Social Cognition

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Summary and Keywords

Contemporary models of how the mind operates and methods for testing them emerged from the cognitive revolution in the middle of the 20th century. Social psychology researchers of the 1970s and 1980s were inspired by these developments and launched the field of social cognition to understand how cognitive approaches could advance understanding of social processes. Decades later, core social psychology topics, such as impression formation, the self, attitudes, stereotyping and prejudice, and interpersonal relationships, are interpreted through the lens of cognitive psychology conceptualizations of attention, perception, categorization, memory, and reasoning. Social cognitive methods and theory have touched every area of modern social psychology. Twenty-first-century efforts are shoring up methodological practices and revisiting old theories, investigating a wider range of human experience, and tackling new avenues of social functioning.

Keywords: social cognition, person perception, impression formation, social categorization, social attention, social perception, mentalizing, face processing

Introduction

The study of social cognition examines how individuals process and represent information about other people, themselves, and socially constructed events (Fiske & Taylor, 2013; Hamilton, 2005). Modern social cognition research has many influences, but as is evident by the equal footing given to “social” and “cognition” in the discipline’s name, the primary focus is at the intersection of social psychology and cognitive psychology. The research paradigms and theoretical models of how the mind operates are mostly derived from cognitive psychology. However, the topics of social cognition largely fall within social psychology.

To appreciate how social cognition straddles its main parent disciplines, imagine that you are looking at a tree versus a person standing next to that tree. Although both instances of perception involve encoding and representing information about objects that are external to the perceiver, perceiving people involves added complexity. A tree, as is the case with most non-social objects, is largely predictable. If you can estimate wind speed and the firmness of the branches, you know how much the branches will sway. If you yell in

the direction of the tree, you know with complete certainty that it will stay rooted in the ground and not attack you. People, on the other hand, are agents in their environments. As a result, they can modify their behavior to influence how you perceive them. They can perceive you back and act in ways that affect your well-being. They can form alliances, propagate beliefs and attitudes, set norms for behaving, wage war, and create institutions that codify the social order. Thus, social cognition research goes beyond standard cognitive conceptualizations because understanding people (and other animate objects) involves considerations that are less frequent (or entirely absent) when processing non-social objects (Ostrom, 1984).

The field of social cognition gained traction within social psychology in the late 1970s and early 1980s. Early proponents were social psychologists who applied emerging cognitive models of information processing and mental representation to understand impression formation, causal attribution, and stereotyping (Fiske & Taylor, 1984; Hastie et al., 1980). The value of the cognitive approach to understand social phenomena was quickly recognized by other social psychologists and ideas spread to additional topic areas, such as attitudes, personality, the self, and close relationships. Over the years, social cognitive concepts, and relatedly the ontological commitments of social cognitive research, have been transformed by considerations of constructivism (Balcetis & Dunning, 2006; Bruner, 1957), functionalism (Cosmides, 1989), heuristics (Tversky & Kahneman, 1974), automaticity (Bargh, 1994), and the interplay of affect, cognition, and motivation (Gollwitzer & Moskowitz, 1996; Isen, Daubman, & Nowicki, 1987; Zajonc, 1980). Most contemporary research in social psychology, even if not overtly focused on understanding information processing and mental representation, uses paradigms and theories that emerged from the social cognition tradition.

The social cognition literature is now voluminous. It not only spans social and cognitive psychology, but also includes developmental, clinical, health, evolutionary, and neuroscience perspectives. This overview focuses on a subset of major findings and perspectives, mostly social psychological contributions and their cognitive psychology influences. For additional coverage and viewpoints, interested readers should consult the various social cognition handbooks (Banaji & Gelman, 2013; Carlston, 2013; Fiske & Macrae, 2012; Wyer & Srull, 1984, 1994), readers (Hamilton, 2005), and textbooks (Augoustinos, Walker, & Donaghue, 2014; Fiske & Taylor, 2013; Kunda, 1999; Moskowitz, 2005).

Attending to the Social World

A core tenet of social cognition is that people do not perceive objective reality, but instead make sense of mental representations of the objects and people they encounter (Carlston, 2013; Fiske & Taylor, 2013). This occurs because people are not capable of processing all the information that is available to them. Preexisting knowledge structures, affect, and motivational forces influence attentional mechanisms to determine which information reaches the mind and is prioritized for processing. As a result, attention mediates our social reality.

For much of our daily lives, attention is oriented internally to access feelings and thoughts. Internally focused attention and processing is thought to be so prevalent that it is often referred to as the "default mode." Functional neuroimaging has characterized a network of brain regions that are engaged when people are ostensibly at rest and not preoccupied with externally imposed tasks (Raichle, 2015). Such inward focus results in an awareness of the self and gives rise to an ongoing stream of consciousness (Duval & Wicklund, 1972; Kihlstrom & Klein, 1997; Smallwood & Schooler, 2015). By attending to the self, people can compare their internalized standards to their current circumstances and modify behavior accordingly (Carver & Scheier, 1982; Higgins, 1987). Attending to one's own thoughts also allows people to mentally escape the immediate situation, reflect on the past, and prospect about the future (Liberman & Trope, 2008; Markus & Nurius, 1986; Newby-Clark & Ross, 2003; Schacter, Addis, & Buckner, 2007).

Attention shifts externally when people need to make sense of the environment around them. Several factors make some social stimuli grab more attention than others. Consistent with intuitions, people directly in front of a perceiver are noticed more than those on the outskirts (Taylor & Fiske, 1975). Low-level attributes, such as vivid colors, complex patterns, and motion, all make people stand out (McArthur & Post, 1977). Other forms of perceptual novelty, such as being the only person of one's race or gender in a group, draw attention by increasing salience (Kanter, 1977; McArthur & Post, 1977; Wolman & Frank, 1975). Beyond attributes of the stimulus and the immediate context, a perceiver's expectations and goals can drive attention. For instance, individuals who behave in counterstereotypical or other unexpected ways are likely to receive more perceptual scrutiny (e.g., Hilton, Klein, & von Hippel, 1991). People who are goal relevant, such as bosses, romantic partners, and coalitional allies, receive more processing resources than others (Berscheid, Graziano, Monson, & Dermer, 1976; Van Bavel, Packer, & Cunningham, 2008). However, attention is not always fixated on goal-relevant targets. Social norms to avoid looking at higher-status individuals or taboo stimuli can cause perceivers to avert their gaze (Gobel, Kim, & Richardson, 2015; Wu, Bischof, & Kingstone, 2014). This occurs because eye gaze not only facilitates the encoding of information, but also communicates to others what is capturing attention.

People are able to dynamically shift attention between internal sources, such as their beliefs and attitudes, and the many sensory cues in the external world. White and Carlston (1983) detailed how people use existing knowledge to prioritize which sensory information receives attention during social situations. They found that perceivers first test whether their assumptions about what they are encountering are applicable to the present situation. For instance, if a perceiver has the assumption that "Brian is honest" then the perceiver's first task when attending to Brian is to determine whether this assumption is valid. If the preconceived notion of Brian as honest is deemed appropriate, perceivers are freed from attending carefully to what Brian says and does because expectations of how honest people act can be used to fill in the blanks. Instead, the majority of attention can shift to novel information that cannot be easily inferred from preexisting beliefs. In this example, attention can mostly shift away from Brian and toward another person in the scene of whom the perceiver lacks a preexisting belief. In this way, more

knowledge can be added to the perceiver's internal representation of the situation. However, because situations can change over time, people are constantly allocating some attention to monitoring inconsistencies between expectation-consistent sources and bottom-up information. If, when monitoring honest Brian, for instance, a discrepancy is detected (e.g., he tells a lie) then perceivers shift the bulk of attention back to Brian for further processing.

Although the reliance on expectations to guide attention greatly reduces the computational demands of processing complex social information and is largely adaptive, an unfortunate consequence is that people who start from different beliefs or are motivated to see the world from opposing perspectives are likely to expose themselves to different pieces of information (Ditto & Lopez, 1992; Kunda, 1990; Lord, Ross, & Lepper, 1979). As a result, a false consensus effect can emerge, where people believe that their perspective is more widely held than is actually the case (Ross, Greene, & House, 1977). Moreover, when people are faced with evidence that other people do not see the world as they do, research on naive realism suggests they are likely to believe that their perceptions are veridical and others are biased (Griffin & Ross, 1991). Further entrenching preconceived notions is the reality that more disconfirming information is needed to convince someone that their belief is incorrect than confirming information is needed to convince someone that their belief is correct (Darley, Fleming, Hilton, & Swann, 1988). Many social conflicts and misunderstandings are rooted in divergent social realities that in part begin with biases in attention.

Perceiving Faces and Bodies

Eye tracking research indicates that people fixate more on conspecifics than other objects in complex scenes (Birmingham, Bischof, & Kingstone, 2009). This special interest in people is observed throughout development. Within two months after birth, infants focus attention on the eyes and mouth of other people and show distress when an interaction partner ignores them (Johnson & Morton, 1991; Striano & Reid, 2006). At around six months, infants are able to discriminate facial expressions (Nelson, 1987). At around a child's first birthday, they demonstrate social referencing, such as using emotional cues from a parent to know whether to approach or avoid an object (Feinman, Roberts, Hsieh, Sawyer, & Swanson, 1992). These skills set the stage for theory of mind, coordinating behavior with others, and forming a shared understanding of the world (Hardin & Higgins, 1996; Leslie, Friedman, & German, 2004; Shteynberg, 2015; Smith & Mackie, 2016; Todd, Cameron, & Simpson, 2017).

Faces are an especially rich source of information about another person (Zebrowitz, 1997). Skin on the face can reveal health, fertility status, gender, attractiveness, and race (e.g., Johnson, Freeman, & Pauker, 2012; Jones et al., 2015; Tskhay, Clout, & Rule, 2017). Facial muscle movements, such as a furrowed brow, a flared nostril, and pursed lips combine to form expressions associated with various emotions and mental states (Ekman, 1993). Facial structures tend to differ across ethnicities, racial groups, and sexes and

change as people mature. As a result, facial structures are often used for individuating people and categorizing them according to social groups (Hugenberg, Young, Bernstein, & Sacco, 2010; Zebrowitz, 1997). When facial structures resemble the form of specific emotional expressions or the size and shape of various features are prototypical of a certain developmental stage, perceivers will exhibit overgeneralization effects (Engell, Todorov, & Haxby, 2010; Knutson, 1996; Zebrowitz, Kikuchi, & Fellous, 2010). For instance, adults with “baby faces” characterized by eyes that are large in proportion to the rest of the face, small rounded chins, large foreheads, and thin eyebrows will be perceived as having child-like qualities, such as naivety, trustworthiness, kindness (Zebrowitz & Montepare, 2008). Facial cues are thought to provide perceivers with affordances of how best to act toward the person who is being perceived (McArthur & Baron, 1983).

As far as features, the eyes are especially informative in humans. Perceivers carefully follow the gaze direction of the people they are processing. When another person looks directly in your eyes, you more readily identify facial expressions that communicate approach-oriented emotions (e.g., anger and joy). On the contrary, if a person in front of you averts his or her gaze then you more readily infer avoidance facial expressions (e.g., fear and sadness; Adams & Kleck, 2003). The high contrast between the white sclera and the relatively dark iris and pupil in humans reveals where a person is looking, which makes eye gaze an important factor in social communication and cheater detection (Kobayashi & Kohshima, 2001; Tomasello, Hare, Lehmann, & Call, 2007). The blink rate of the eyelid and the dilation of the pupil can also indicate intensity of focus and also anxiety (Kahneman & Beatty, 1966; Siegle, Ichikawa, & Steinhauer, 2008).

Although the eyes are critical for social perception, perceivers process faces holistically to simultaneously take advantage of all the cues in the face (Rhodes, Tan, Brake, & Taylor, 1989). The efficiency of encoding faces in a holistic instead of piecemeal fashion likely allows perceivers to rapidly and effortless extract social inferences from faces (Rule & Ambady, 2008; Willis & Todorov, 2006). Due to the importance of face processing for social interactions, problems with holistic face processing that characterize prosopagnosia and difficulties in reading mental states from faces that are common in people with autism spectrum disorder can be very stressful and debilitating (Spezio, Adolphs, Hurley, & Piven, 2007; Susilo & Duchaine, 2013).

In addition to focusing on facial cues, perceivers readily use bodily form and movements to infer gender, emotion, personality, friend or foe, strength and fighting ability, and other social attributes (Cutting & Kozlowski, 1977; Heberlein, Adolphs, Tranel, & Damasio, 2004; Johnson, McKay, & Pollick, 2011; Runeson & Frykholm, 1983; Sell et al., 2009). Bodily cues can also provide important contextual information when inferring meaning from faces. The same facial expression can be perceived differently depending on bodily posture (Aviezer et al., 2008). When intense emotions render positive and negative facial expressions difficult to discriminate, the body can be the most diagnostic cue of experienced emotion (Aviezer, Trope, & Todorov, 2012). Given that the face and body often communicate thoughts and emotions, it is not surprising that perceivers attend to this infor-

mation to make inferences about other people’s unobservable minds and predict their actions.

Categorization Imbues Social Information with Meaning

Just as color information spans a range of wavelengths that are effortlessly divided by the mind into discrete meaningful categories (e.g., red, orange, yellow), social information can be effortlessly chunked into meaningful categories (e.g., young/old, male/female, Black/White; Ebner, 2008; Ito & Urland, 2003; Macrae & Bodenhausen, 2000). Sensory information needs to be mapped to conceptual information for social perception to occur. The accessibility of the concepts that guide our perception in any given moment depend on our motivations and attitudes (Balcetis & Dunning, 2006; Bruner, 1957; but see Firestone & Scholl, 2016).

Often the same individual can be categorized as an individual and a member of a group. Brewer’s (1988) Dual-Process Model of Impression Formation and Fiske and Neuberg’s (1990) Continuum Model are the dominate perspectives for explaining when we form group-based or person-based representations of individuals. All else being equal, perceivers first attempt to categorize a target person as a group member because this allows us to use preexisting knowledge structures to guide our perception. However, if bottom-up information does not fit with our social category representation then we attempt to fit the individual into a subgroup, which is a set of group members that share the individual’s attributes. If this further proves untenable then the target will not be viewed according to a group membership and will be perceived as a unique individual. Whether a person is categorized as a group member or individual can have downstream consequences for how they are treated, as perceivers often bestow advantages to fellow group members (i.e., in-groups), but disregard and sometimes dehumanize people of other groups (i.e., out-groups; see Brewer, 1999; Haslam & Loughnan, 2014).

Categorization not only influences how we view other people, but factors into how we construe ourselves (Linville, 1985). Research has shown strong overlap between our representations of our in-groups and self-representations (Brewer & Gardner, 1996; Smith & Henry, 1996). Because people stake their identities in their in-groups, whether we categorize ourselves based on our group identities is thought to influence our self-esteem and is a motivating force in how we behave toward in-group and out-group members (Tajfel & Turner, 1986). Moreover, because race and ethnicity are often key to how we self-identify and how others categorize us, how central our race and ethnic identities are to our sense of self can influence how much we are bothered by prejudice and discrimination (Sellers & Shelton, 2003). To mitigate potential self-threats, we can de-identify from devalued group memberships or label people who disparage our groups as bigoted (Crocker & Major, 1989). Competing desires to have others view us as unique but also as part of a group results in striving for optimal distinctiveness. This is characterized by most strongly categorizing oneself as part of a group that allows us to feel included but also distinct enough

from other groups to feel unique (Brewer, 2003). Uncertainty reduction and self-enhancement motives can also influence how readily a person identifies as a member of a social group (Hogg, 2007; Reid & Hogg, 2005). Beyond the influence of proximal considerations (e.g., features of the situation or group dynamics), culturally transmitted values of independence versus interdependence can bias individuals to use individuating or collective identities to categorize the self (Markus & Kitayama, 2010).

Memory Binds Social Knowledge to the Present

When we consider perception of self and others as involving categorization, it becomes clear that when we encounter new people and situations we typically do not start from scratch when making sense of them. We bring to mind knowledge that we acquired in the past. That knowledge is stored in memory. In fact, the relevance of early cognitive psychology models of memory to understand social psychological topics is what inspired a dedicated group of young social psychologists interested in social perception to rebuild social psychological conceptions of the mind along cognitive psychology lines. These founding machinations of social cognition were described in a book titled *Person Memory: The Cognitive Basis of Social Perception* (Hastie et al., 1980), and to date one of the main academic meetings for social cognition retains the name “Person Memory Interest Group” even though social cognition research has expanded beyond understanding memory mechanisms.

Much early person memory research focused on how information about people, their attributes, their roles in society, and their social relations are stored in memory and retrieved. Popular associative network models in cognitive psychology (e.g., Anderson, 1976; Collins & Loftus, 1975) provided a useful framework. Within the social cognition literature, the nodes in associative network models in the early 1980s were largely symbolic in that each node mapped on to a concept (e.g., Dave, kind, honest, accountant). However, there were debates in cognitive psychology about how best to represent these networks (e.g., Rumelhart, McClelland, & Group, 1986). Out of these debates, connectionist models emerged that tend to represent nodes as not carrying concrete meaning alone, but that represent meaning as emerging from the relative weighting and activation of connected nodes. Several social psychologists have attempted to understand attitudes, categorization, and impression formation according to connectionist frameworks (Freeman & Ambady, 2011; Kunda & Thagard, 1996; Smith, 1996). However, the complexity of such models has hindered a widespread application of this connectionist perspective beyond the recognition that nodes are probably best represented as distributed. Twenty-first-century advances in artificial intelligence and neural networks (e.g., Isik, Mynick, Pantazis, & Kanwisher, 2020; Kragel, Reddan, LaBar, & Wager, 2019) have the promise of reinvigorating conceptualizations of distributed memory representations in social cognition.

One of the lasting legacies of the associative network model is that it provides an intuitive mechanism for priming. Priming is the idea that activating one concept in memory will fa-

cilitate the activation of related concepts. In a classic study, Higgins, Rholes, and Jones (1977) found that priming participants with trait words would influence how the participants interpreted an ambiguous description of a protagonist named Donald—if the primed trait was in some ways relevant to the description. Devine (1989) showed the societal significance of priming. In one of her studies, participants who were non-consciously primed with stereotypes of African Americans as hostile rated an ambiguous passage about Donald's behavior (the same Donald from Higgins et al., 1977) as more hostile. Later, Bargh proffered the intriguing hypothesis that social behavior could be primed (Bargh, Chen, & Burrows, 1996). This work inspired a lot of studies that made claims about nonconscious mental processes, such as priming "professor" could make people perform better on an intelligence test (Dijksterhuis & van Knippenberg, 1998). However, the possibility that behaviors can be primed in these ways received a lot of scrutiny in the 2010s (e.g., Doyen, Klein, Pichon, & Cleeremans, 2012; Shanks et al., 2013, but see Payne, Brown-Iannuzzi, & Loersch, 2016). It is clear that more high-powered, preregistered replication studies with repeated-measures designs are needed before claims of behavioral priming should be widely accepted.

As models of memory in the cognitive and affective sciences advance, the conceptual basis of social cognition will also advance (for a glimpse of newer models of memory and social knowledge that social cognition researchers are starting to consider see Amodio & Ratner, 2011; Cushman & Gershman, 2019; Momennejad, Duker, & Coman, 2019; Payne, Vuletich, & Lundberg, 2017). The integration of memory models into our understanding of social cognition have led psychologists and others to grapple with how aware we are of, how in control we are of, and how culpable we are for our social behavior and attitudes (Greenwald & Banaji, 1995; Sinnott-Armstrong & Wheatley, 2014; Wegner & Bargh, 1998). This raises important moral, legal, and philosophical questions that will continue to be the focus of empirical research for decades.

Reasoning about Traits and Mental States

Although modern-day social cognition research began in the 1970s and 1980s, it has roots in social psychology research from the 1940s, 1950s, and 1960s. For instance, much of the contemporary studies on person perception can be traced back to Asch's (1946) work on impression formation. Asch was a gestalt psychologist who observed that perceivers actively integrate trait information they learn about a person. For example, if told that another person was intelligent and then told that that person was skillful, perceivers attempt to understand skillful in relation to being intelligent. By accommodating incoming information to previously learned knowledge, people show a primacy effect, which is characterized by a particularly strong influence of initial information when forming impressions. Asch also noted that some types of traits, namely ones associated with warmth and intelligence, have an especially strong influence on the formation of overall impressions. These influential traits are often called central traits. Although the central trait view has faced considerable calls for revision over the years (see, e.g., Rosenberg, Nelson, & Vivekananthan, 1968; Wishner, 1960), modern models of impression formation and

stereotypes (e.g., the Stereotype Content Model, Fiske, Cuddy, Glick, & Xu, 2002) are heavily influenced by Asch's central trait idea.

Asch's work led to the insight that online versus memory-based judgments can critically influence impression formation (Hastie & Park, 1986). Online judgments occur when perceivers have an impression formation goal. Because perceivers with such a goal want to understand another person, they actively integrate information in the way that Asch envisioned, which leads to primacy effects that Asch described. However, it is not always the case that perceivers have an impression formation goal. Sometimes, perceivers learn about other people without the explicit desire to form an impression. When this occurs, perceivers do not integrate trait information about a target, and as a result, do not form strong connections between traits in memory. Instead, perceivers tend to remember the last information that was learned about the person. If people are then asked to subsequently form an impression of a target person, these last pieces of information guide the impression because they are the most memorable. When these so-called "memory-based" judgments dominate, recency effects are more likely to occur during impression formation.

It turns out that whether perceivers have an impression formation goal when learning information about a target can depend on whether the target is viewed as a coherent entity or not. Most individuals are thought to be coherent entities (i.e., high in entitativity), but some individuals, such as those who behave erratically or have mental illnesses, might be viewed as low in entitativity. Groups can also vary in entitativity, with some groups that exist because of shared attributes, such as fraternities and military units, having high entitativity and other groups that do not share commonalities, such as individuals waiting in line at a grocery store, being low in entitativity. If a target is perceived as having high entitativity then perceivers tend to have an impression formation goal and online judgments will guide impressions. However, if the target has low entitativity then perceivers will not have an impression formation goal and any impressions will tend to be memory-based. For both groups and people, perceivers will use online judgments to make sense of highly entitative targets and memory-based judgments when making sense of low entitative targets (McConnell, Sherman, & Hamilton, 1997).

One way that people form impressions of others is by observing their behavior. The attribution literature of the 1960s and 1970s detailed when people attribute behavior to traits of the individual, situational circumstances, or a mixture of factors. One of the most influential attribution models is Jones and Davis's (1965) Correspondent Inference Theory. This theory is remembered for arguing that people tend to make trait inferences from behaviors even when situational qualifiers are available. Later, Ross (1977) called the underweighting of situational influences on behavior "the fundamental attribution error." Kelley's (1967) Covariation Model (also known as the ANOVA Model) offered "distinctiveness," "consistency," and "consensus" as critical factors in making attributions about behaviors. A behavior (e.g., physical aggression) is distinctive if a person demonstrates it in response to a specific stimulus. A behavior is consistent if it appears similarly over time when exposed to the eliciting stimulus. A behavior has high consensus when multiple peo-

ple demonstrate it toward said stimulus. Behaviors are attributed to traits of an individual (and not the situation) when there is low distinctiveness, high consistency, and low consensus (McArthur, 1972). Later research noted the role of self-serving biases in attributions. Compared to an objective perceiver, people will minimize dispositional factors when explaining their own negative behaviors, but will attribute positive outcomes to their self-attributes (Malle, 2006; Taylor & Brown, 1988).

A limitation of classic attribution models is that they often imply that the perceiver is reasoning about behavioral information about the target in a deliberative manner. However, Uleman and colleagues' (e.g., Todorov & Uleman, 2002; Winter & Uleman, 1984) work on spontaneous trait inferences (STIs) demonstrated that perceivers automatically assume traits about a target based on a behavior. Research has found that people make STIs about groups in addition to people (Hamilton et al., 2015). Several other phenomena resemble STIs. Spontaneous evaluative impressions are automatic positive or negative reactions to behaviors (Schneid, Carlston, & Skowronski, 2015). Spontaneous trait transference occurs when a target describes a behavior about another person yet the perceiver automatically associates that behavior with the target (Skowronski, Carlston, Mae, & Crawford, 1998).

Given work on STIs and other findings that social inferences do not always involve conscious elaboration, social cognition researchers developed stage models of attribution that take into account automatic and controlled inferential processes. Trope's (1986) two-stage model suggested that when a target engages in a behavior the perceiver's initial processing occurs during an identification stage. At this stage, the perceiver takes note of behavioral cues, situational cues, and also spontaneously accounts for prior information about the target activated from memory. This all occurs rather automatically. The second stage involves dispositional inference. Controlled processing weighs the situational constraints on behavior and adjusts the dispositional inference accordingly. Gilbert, Pelham, and Krull (1988) expanded this model into three stages: categorization, characterization, and correction. Their categorization stage is very similar to Trope's identification stage. Characterization involves an automatic dispositional inference for a behavior. The correction phase occurs when people have the time and motivation to consider the role of situational influences on the behavior. If people do not reach the correction phase then they are more likely to make a dispositional inference even when situational qualifiers for the behavior are available.

The 2000s saw a merging of social psychological perspectives on attributional processes (Gilbert, 1998; Malle, 1999; Reeder, 2013), developmental and neuroscience research on theory of mind and mentalizing (Leslie et al., 2004; Mitchell, 2006; Saxe, Carey, & Kanwisher, 2004), and philosophical insight into moral reasoning (Greene & Haidt, 2002; Young, Cushman, Hauser, & Saxe, 2007). The result was a flurry of research on when and how people ascribe minds to others, how people reason about intentionality, and how people use inferences about mental states to make sense of behavior. For in-groups, people tend to mentalize based on simulating the experience of the other individual (e.g., putting yourself in their shoes). However, for out-groups, stereotypes and base rates are used

(Ames, 2004; Mitchell, Macrae, & Banaji, 2006). Work on dehumanization and infrahumanization demonstrated how perceivers engage cognitive and neural processes to a lesser extent when reasoning about minds of others in out-groups and stigmatized social groups compared to those belonging to valued in-groups (Harris & Fiske, 2006; Haslam & Loughnan, 2014; Kteily, Bruneau, Waytz, & Cotterill, 2015). Perceivers even get pleasure from the failures of out-group members (Cikara, Botvinick, & Fiske, 2011). Adding to this complexity, perceivers frequently deny the humanity of actual humans, but anthropomorphize and ascribe mental states to inanimate objects—entities that by definition do not have minds (Epley, Waytz, & Cacioppo, 2007; Heider & Simmel, 1944). When it comes to animacy and humanness judgments from faces, in-group targets are given a processing advantage (Hackel, Looser, & Van Bavel, 2014; Hugenberg et al., 2016).

When observing a social scene, we tend to label people as “actors” and “patients.” The actors are the ones who performed the action and the patients are the ones to whom the action was done. In fact, it has been proposed that perceiving that an entity has agency to cause an outcome to another being or the ability to feel the consequences of an action are prerequisites for mind perception. We tend to ascribe more moral responsibility to actors and have empathy for the patients (Gray, Gray, & Wegner, 2007). However, based on whom we are motivated to identify with when chunking a scene we might slot different people into the actor and patient roles. This can lead to different patterns in mentalizing across perceivers and different downstream moral reasoning (Gray, Young, & Waytz, 2012).

It is not only individual differences in motivations and life experience that produce different reasoning about the world. There are also cultural influences. The social inference models described earlier in this section have been tested most thoroughly with Western, college-aged samples, and there is accumulating evidence that we should question their generalizability (Henrich, Heine, & Norenzayan, 2010). For instance, East Asians tend to focus less on dispositional traits and take social context into account to a greater extent (Morris & Peng, 1994). Cultural factors have the potential to be particularly influential because they affect how the mind processes information at multiple levels. Culture influences people’s daily experiences, the institutions that determine people’s education and political reality, and the philosophical guideposts that form a consensual understanding of values, sense of self, and morality (Markus & Kitayama, 2010). The integrative look at cognition that is inherent in the cultural psychology approach adds important contextual layers to the gestalt themes of Asch’s foundational insight on impression formation.

Controversies and the Future of Social Cognition

Social cognition entered social psychology at a time of crisis. The first edition of Fiske and Taylor’s (1984) influential textbook *Social Cognition* starts with the statement, “Not long ago, virtually every psychological convention had its requisite number of symposia on the decline and despair of social psychology . . . (a) reason for the vanishing crisis . . .

is the advent of social cognition (p. ix).” Such optimism for the emergence of social cognition was famously matched by Ostrom’s (1984) provocative suggestion that “Social cognition is sovereign in ways that, I believe, have implications both for social and cognitive psychologists (p. 3).” This enthusiasm spread throughout social psychology and over the years social cognition became the face of contemporary social psychology.

However, social cognition became a victim of its own success. As social psychology struggled for relevance and federal funding at the turn of the century (Holden, 2004), studies that produced pithy sound bites, sensationalist headlines, and counterintuitive findings received the most acclaim (Ledgerwood & Sherman, 2012). This attention invited scrutiny. Methodologists began to document questionable research practices that were common in the field (e.g., Simmons, Nelson, & Simonsohn, 2011). Replication efforts followed that turned up disappointing results (Open Science Collaboration, 2015). Much of the criticism focused on major social psychological topics, such as priming research (e.g., Doyen et al., 2012), ego depletion (Hagger et al., 2016), and stereotype threat (Flore, Mulder, & Wicherts, 2019).

This pushback snowballed into a new crisis of confidence in social psychology. The despair that Fiske and Taylor described decades ago is eerily similar to the mood at the dawn of the 2020s, except this time social cognition is viewed as one of the instigators of the crisis and not the savior. Many of the old questions that seemed settled by the end of the first decade of the 2000s are no longer viewed with such clarity. A review written at this juncture would be remiss to not acknowledge that the conventional wisdom of social cognition could change dramatically in the coming years and some of what appears here might need to be reconsidered. In the near and medium term, social cognition research will continue to sort through the latest criticisms and refine methods and theory accordingly.

Beyond sorting through these methodological issues and their implications for various theoretical stances, other factors are changing the contours of social cognition research. The modern embrace of interdisciplinary research, coupled with the rise of technologies for rapidly disseminating information, has increased contact among social psychologists, cognitive psychologists, developmental psychologists, evolutionary psychologists, health psychologists, clinical psychologists, and neuroscientists. It is becoming clear that opinions of what “counts” as social cognition differ dramatically across these disciplines. Whereas social psychologists tend to view social cognition as a research approach that can apply to any topic area of social psychology (Hamilton, 2005), others have a less expansive view. For instance, developmental psychologists and clinical neuroscientists often view social cognition as a set of skills that enable mental state reasoning, the absence of which contributes to autism and other communicative and behavioral disorders (Baron-Cohen, Leslie, & Frith, 1985; Herrmann, Call, Hernandez-Lloreda, Hare, & Tomasello, 2007). Continued cross-pollination of perspectives across these disciplines will determine the methodological, definitional, and theoretical directions of social cognition research in the coming decades.

Finally, as society changes, the landscape of the social world also changes. Future social cognition researchers will be asked to tackle topics that were not in focus when social cognition came into existence last century. New research on multiracial individuals, for instance, is providing important insight into the nature of social categorization and perception (Chen, Pauker, Gaither, Hamilton, & Sherman, 2018). This work, in addition to broader acceptance of marginalized groups and attention to cultural influences, is expanding social cognition research on diverse populations. The centering of the Internet and social media in daily life has given people new ways to interact and process information. Perceptions of human and robot/machine interaction is an emerging frontier (Carpinella, Wyman, Perez, & Stroessner, 2017; Malle, Scheutz, Arnold, Voiklis, & Cusimano, 2015; Shariff, Bonnefon, & Rahwan, 2017). Advances in virtual reality technology allow for more sophisticated ways to investigate social phenomena and determine whether virtual and non-virtual societies follow the same rules (Blascovich & Bailenson, 2011). Technologies are also enabling social cognition researchers to move beyond the individual and dyad and consider population-level attitudes and social network effects on collective memories (Hehman, Calanchini, Flake, & Leitner, 2019; Momennejad et al., 2019).

In many ways, the field of social cognition is reinventing itself. Efforts to improve methods and reevaluate old theories, integrate knowledge from adjacent academic disciplines, expand research on diverse populations, study technology's influence on human (and robot) interaction, and assess cognition that emerges outside the individual are exciting developments. Now several decades into its existence, the field of social cognition has been challenged by growing pains but remains dedicated to characterizing how people make sense of themselves, others, and the societies in which they live.

Further Readings

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