more direct behavioral evidence for mind readers; in other cultures, perceivers may turn to other inferential routes. Evidence of these inferential shifts is beginning to emerge. For instance, Wu and Keysar (2007) recently found that members of interdependent cultures seem more inclined to spontaneously adopt a counterpart's perspective, suggesting a readiness to see things from another's point of view without having to hear or observe more overt or behavioral evidence.

Intergroup relations

Mind perception often occurs, or has the potential to occur, in the context of intergroup relations.

One important dynamic that can emerge in such cases is the denial of fully human mental experiences and capacities, often in the case of out-group member perception (e.g., Harris & Fiske, 2009; Haslam, 2006). The stakes for how people mentalize groups – or resist mentalizing them – are considerable: Conceiving of others as lacking humanness weakens commitments to moral strictures and norms of fairness; diminishes a sense of responsibility, remorse, and guilt for transgressions; unfetters aggression and discrimination; allows people to justify oppressive and violent acts; and bolsters a sense of personal superiority (e.g., Bar-Tal, 2000; Bar-Tal & Teichman, 2005; Castano & Giner-Sorolla, 2006; Cehajic et al., 2009; Opotow, 1990; Staub, 1989). In recent years, scholars have distinguished various forms of dehumanization and infrahumanization. These different dynamics vary in their implications for mind perception and we briefly discuss each in turn in the sections that follow.

Dehumanization

Haslam's (2006) theoretical framework distinguishes between animalistic and mechanistic dehumanization. Dehumanization takes an *animalistic* form when targets are denied uniquely human characteristics (e.g., intelligence, moral sensibility, sophistication) or the qualities that distinguish them from other animals. Animalistic dehumanization is associated with feelings of disgust and revulsion in the perceiver, and often elicits feelings of shame in the target (e.g., Hodson & Costello, 2007). Targets of animalistic dehumanization tend to be seen as acting from obtuseness or to satisfy some appetitive demand. This form of dehumanization seems particularly prevalent in racial and ethnic conflicts and captures discrimination towards people with cognitive disabilities (O'Brien, 2003).

Dehumanization takes a *mechanistic* form when targets are denied the qualities that define the core of the human concept (e.g., warmth, flexibility, individual agency) or the qualities that distinguish them from robots, tools, or machines (e.g., Montague & Matson, 1983). Targets are perceived as fungible, dependent, lacking agency, cold and emotionally void, and tend to elicit indifference and ambivalence in the perceiver. This form of dehumanization is perhaps best exemplified by the objectification of women (e.g., Cikara, Eberhardt, & Fiske, 2010; Fredrickson & Roberts, 1997).

Infrahumanization

In the last generation, scholars have focused increased attention on *infrahumanization*, a more subtle and prevalent form of dehumanization that involves denying others "secondary emotions" (e.g., pride, contentment) and prosocial sentiments (e.g., empathy, compassion; Demoulin et al., 2004; Leyens et al., 2000). Emotion researchers distinguish between two basic types of emotions. *Primary emotions* are assumed to exist in all cultures, to have both ontogenetic and phylogenetic primacy, to serve a biological function, and to be experienced by other animals (e.g., Izard, 1977). *Secondary emotions*, in contrast, are uniquely human, developed through the socialization process, and are generally less intense and reactive than primary emotions (e.g., Leyens et al., 2000).

People may accept or reject others through the attribution or denial of secondary emotions (e.g., Fiske, Xu, Cuddy, & Glick, 1999; Leyens et al., 2003). Consistent with this notion, a number of recent studies reveal that people attribute more secondary emotional experiences to in-group than out-group members (e.g., Gaunt, Leyens, & Demoulin, 2002). Importantly, this reluctance to ascribe to others secondary emotional experiences appears to have important behavioral consequences and implications for interpersonal exchange (e.g., Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003).

Animalistic dehumanization, mechanistic dehumanization, and infrahumanization each hold implications for mind perception, especially in intergroup settings. Perhaps most obvious is the ontology of mental contents and processes denied to group members: animalistically dehumanized groups may be seen as void of moral values and reasoning; mechanistically dehumanized groups may be seen as void of agency and will; and infrahumanized groups may be seen as void of pride. But just as some mental processes are de-emphasized in these intergroup perception dynamics, other processes may be highlighted and govern how groups are expected to act and react and, accordingly, how they are treated. If group members are seen as animals or lesser humans whose behavior is driven by fear, they may be treated in ways designed to intimidate or terrify them. If group members are seen as obedient, non-agentic tokens whose behavior is a relatively mindless product of an ideology, then harming any (interchangeable) member may seem like an option for attacking the ideology.

Re-minding

An open question is to what extent these dynamics can be overridden or counteracted – whether dehumanized groups can be "re-minded." Evidence suggests that, on the one hand, manipulations that encourage people to reflect on a target's mental

state or to individuate him/her diminish the effects of dehumanization (e.g., Haslam & Bain, 2007; Lederach, 1997). Preliminary evidence also suggests that these biases attenuate with increased exposure to out-group members (e.g., Harwood, Hewstone, Paolini & Voci, 2005). However, it is worth noting that manipulations that remind people of in-group responsibility or prompt people to experience collective guilt can have the unfortunate consequence of increasing victim infrahumanization (e.g., Cehajic et al., 2009).

Conflict

Conflicts – between nations, groups, and individuals – frequently turn on the perception of intentions and other mental states. Effective conflict resolution often involves parties achieving some accurate, or at least different, understanding of one another's mental states. A growing body of research has revealed the processes by which mind perception unfolds in conflict as well as its fallibility. We survey some of these accounts and results here.

Projection

As noted earlier, people display a seemingly widespread impulse to project their own mental states onto others. Situations of conflict are no exception. In the domain of close relationships, scholars have shown that spouses tend to project their own emotions onto one other during conflict interactions (e.g., Papp, Kouros, & Cummings, 2010). In the domain of social dilemmas and strategic games, researchers have found a tendency to project one's own expectations and intentions onto others (e.g., Acevedo & Krueger, 2005; Ames et al., in press). Negotiation scholars have documented a seemingly widespread "fixed pie" bias, whereby negotiators tend to project their own interests and priorities onto their counterparts, readily assuming situations are zero-sum when opportunities exist to satisfy both parties (e.g., Pinkley, Griffith, & Northcraft, 1995). In research on negotiations, Bottom and Paese (1997) demonstrated that, in the absence of stereotypic or individuating information, negotiators tended to assume that other parties shared their own preferences, an inference leading to fixed pie assumptions and suboptimal settlements.

Assumed malice and bias

Social projection in conflict and elsewhere may flow in part from a perceiver assuming she or he sees things as they "really are" and further assuming that if someone else were facing the same situation, that person would see the same thing. Ross and colleagues (Ross et al., 1977) observed as much in their seminal work on false consensus. More recently, this "naïve realism" account has been applied to conflict situations and extended to capture perceptions of bias (e.g., Pronin, 2007; Robinson, Keltner, Ward, & Ross, 1995; Ross & Ward, 1996). If a perceiver assumes she sees a disputed situation as it really is, she might assume other reasonable onlookers would see the same thing; if another party sees something different, her reasoning would suggest that they are biased. A number of studies have documented such effects, showing that disagreements can lead to ascriptions of self-interested motives and bias (e.g., Reeder, Pryor, Wohl, & Griswell, 2005). Kennedy and Pronin (2008) showed that these perceptions of bias can fuel conflict, leading parties to make conflict-escalating responses that in turn prompt counterparts to perceive bias.

Another tradition of work has examined the role of hostile attribution biases as a factor in conflict and aggression. Growing out of developmental research on aggression in children (e.g., Dodge & Crick, 1990), this work suggests that ascribing hostile intentions to others is a potent precursor to anger, aggression, and retaliation. Research in this vein also suggests that aggressive individuals may be especially prone to attribute hostile intentions to others (Dill, Anderson, Anderson, & Deuser 1997; Epps & Kendall, 1995). This research on interpersonal aggression converges with a stream of work on cognition in social dilemmas. There, Kelley and Stahelski (1970) proposed a triangle hypothesis to account for how cooperative and competitive players ascribed cooperative and competitive intentions to counterparts. The researchers found support for their prediction that cooperative players anticipate greater variance in counterpart intentions, whereas competitive players are more inclined to expect competitive intentions – a notion that has received additional support and attention in recent work (e.g., Van Lange, 1992).

Plous (e.g., 1993) offered a mind-reading take on social dilemmas in his formulation of the "perceptual dilemma." Such a condition arises, he argued, when both sides in a dilemma prefer a mutually cooperative outcome but assume each other prefers unilateral dominance, thereby adopting what seems like an appropriate position of defensive hostility (see also Ames et al., in press). Plous argued that the post-World-War-II nuclear arms race between the United States and the former Soviet Union was essentially a perceptual dilemma, with each side misreading the other's preference. The ascription of malice to a conflict counterpart shapes choices, even though it

might be unwarranted – and once embraced, these beliefs about a counterpart's sinister objectives and preferences may be very hard to change.

Perspective taking

In conflict and negotiation, people are often egocentrically biased (e.g., Babcock & Loewenstein, 1997), which can lead to the fixed pie bias, impasses, and foregone opportunities for effective solutions. Does explicit, effortful perspective taking improve matters? Galinsky, Maddux, Gilin, and White (2008) suggest that it does, finding that negotiators instructed to take their counterpart's perspective were better able to discover hidden agreements and to claim value in negotiations. Work by Epley, Caruso, and Bazerman (2006) highlights that perspective taking may carry costs as well. They found that taking the perspective of other parties in a conflict altered perceptions: those who looked at things from others' points of view had less self-serving assessments of what a fair outcome or allocation for themselves would be. However, the authors found that this did *not* improve cooperation in the situations they studied, such as a commons dilemma featuring a scarce resource (Epley et al., 2006). Those who considered others' points of view tended to assume that others would behave in a self-serving fashion, so they themselves raised their defenses, attempting to claim more resources and acting more competitively. As the authors put it, perspective taking led to taking.

The benefits of misreading

Under some circumstances, there may be advantages to misreading counterparts in conflict. Overlooking or discounting a counterpart's negative cognitions can avoid an unproductive spiral of conflict; treating an ambivalent or unsympathetic party in a cooperative fashion could spark a constructive self-fulfilling prophecy. Along these lines, in the domain of relationship research, Srivastava and colleagues (Srivastava, McGonigal, Richards, Butler, & Gross, 2006) found that optimists in romantic relationships perceived greater support from their partners during a conflict and reported higher levels of relationship satisfaction. This converges with earlier work by Simpson, Orina, and Ickes (2003) showing that, in conflict conversations, spouses who fared worse at reading their marriage partner's relationship-threatening cognitions felt closer to their spouses – though the researchers also found that accurate reading of non-threatening cognitions also promoted closeness. In their work on the hostile attribution bias, Epps and Kendall (1995) remarked on a similar effect, finding that non-hostile perceivers tended to ignore hostile cues, concluding that, "Adjustment, in some cases, may be associated with distorted, albeit healthy, information processing ..." (p. 175). In the case of conflict, certain kinds of mind-blindness may foster better outcomes.

CONCLUSION

Most of us deal with dozens of other people each day – at work, in traffic, at home, at the store – and yet most days do not end in catastrophe. Given the incredible range of behavior people are capable of producing, and the complicated interactions we often enter into, this is in many ways remarkable. To pull this off, people often find ways to get inside one another's heads to read their intentions, beliefs, desires, and feelings. Strictly speaking, perceivers cannot do this. And yet they seem to manage well enough to get by. When things do go awry – such as unconstructive conflicts – some form of misreading minds is often involved.

As we close, we want to clarify that mind perception does not itself equal the totality of social experience and interpersonal relations. Perceivers navigate parts of the social world without judging, or needing to judge, what is at work in others' minds. For instance, work on social scripts (e.g., Schank & Abelson, 1977) has revealed how knowledge structures inform interactions. In some cases, we do not need to ascribe an entire internal mental world to a counterpart in an interaction; we just need to know what comes next. We can get through some routinized exchanges – such as buying the morning coffee – without having to bother with the problem of other minds. And yet much of life is off-script and much of what we see from others is, on the face of it, subtly puzzling. We often make sense of what's happening in our social worlds, and what will happen next, by ascribing invisible mental properties to the actors around us. What are they thinking, we wonder? And what will they think of next?

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