

4th Edition

SOCIAL COGNITION

From brains to culture

Susan T. Fiske & Shelley E. Taylor



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resources



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To Doug, Lydia, Chris, Vanessa, Geoff, Meredith, Sam, and Max
and
to Mervyn, Charlie, Sara, Sebastian, and Nathaniel

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STF, Princeton

SET, Los Angeles

April 2020

Preface

Since the publication of our first text on social cognition, a lot has changed for us personally (children come and gone, grandchildren have arrived, new jobs, new houses) and professionally (both of us are doing a lot more neuroscience and culture than we would have predicted). For our first text, we were dictating or writing long-hand on lined pads, with secretaries who typed our day's writing and chided us on our less productive days. We used physical mail to send drafts. And we chose the color of the first edition's cover based on airline ticket carbons, its design enlivened by some decidedly 1980s woodcut portraits of hipsters.

That text had its day, defining the birth of social cognition in its modern form. Social psychology was emerging from a crisis, which was partly resolved in the excitement of the fresh ideas and methods newly available from cognitive psychology. Skeptics predicted social cognition to be a short-lived fad. Social psychologists faulted it for not being social enough, and cognitive psychologists faulted it for not being cognitive enough. But the intrepid investigators remained enthused about the cutting-edge insights into social attention, memory, inference, and schemas, as applied to topics from self to health to prejudice to primaries. At first, we debated the inclusion of classic areas such as attribution, self, and attitudes in a book on current social cognition. We ultimately aimed for inclusion, showing the relevance of social cognitive approaches to both classic and newer issues. This joint relevance remains true today.

The second edition demonstrated the robust health of social cognition, which proved not to be a mere fad, an interlude, or an era. Social cognition is here to stay, and indeed has permeated all corners of social psychology. The second cover took a longer view, featuring a more subdued, classic green and reaching back to Renoir. The painting is crowded with people, and so was our bibliography; the book was encyclopedic in its coverage, reflecting the explosion of research in the intervening seven years.

The newly subtitled next edition (*From Brains to Culture*) – nearly 18 years after our first – took an even longer view, still starting with the founding ideas but fast-forwarding to the present. That text reflected the latest in social neuroscience, which for some skeptics is not social enough and for others is not neuroscientific enough. (Sound familiar?) But we cheerfully predicted the thriving of this new field, social cognitive affective neuroscience, building substantially on the social cognition that was controversial in its own early days.

What's more, the current title began to reflect much more research on culture, an increasingly salient topic in social cognition, as globalization takes hold in our field as well as in our lives.

This newly revised Sage edition stays close to its original purpose: describing how people make sense of other people and themselves, a source of enduring common sense and scholarly fascination. Completely updated, the new edition includes

even more material on the latest social neuroscience and cultural social psychology. We have also tried to make it even more reader friendly. Each fully revised chapter is streamlined to more uniform lengths across chapters. Keywords (in bold) are defined both in the text and in a separate Glossary. Chapters each include an online Summary and Abstracts with keywords. Each chapter also includes about ten downloadable figures and tables. Each chapter also includes suggested further readings, and chapters now feature boxes with concrete examples of research, application, and methods.

Using a trifecta synergy, this text coordinates with the Fiske and Macrae *SAGE Handbook of Social Cognition* (2012), which picks up-to-date topics and mostly next-generation authors, based on independent expert editorial adviser feedback. The text also coordinates with the five-dozen selections for Fiske's *SAGE Major Works in Social Cognition* (2013), completed recently.

Thirty-five years ago, social cognition originally helped pull social psychology out of its doldrums. The then-current crisis agonized over too many cute demonstration studies, a lack of theory (except for cognitive dissonance), an irrelevance to the real world, and a historical boundedness that would prevent replication. Social cognition research immediately provided less entertaining (more apparently serious) methods, new theories at first adapted from cognitive psychology, a lively concern for the human condition – health, intergroup relations, politics, education, inequality – and enduring principles less likely to be limited in time. The field made some course corrections and sailed onward.

As we write, social psychology finds itself in crisis again. This time the issue is reproducibility of results, with a consequent focus on transparency, statistical rigor, ethical choices, and replication. Social cognition research does not have a unique role to play here – nor does social psychology – because all the sciences are engaged in some course correction. As the controversies recede, one might conclude, with the National Academy of Science (2019): no crisis, no complacency.

At the end of the day, social cognition research exemplifies some reliable insights that have emerged from this basic science, often usefully applied to improve the human condition. The public, media, nonprofits, health care, business, and government are drawing on social cognitive insights with unprecedented enthusiasm. We hope this book makes clear the enduring contributions of this exciting field.

Online Resources



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For students

- **Multiple choice questions** allow you to test your knowledge and help you prepare for assignments and exams
- An interactive **Glossary** including all the key terms for the book is perfect for exam preparation
- Free **Journal articles** recommended by the author give you the opportunity to read more widely for assignments and improve your grade
- Summary **Videos** with questions allow you to learn the key concepts in a different way and are a great place to start if you are struggling

For instructors

- There are **PowerPoints** set up with the figures and tables from the book to make their use in teaching quicker and easier
- We've included **Short answer questions** to help prompt seminar discussions or again, to be utilised in assessments

1

Introduction

- Approaches to Studying the Social Thinker
- The Ebb and Flow of Cognition in Psychology
- What is Social Cognition?
- People are Not Things
- Brains Matter
- Cultures Matter

Most of us care about what other people think of us. All of us care about understanding other people. Social cognition explains both processes. This is not a self-help book, but it will aid you as you navigate your social world. This is not a do-good book, but it will help you make a difference in the world. This is not fiction, but it tells some good stories. Social cognition captures a remarkable range of phenomena useful to individuals and to the human condition. And it does all this as a psychological science.

Consider a common experience of mistaken social cognition. Try telling someone at a party that you are a psychologist or even that you are simply studying psychology. It does no good to say you do research and do not read minds. The inevitable reaction is either that the person draws back in horror of being analyzed on the spot or that the person leans over to disclose all sorts of intimate secrets. One psychologist we know avoids these situations by claiming to be a computer programmer. We have hit upon a different strategy, which is to say calmly, “I study how people make first impressions on strangers.” This comment promptly stops that conversation.

Suppose, however, that the conversation did not end right there. Suppose the person began to talk about what makes people do what they do, about impressions of various friends, relatives, and strangers at the party. That is the kind of raw data this book addresses. **Social cognition** is the study of how people make sense of other people and themselves. It focuses on how ordinary people think and feel about people – including themselves.

People's understanding of the social world can be studied by *asking* them how they make sense of others (Heider, 1958). This is the route of **phenomenology**: to describe systematically how ordinary people say they experience their world. If people are right, researchers can use these insights to build formal theories by pulling together patterns across many people's intuitions. Even if people are wrong, researchers can study people's commonsense theories in and of themselves to learn how people think. Social cognition researchers are also concerned with this commonsense theory, **naïve psychology**, for its own sake. That is, people's everyday theories about each other are themselves worth studying. Thus, if the person at the party has some ideas about how people form impressions of each other, the person's informal ideas are interesting in their own right. Sometimes researchers' informal personal experience provides a basis for formal theory and empirical research.

Social cognition also goes beyond naïve psychology. Studying social cognition entails a fine-grained analysis of how people think about themselves and others, and it leans heavily on the theory and methods of cognitive psychology. One of the hallmarks of social cognition is the influence of detailed models from cognitive psychology. These models describe precise mechanisms of learning and thinking that apply widely, including in social perception. Because the models are general and because cognitive processes presumably influence social behavior, adapting cognitive theory to social settings makes sense.

Both the naïve psychology viewpoint and the cognitive viewpoint are themes in social cognition research. These two viewpoints characterize the double appeal of social cognition. The entertaining part of studying how people think about others is its appeal to your intuitions; it resembles what is fun and absorbing about sitting around with a friend after midnight, speculating about human nature. The fine-grained part forces you to be accurate and precise; its appeal resembles that of a favorite intricate puzzle. Whether your taste runs to sudoku, crosswords, or mystery novels, getting all the pieces to fit is a pleasure.

APPROACHES TO STUDYING THE SOCIAL THINKER

Knowing something of social cognition's intellectual history gives perspective to researchers' current efforts. This section contrasts two primary approaches that have proved useful.

Asch's Competing Models

Suppose you read a letter of reference describing someone as "intelligent, skillful, industrious, cold, determined, practical, and cautious." Would you be inclined to recommend hiring the person? Would you enjoy working together? How did you form these impressions so quickly? In his pioneering work, Solomon Asch (1946) examined how people make sense of other people, combining their personality

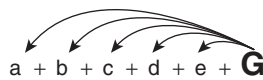
components and coming up with an integrated overall impression. In this, he set the stage for person perception research (E. E. Jones, 1990; Schneider, Hastorf, & Ellsworth, 1979). Asch theorized that we experience another person as a psychological unit, that we fit the person's various qualities (traits) into a single unifying theme (impression). Asch (1946) originally made this point in 12 brilliant studies. Participants had to form an impression of someone described by one or another list of personality traits. One group, for example, learned about someone described by the list that opened this paragraph. Another group instead learned about someone who was "intelligent, skillful, industrious, warm, determined, practical, and cautious." The experimental manipulation was simple: Switching the traits *warm* and *cold* created completely different descriptions of the target person. For example, the cold, intelligent person seems calculating, and the warm, intelligent person seems wise.

Asch proposed two models to account for these results: the configural model and the algebraic model (see Figure 1.1). The **configural model** hypothesizes that people form a unified overall impression of other people; the unifying forces shape individual elements to bring them in line with the overall impression. The pressure toward unity changes the meaning of the individual elements to fit better in context. An intelligent con artist is sly; an intelligent child is clever; an intelligent grandmother is wise. In addition to meaning change, people use a variety of strategies

A. Algebraic model

$$\text{Impression} = a + b + c + d + e$$

or



B. Configural model

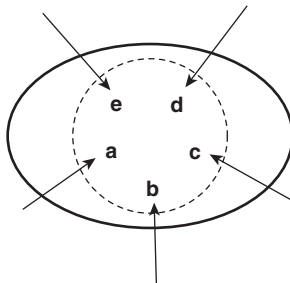


Figure 1.1 Solomon Asch's (1946, p. 257) contrasting models for person perception: A. The algebraic model has one version using simple evaluative summation (top line) and another with summation after the halo (G ; the general positivity or negativity of the impression), which adjusts the evaluation of each individual trait, all equally up or down; B. The configural model shows the traits being integrated to form a unified impression of the person, in which the meaning of individual traits changes in the context of all other traits

to organize and unify the components of an impression; they not only change the meaning of ambiguous terms (such as intelligent), but they also resolve apparently discrepant terms with considerable ingenuity (someone brilliant and bumbling might be an absent-minded genius). Perceivers' mental activity results, according to the configural model, in an impression made up of traits and their relationships, just as a **schema** later will comprise attributes and their relationships.

The alternative, the algebraic model, directly contrasts with the configural model and, by extension, with the subsequent schema models. The **algebraic model** takes each individual trait, evaluates it in isolation, and combines the evaluations into a summary evaluation. It is as if, upon meeting someone new, you were simply to combine together all the person's pros (e.g., intelligence) and cons (e.g., coldness) to form your impression. The algebraic model of information averaging boasts an impressive program of research (N. H. Anderson, 1981), as does a related algebraic model of combining beliefs to form an overall attitude (Fishbein, 1963).

The configural and algebraic models represent, respectively, the holistic and elemental approaches to social cognition described next. As such, they represent two fundamentally different ideas about how people form impressions of others. These two competing approaches originally proposed by Asch were thoroughly researched and, as you might imagine, hotly debated for a number of years (North & Fiske, 2012a). However, from a theoretical perspective, the contest was essentially a draw because both models were flexible enough to account for each other's data. Neither was stated in a strictly falsifiable form. This led to a consensus on the "futility of the adversarial approach" (Ostrom, 1977) and pleas for more theory development. Neither approach any longer tries to "disprove" the other side. Indeed, many of the dual-process theories described in Chapter 2 in effect resolve this old debate by noting that both models are right, but people follow each process under different informational and motivational circumstances that, not surprisingly, mimic the respective research paradigms of the two approaches.

Because these two models form the core of much research we will encounter, some historical context is in order. The two broad intellectual approaches to the study of social cognition – elemental and holistic – go back to psychology's origins in philosophy. The **elemental approach** breaks scientific problems down into pieces and analyzes the pieces in separate detail before combining them. The **holistic approach** analyzes the pieces in the context of other pieces and focuses on the entire configuration of relationships among them. This distinction will become clearer in describing the two approaches.

Elemental Origins of Social Cognition Research

Until the beginning of the 20th century, psychology was a branch of philosophy, and philosophers provided some basic principles of mind that still carry weight today (Boring, 1950). The British philosophers' elemental tradition likened the mind to chemistry, with ideas as the elements. Any concept, whether concrete, such as "sneeze," or abstract, such as "shame," is a basic element, and any element can be

associated with any other element. The bonds between concepts create mental chemistry (Locke, 1690/1979).

In the elemental view, ideas first come from our sensations and perceptions. Then they become associated by contiguity in space and time (Hume, 1739/1978). That is, if sneezes use tissues, the two can become a unit through contiguity. Repetition is the key to moving from simple contiguity to a mental compound (Hartley, 1749/1966). If sneezes and tissues go together throughout your life, when you think of sneezes you will automatically think of tissues. Sneeze-and-tissue becomes a mental compound. Similarly, if the concept “shame” often comes up at the same time as the concept “dancing,” they are likely to be associated simply as a function of repeated pairings. People consciously use the principles of repetition and contiguity in daily life too; think of the last time you attempted to remember the digits of a phone number by repeating them until they became a unit. Frequency of repetition is a major factor that determines the strength of an association (Mill, 1869, 1843/1974).¹

Psychology emerged as a discipline separate from philosophy in the early 20th century, and finally the notions of mental chemistry were tested empirically. The first laboratory psychologists, such as Germans Wilhelm Wundt and Hermann Ebbinghaus, trained themselves and their graduate students to observe their own thought processes: to introspect on how they committed ideas to memory and on how they retrieved ideas from memory (Ebbinghaus, 1885/1964; Wundt, 1897). Their method analyzed experience into its elements to determine how they connect, and to determine the laws that govern those associations. These themes, which began with the British philosophers, continue to form a basis of modern experimental psychology. One elemental model is Asch’s algebraic model. Later in this chapter and in Chapter 4, the elemental approach appears within the current study of social cognition.

Holistic Origins of Social Cognition Research

Reacting against the elemental approach, German philosopher Immanuel Kant (1781/1969) argued for tackling the whole mind at once. In his view, mental phenomena are inherently subjective. That is, the mind actively constructs a reality that goes beyond the original thing in and of itself. A bunch of grapes seems like a unit, but that perception is the mind’s construction. Perceiving a “bowl of grapes” differs from perceiving each individual grape separately. Similarly, if someone cuts off some grapes and the remaining ones topple out of the bowl, the two movements are perceived as linked in a cause–effect relationship. Again, the mind furnishes that perception; it is not inherent in the stimulus. The intellect organizes the world, creating perceptual order from the properties of the surrounding field.

¹Other principles of association were proposed at various times and then dropped in favor of repeated contiguity. These included similarity and causality as creating associations, and vividness as strengthening associations (Boring, 1950).

German-American Gestalt psychology drew on these initial holistic insights (Koffka, 1935; Kohler, 1938/1976). In contrast to analysis into elements, psychologists who use Gestalt methods first describe the phenomenon of interest, the immediate experience of perception, without analysis. This method, already introduced as phenomenology, focuses on systematically describing people's experience of perceiving and thinking. It later became one of the major foundations of social cognition research: the reliance on asking people how they make sense of the world.

Although both the elemental and holistic groups drew on introspections, Gestalt psychologists focused on people's experience of dynamic wholes, and elementarists focused on the experts' ability to break the whole into pieces. As an illustration of the difference between Gestalt and elemental approaches, think of a song in your mind. A song can be perceived as a series of individual notes (elemental) or as a melody that emerges from the relationships among the notes (Gestalt). The emergent structure is lost by analyzing it into its sensory elements, in the Gestalt view. Gestalt psychologists saw the mental chemistry metaphor of the elementarists as misguided because a chemical compound has properties not predictable from its isolated elements. Similarly, the perceptual whole has properties not discernible from the isolated parts. For example, the note middle C can seem high in the context of many lower notes or low in the context of many higher notes, but it would not stand out at all in the context of other notes close to it. Similarly, an average-height basketball player stands out in the subway but not in the team. Many arriving college students who had topped their high-school classes discover that they no longer stand out as intellectual stars in college. Again, the individual acquires meaning in the immediate context, and those contexts change. Psychological meaning goes beyond raw sensory parts to include the organization people impose on the whole. The idea of Gestalt stimulus configurations guided two researchers whose work directly informs social cognition research and theory. We have already met Solomon Asch; now meet Kurt Lewin.

Lewin's Person-Situation Field Theory

German-American Kurt Lewin (1951) imported Gestalt ideas to social psychology and ultimately to social cognition research (Boring, 1950; Bronfenbrenner, 1977; M. A. Deutsch, 1968). Like other Gestalt psychologists, Lewin focused on the person's subjective perceptions, not on "objective" analysis. He emphasized the influence of the social environment, *as perceived by the individual*, which he called the **psychological field**. A full understanding of a person's psychological field cannot result from an "objective" description by others of what surrounds the person because what matters is the person's own interpretation. This is not to say that the person can necessarily verbalize his or her perceived environment, but the person's own reports typically provide better clues than do the researcher's intuitions. For instance, a researcher may objectively report that Barb complimented Ann on her appearance. The researcher may even have strong hunches about why Barb did it. But Ann's reaction will depend on her own perception of

Barb's intent: ingratiation, envy, reassurance, or friendliness. One way to find that out is to ask Ann to describe what happened in her own terms. Just as in Gestalt psychology generally, Lewin emphasized the individual's phenomenology, the individual's construction of the situation.

Another theme imported from Gestalt psychology to social psychology was Lewin's insistence on describing the total situation, not its isolated elements. A person exists within a psychological field that is a configuration of forces. One must understand all the psychological forces operating on the person in any given situation in order to predict anything. For example (see Figure 1.2), some forces might motivate an individual to study (e.g., an upcoming exam, one's roommate studying), but other forces might motivate the individual to spend the evening another way (a group of friends suggesting a movie), and still other forces (loud music next door) might prevent acting on the motivation to study. No one force predicts action, but the dynamic equilibrium among them, the ever-changing balance of forces, does predict action.

The total psychological field (and hence behavior) is determined by two pairs of factors. The first pair consists of the *person in the situation*. Neither alone is sufficient to predict behavior. The person contributes needs, beliefs, and perceptual abilities. These act on the environment to constitute the psychological field. Thus, to know that a particular person is motivated to study does not predict whether or how much he or she will study. But a motivated person in a library is extremely likely to study a lot. Ever since Lewin, social psychologists have seen both person and situation as essential to predicting behavior. The study of social cognition focuses on perceiving, thinking, and remembering as a function of who and where a person is.

The second pair of psychological field factors that determines behavior is *cognition* and *motivation*. Both are functions of person and situation, and jointly they predict behavior. Cognition provides the perceiver's interpretation of the world;

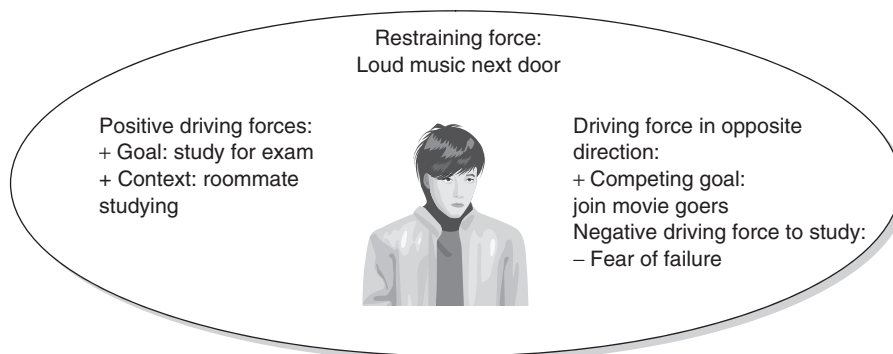


Figure 1.2 Kurt Lewin's (1951) psychological field theory representing an individual's pressures to study or not, based on subjectively perceived driving forces and restraining forces that together motivate behavior

without clear cognitions, behavior is not predictable. If a person has incomplete or confused cognitions about a new setting, behavior will be unstable. For example, if you do not have the foggiest idea about what an upcoming exam in music composition will be, you may behave erratically and unpredictably; you may try several study strategies, none of them very systematically. Cognitions help determine *what* a person will do, which direction behavior will take. If a musician friend explains what composition exams typically contain, your cognitions and your studying will settle down along those lines. But this assumes that you actually do study. The second feature of the psychological field is motivation; its strength predicts *whether* the behavior will occur at all and, if it does, how much of it will occur. Knowing what to do does not mean doing it; cognition alone is not enough. Motivation provides the motor for behavior.

To summarize, Lewin focuses his analysis on psychological reality as perceived by the individual; on a whole configuration of forces, not single elements; on the person and the situation; and on cognition and motivation. These major themes, which date back through Gestalt psychology to Kant, are theoretical points that still survive in modern approaches to social cognition as well as in psychology as a whole.

Conclusion about Elemental and Holistic Views

The historical origins of social cognition contrast elemental and holistic viewpoints. The elemental approach aims to build up from the bottom, combining smaller pieces into larger ones to assemble the whole puzzle. The piecemeal nature of this approach contrasts sharply with the holistic nature of the Gestalt alternative. To describe a person's active construction of reality, the holistic view aims to tackle the entire configuration as the perceiver sees it. The tension between the elemental (piecemeal) and holistic (configural) approaches will surface again, in a different form, in Chapter 2. We will see that they can be integrated as two complementary processes.

THE EBB AND FLOW OF COGNITION IN PSYCHOLOGY

Psychologists have not always agreed on the importance of getting inside the mind. The study of cognition has received both good and bad reviews over time. To prevent an overly myopic view of the importance of cognition, take a brief look at its place in experimental and social psychology. Early psychologists, whether elemental or holistic, relied heavily on introspection as a central tool for understanding human thought. However, introspection developed a bad reputation, and with it, cognition fell into disrepute. Experimental psychology rejected cognition for many years, but social psychology did not. The next two sections contrast the fate of cognition in the two subfields, experimental and social psychology.

Cognition in Experimental Psychology

Wundt's work at the dawn of empirical psychology relied heavily on trained **introspection**.² Using introspection furthered Wundt's emphatically cognitive goal: People's experience was his topic. Wundt and others gathered data about mental events and constructed theories to account for those data. However, experimental psychology ultimately abandoned introspection as a method because it did not conform to scientific standards, namely: One's data should be publicly reproducible. Other scientists ought to be able to examine the data, replicate them following the same procedures, and analyze the data to see if they confirm the theory. In early experimental psychology, theories had to account for introspections (i.e., self-observations), and therein lay the problem. If the criteria for a theory's success depended on private experience, the evidence could not be produced in public. The research could not be checked by others. The most absurd version of the problem would be this: If my theory accounts for my introspections and your theory accounts for yours, how do we decide who is right?

When introspection was abandoned because of such problems, the study of cognition also languished. Psychologists shifted away from studying internal (cognitive) processes and toward external, publicly observable events. The ultimate development of this approach was American **behaviorist** psychology in the early decades of the 20th century. Behaviorists held that only overt, measurable acts were sufficiently valid objects for empirical scrutiny. One founder was Edward L. Thorndike; B. F. Skinner and others developed his work. Thorndike's (1940) theory of instrumental learning held no place for cognition. According to the theory, behavior has certain rewarding and punishing effects, which cause the organism to repeat or avoid the behavior later. In short, "the effect becomes a cause." Both effect and cause are observable, and cognition seems irrelevant (Skinner, 1963). One behaviorist called the idea of cognition a superstition (J. Watson, 1930).

Behaviorists argued that specifying an observable stimulus (S) and response (R) for every part of one's theory is the strict scientific discipline necessary to the advancement of psychology, including social psychology (Berger & Lambert, 1968). For example, a behaviorist might approach the topic of racial and ethnic discrimination by noting that some children are punished for playing with children of certain other ethnic groups and rewarded for playing with children of the family's own ethnic group. A simplified model of this would include "the other ethnic group" as the stimulus and "not playing together" as the response. A behaviorist would not consider the possible role of stereotyping (cognition). In experimental psychology

²Wundt also took measures that did not rely on people's own reports of their internal processes; for example, he also emphasized measurements of reaction time, which is the time between stimulus and response. If you ask us how old we are, we can respond instantly. If you ask either of us how old the other author is, we have to calculate it, and that takes longer. Thus, from reaction time, one could infer more or less intervening thought. Such measures supplemented introspective data.

generally, one net effect of behaviorism was that ideas about cognition fell into disrepute for about half a century, while behaviorist theories dominated.

Several events caused experimental psychologists to take a fresh interest in cognition during the 1960s (Holyoak & Gordon, 1984). First, linguists criticized the failure of the stimulus–response framework’s attempts to account for language (cf. Chomsky, 1959, criticizing Skinner, 1957). Clearly, the complex, symbolic, and uniquely human phenomenon of language would not easily yield to behaviorist approaches.

Second, a new approach called information processing arose out of work on how people acquire knowledge and skills (Broadbent, 1958). **Information processing** refers to the idea that mental operations can be broken down into sequential stages. If you ask one of us when her niece was born, she thinks back to personal circumstances surrounding the event and recalls that it was August, 1979. An information-processing theory might represent those cognitive operations in Figure 1.3.

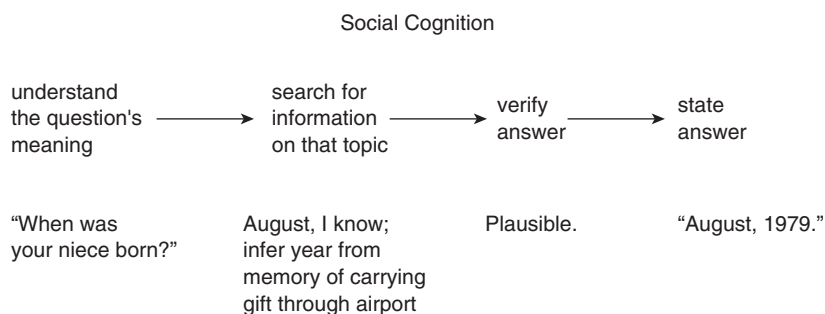


Figure 1.3 Sample steps in an information-processing sequence: Cognitive mechanisms in an oversimplified question–answering model

Information-processing theories specify the steps intervening *between* stimulus (question) and response (answer). The main feature is sequential processing of information. Unlike behaviorists, information-processing approaches aim to specify cognitive mechanisms, to get inside the black box of the mind.

As new scientific tools developed, cognitive psychologists had new ways to trace the nonobservable processes presumed to intervene between stimulus and response. The first important tool was the widely available computer, a methodological tool as well as a theoretical metaphor. As a tool, cognitive scientists use computers to simulate human cognitive processes; they write complex programs that play chess, learn geometry, and summarize the news (J. R. Anderson, 1976; Newell & Simon, 1972; Schank & Abelson, 1977). Social cognition researchers have developed computer simulations of how people form impressions, explanations, and memories of each other (Hastie, 1988a; Linville, Fischer, & Salovey, 1989; E. R. Smith, 1988; Van Overwalle, 1998) and change their attitudes (Latané & Bourgeois, 2001; Van Overwalle & Jordens, 2002). As a metaphor, the computer provides a framework for characterizing mental processes; cognitive psychologists began to talk about

input–output operations, or memory storage and retrieval, with respect to human cognition. Much of that early cognitive theory built on the idea that human cognition resembles computer information processing.

With the advent of cognitive neuroscience, the metaphors and models are changing. Cognitive psychologists are focusing more on modeling processes that are plausible with regard to increasingly understood brain systems, neural networks, their timing, and even single-cell responses. The current challenges include modeling how clusters of individually dumb neurons generate such exquisite intelligence. Some models draw on insights from individually simple organisms, such as ants, that collectively accomplish optimal choices, such as finding nests safe from predators (Mallon, Pratt, & Franks, 2001). Another example is the coordination of flocks of birds that individually have, well, bird brains, but collectively move together across thousands of miles, alighting, flying, and taking off in unison, in effect making group decisions (Couzin, Krause, Franks, & Levin, 2005). Simple biological collectives may provide metaphors, models, and methods for understanding neural systems.

To conclude, experimental psychology began with introspection as a legitimate method for gaining insight into thinking, with cognition as a legitimate focus for theory. Behaviorists virtually eliminated such concerns for decades, and cognition fell into disrepute. During the 1970s, cognitive psychology reemerged as a scientifically legitimate pursuit (Neisser, 1980). Then, during and after the 1990s, the Decade of the Brain, cognitive neuroscience profoundly altered the landscape, for example, highlighting the interplay between human cognition and emotion (Phelps, 2006), the diffuse neural systems involved in language production and comprehension (Gernsbacher & Kaschak, 2003), the neural bases of cognitive control including inconsistency monitoring (E. K. Miller & Cohen, 2001), the distinct neural bases for distinct types of **category** learning (Ashby & Maddox, 2005), and the neural evidence for long-standing concepts such as **episodic memory** for past experiences, supported by both the **neuropsychology** of brain damage and neuroimaging studies of memory (Tulving, 2002). To some, these neural emphases seem remote from social cognition, threatening to tear psychology apart. Fortunately, human neuroscience has the potential to glue psychology back together, because the brain is not divided up the way psychology departments are. We are simultaneously social, affective, cognitive actors in the world.

Cognition in Social Psychology

In contrast to experimental psychology, social psychology has consistently leaned on cognitive concepts, even when most psychology was behaviorist. Social psychology has always been cognitive in at least three ways. First, since Lewin, social psychologists have decided that social behavior is more usefully understood as a function of people's perceptions of their world rather than as a function of objective descriptions of their stimulus environment (Manis, 1977; Zajonc, 1980a). For example, a donation that seems selfishly motivated to make the donor feel good may encourage

gifts in the short term but not in the long run (Anik, Aknin, Norton, & Dunn, 2011). People's reaction depends on their perception, not simply the giver's actions.

Other people can influence a person's actions without even being present, which is the ultimate reliance on perceptions to the exclusion of objective stimuli. Thus someone may react to a donation opportunity by imagining the reactions of others (e.g., "How grateful will the recipients be?", "What would my mother say?", or "What will my friends think?"). Of course, such thoughts are the person's own fantasies, having perhaps tenuous connection to objective reality. The causes of social behavior are doubly cognitive; our perceptions of others actually present and our imagination of their presence both predict behavior (cf. Allport, 1954).³

Social psychologists view not only causes but also the end result of social perception and interaction in heavily cognitive terms, and this is a second way that social psychology has always been cognitive. Thought often comes before feeling and behaving as the main reaction that social researchers measure. A person may worry about a donation (thought), feel good about the idea (affect), and do it (behavior), but social psychologists often mainly ask: "What do you think about it?" Even when they focus on behavior and affect, their questions are often "What do you intend to do?" and "How would you label your feeling?" These arguably are not behavior and feelings but cognitions about them. Thus social psychological causes are largely cognitive, and the results are largely cognitive.

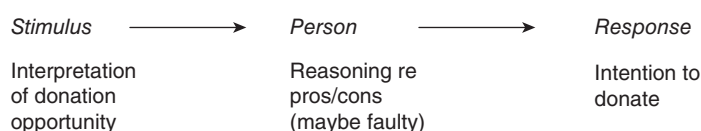
A third way that social psychology has always been cognitive: The person in between the presumed cause and the result is viewed as a thinking organism; this view contrasts with regarding the person as an emotional organism or a mindless automaton (Manis, 1977). Many social psychological theories paint a portrait of the typical person as reasoning (perhaps badly) before acting. In attempting to deal with complex human problems, as social psychology always has, complex mental processes seem essential. How else can one account for stereotyping and prejudice, propaganda and persuasion, altruism and aggression? It is hard to imagine how a narrowly behaviorist theory would even begin. A strict stimulus–response (S–R) theory does not include the thinking organism that seems essential to account for such problems. In several senses, then, social psychology contrasts with stringent S–R theories in its reliance on S–O–R theories that include stimulus, organism, and response (Figure 1.4). Consequently, the thinker, who comes in between stimulus and response, has always been paramount in social psychology.

The social thinker has taken many guises in social psychology (S. E. Taylor, 1998), reflecting various roles of cognition. Besides cognition, motivation has played different roles in the view of the social thinker. Keeping in mind these two components, cognition and motivation, five general views of the thinker emerge in social psychology: consistency seeker, naive scientist, cognitive miser, motivated tactician, and activated actor (Table 1.1).

³One might well ask, what is the logical alternative to this approach? Who does research on reactions to the objective as opposed to the cognized world? The answer is behaviorists, as described, and some perceptual theorists (see Chapter 3 and Gibson, 1979).

The first view emerged from the massive quantities of work on attitude change after World War II. The late 1950s produced several theories, all sharing some crucial basic assumptions. The consistency theories, as they were called, viewed people as **consistency seekers** motivated by perceived discrepancies among their cognitions (e.g., Festinger, 1957; Heider, 1958; see Abelson et al., 1968, for an overview). Dissonance theory is the best-known example: If David has publicly announced he is on a diet and knows that he has just eaten a hot fudge sundae, he must do some thinking to bring those two cognitions into line. (Changing the subjective definition of “diet” would be a start.)

A. Social cognition approach



B. Behaviorist approach

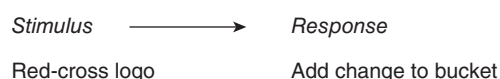


Figure 1.4 Cognitive features of a social decision: Social cognition (and social psychology generally) works from Stimulus through the Organism (person) to Response (S–O–R), in contrast to behaviorism’s S–R framework, and each step is viewed as cognitively mediated

Chapter 9 returns to consistency theories, but for the moment two points are crucial. First, these theories rely on perceived inconsistency, which places cognitive activity in a central role. For example, if would-be dieters can convince themselves that one splurge will not matter, eating a sundae is not inconsistent for them. Objective inconsistency is not important. Subjective inconsistency among various cognitions or among feelings and cognitions is central to these theories. Actual inconsistency that is not perceived as such does not yield psychological inconsistency.

Second, upon perceiving inconsistency, the person is presumed to feel uncomfortable (a negative drive state) and motivated to reduce the inconsistency. Reducing the aversive drive state is a pleasant relief, rewarding in itself. This sort of motivational model is called a drive reduction model. Less formally, the sundae-consuming dieter will not be free from anxiety until he manufactures some excuse. Hence, consistency theories posit that people change their attitudes and beliefs for motivational reasons because of unmet needs for consistency. In sum, motivation and cognition both are central to the consistency theories.

Ironically, as they proliferated, consistency theories ceased to dominate the field, partly because the variants on a theme became indistinguishable. Moreover, it was difficult to predict what a person would perceive as inconsistent and to what degree, and which route to resolving inconsistency a person would take. Finally, people do,

in fact, tolerate a fair amount of inconsistency, so the motivation to avoid it as an overriding principle was called into doubt (cf. Kiesler, Collins, & Miller, 1969).

Research in social cognition began in the early 1970s, and with it new models of the thinker emerged. Cognition and motivation play rather different roles in these new models compared with the roles they played in the consistency seeker model. In the new models, motivation is secondary to cognition. These views are central to social cognition research, and they will appear in more detail throughout the book. At present, however, a brief look is useful.

The first view within the social cognition framework is the **naïve scientist**, a model of how people uncover the causes of behavior. Attribution theories concern how people explain their own and other people's behavior; they came to the forefront of early 1970s research (see Chapter 6). **Attribution theories** describe people's causal analyses of (attributions about) the social world. For example, an attribution can address whether someone's behavior seems due to the external situation or the person's internal disposition. If you want to know why your acquaintance Bruce snapped at you one morning, perhaps there were mitigating circumstances (e.g., his girlfriend left him; his dog ran away; you just backed into his truck) or whether he has an irritable disposition (he always behaves this way to everyone).

Attribution theorists initially assumed that people are fairly rational – like scientists – distinguishing among various potential causes. In part, this was a purposeful theoretical strategy designed to push a rational view of people as far as possible to discover its shortcomings. The theories started with the working hypothesis that, given enough time, people will gather all the relevant data and arrive at the most logical conclusion. In this view, you would think about your friend's behavior in a variety of settings and carefully weigh the evidence for a situational or a dispositional cause of his behavior. Thus the role of cognition in the naïve scientist model is as an outcome of fairly rational analysis.

If you are wrong about why Bruce was irritable, the early theories would have viewed your error as an emotion-based departure from the normal rational process or as a simple error in available information. For example, if you attribute Bruce's unpleasant behavior to his irritable disposition, it may be because you are motivated to avoid the idea that he is angry at you specifically. Viewed from this perspective, errors arise mainly as interference from nonrational motivations. In the early attribution theories, motivation enters mainly as a potential qualification on the usual process.

Recall that for consistency theories, in contrast, motivation drives the whole system. The role of motivation in consistency theories is central; the aversive drive state persists until inconsistencies resolve. Attribution theorists traditionally did not view unresolved attributions as causing an aversive drive state. Motivations for predicting and controlling one's social world presumably set attributions in motion; hence, motivation does help to catalyze the attribution process, just as it catalyzes the entire consistency-seeking process. Nevertheless, motivation is far more explicit in consistency theories than in attribution theories.

Unfortunately, people are not always such careful naïve scientists. The cognitive system is limited in capacity, so people take **shortcuts**. The limitations of the

cognitive system can be illustrated by such trivial problems as trying to keep a credit card number, a security code, and a telephone number in your head as you dial, or by more serious problems such as working poorly when you are distracted. The impact of cognitive limitations shows up in social inferences too. To illustrate, in deciding why Bruce was irritable, you may seize on the easiest explanation rather than the most accurate one. Rather than asking Bruce what is disturbing him, you may simply label him as unpleasant, without giving it much thought. Quite often, people are simply not very thorough.

Hence, the third general view of the thinker is the **cognitive miser** model (S. E. Taylor, 1981b). The idea is that people are limited in their capacity to process information, so they take shortcuts whenever they can (see Chapters 7–8). People adopt strategies that simplify complex problems; the strategies may not be correct processes or produce correct answers, but they are efficient. The capacity-limited thinker searches for rapid, adequate solutions rather than for slow, accurate solutions. Consequently, in this view, errors and biases stem from inherent features of the cognitive system, not necessarily from motivations. Indeed, the cognitive miser model is silent on the issue of motivations or feelings of any sort except gaining a rapid, adequate understanding (which is cognitive rather than motivational in flavor). Cognition's role was central to the cognitive miser view, and motivation's role vanished almost entirely, with isolated exceptions.

As the cognitive miser viewpoint matured, the importance of motivations and emotions again became evident. Having developed considerable sophistication about people's cognitive processes, researchers began to appreciate anew the interesting and important influences of motivation on cognition (see Chapter 2). In addition, affect has been a continued source of fascination, as Chapters 13–14 indicate. With growing emphasis on motivated social cognition (Showers & Cantor, 1985; Tetlock, 1990), researchers returned to old problems with new perspectives gained from studying social cognition. Social interaction became more important. People's thinking is for doing, to paraphrase William James (1890/1983), and their social thinking is for their social doing (S. T. Fiske, 1992, 1993). The 1990s view of the social perceiver might best be termed the **motivated tactician**, a fully engaged thinker with multiple cognitive strategies available, who (consciously or unconsciously) chooses among them based on goals, motives, and needs. Sometimes the motivated tactician chooses wisely, in the interests of adaptability and accuracy, and sometimes the motivated tactician chooses defensively, in the interests of speed or self-esteem. Thus views of the social thinker came full cycle back to appreciating the importance of motivation, but with increased sophistication about cognitive structure and process.

As the 21st century gets well under way, views of the social perceiver are shifting slightly yet again, building on all that came before. The motivated tactician is nowhere near as deliberate as the goals viewpoint seemed to imply. Currently, with a heavy emphasis on unconscious associations, cued in the barest fraction of a second, people are viewed as **activated actors**. That is, social environments rapidly cue perceivers' social concepts, without awareness, and almost inevitably cue associated cognitions, evaluations, affect, motivation, and behavior (e.g., Dijksterhuis & Bargh, 2001;

Fazio & Olson, 2003; Greenwald et al., 2002; Macrae & Bodenhausen, 2000; Nosek, Hawkins, & Frazier, 2012; Payne, 2012). This latest look emphasizes fast reactions, variously viewed as implicit, spontaneous, or automatic indicators of responses unconstrained by perceiver volition (see Chapters 3–4 and 10–13). These interpretations remain provocative, but one thing is clear: People’s motives affect surprisingly unconscious responses. Using ever-faster and more precise methods for presenting stimuli at speeds outside awareness, as well as neuroscience measures of neural responses from the earliest moments of perception, we are rapidly learning just how much occurs in the first moments of social perception. At the same time, social cognition is not simply returning to the cognitive miser view (i.e., fast but not very good). The current view combines the cognitive economy view with a view that incorporates motivation and affect at every stage, even the preconscious ones. The farther upstream we go, the more we realize that cognition, affect, and behavioral readiness are inseparable.

In summary, social psychology has always been cognitive in the broad sense of positing important steps that intervene between observable stimulus and observable response. One early, major set of theories viewed people as consistency seekers, and motivation played a central role in driving the whole system. With the rise of social cognition research, new views emerged. In one major wave of research, psychologists view people as naive scientists. These psychologists regard motivation mainly as a source of error. In another recent view, psychologists see people as cognitive misers and locate errors in the inherent limitations of the cognitive system, saying almost nothing about motivation. More recently, motivational influences on cognition have reemerged in a revitalized view of the social thinker as a motivated tactician. Finally,

Table 1.1 Models of the social thinker in social cognition research

Model of the social thinker	Era	Main role for motivation	Main role for cognition	Theoretical example (relevant chapter)
Consistency seeker	1950–1960s	Drive to reduce discomfort from cognitive discrepancy	Cognitions about behavior, beliefs	Dissonance theory of attitudes (Ch. 9)
Naive scientist	1970s	Prediction and control, qualified rationality	Primary, rational analysis	Covariation model of attribution (Ch. 6)
Cognitive miser	1980s	Rapid, adequate understanding	Shortcuts conserve limited capacity	Heuristic decision making (Ch. 7)
Motivated tactician	1990s	Thinking is for doing in social context	Interaction goals organize cognitive strategies	Dual-process models (Ch. 2), especially stereotyping (Ch. 11)
Activated actor	2000s	Social surviving and thriving	Automatic affect and behavior	Implicit associations (Chs 3–4, Chs 12–15)

researchers are currently realizing the limited degree of conscious choice in engaging automatic and controlled processes. With an emphasis on the functioning social thinker-feeler-actor, current work views people as activated actors, influenced by their social environments at even earlier stages than previously understood.

WHAT IS SOCIAL COGNITION?

The study of social cognition does not rely on any one theory. The field concerns how people make sense of other people and themselves in order to coordinate with their social world. Most social cognition research shares some basic features: unabashed mentalism, orientation toward process, cross-fertilization between cognitive and social psychologies, and at least some concern with real-world social issues (Augoustinos & Walker, 1995; Bless, Fiedler, & Strack, 2004; S. T. Fiske, 2012; Macrae & Bodenhausen, 2000; Macrae & Miles, 2012; Moskowitz, 2005; Ostrom, 1984; S. E. Taylor, 1981b).

Mentalism

The first of these assumptions, an unabashed commitment to mentalism (cognition), has just been discussed at some length. **Mentalism** is the belief in the importance of cognitive representations (Table 1.2). The cognitive elements people naturally use to make sense of other people constitute the “what” of social cognition. Mental representations are cognitive structures that both represent one’s general knowledge about a given concept or stimulus domain and one’s memory for specific experiences. For example, your general knowledge about a new friend may be organized into a view of her as independent but not a loner, friendly but not intrusive, and athletic but not a star. A concept (e.g., this person) includes both relevant attributes (e.g., independent, friendly, athletic) and the relationships among the attributes (e.g., what her independence has to do with her friendliness). General knowledge about ourselves and others provides us with the expectations that enable us to function in the world; as noted, thinking is (mostly) for doing. People also have specific memories for unique events. Both the general and specific types of memory appear in Chapter 4 on mental representation. People also have mental representations of self (Chapter 5), attitude objects (Chapter 9), and outgroups (Chapter 10), among other significant social cognitions. That being said, some new approaches focus on embodied and enacted knowledge that may not be mediated by mental processes, as we will see.

Table 1.2 Identifying features of social cognition approaches

Mentalism	Process	Cross-fertilization	Real-world issues
What: Cognitive representation (e.g., general knowledge & instances)	How: Cognitive mechanisms (e.g., attention, memory, inference)	Whence: Adapting cognitive science methods (e.g., response time, neuroimaging)	Why: Social problems (e.g., mental & physical health, law, prejudice, persuasion, prosociality)

The second basic assumption in research on social cognition concerns **cognitive process**; that is, how cognitive elements form, operate, and change. A process orientation follows from the fundamental commitment to cognition: Concern with cognitive elements that intervene between observable stimulus and observable response requires an explanation of *how* one gets from S to R. Recall that behaviorists explicitly avoided discussion of internal processes because they were concerned with predicting a publicly observable response from a publicly observable stimulus. In that sense, they were response or outcome oriented rather than process oriented.

But outcome orientations arose elsewhere too. The early methodology of research on consistency theories, for example, was more outcome oriented than process oriented. Although the researchers originally theorized and made assumptions about process, they focused empirically on predicting outcomes from stimuli. For example, inconsistency was manipulated (stimulus) and the resulting attitude change measured (outcome). Later psychologists conducting consistency research did attempt to measure the intervening processes, but the initial thrust of the research methods was outcome oriented. One of the recent shifts in attitude research and in social psychology generally has been away from outcome-oriented approaches and toward examinations of process.

In social cognition research, theories are now available to describe – and the tools are available to measure – various implicit but hitherto unexamined assumptions about process. Social cognition research often attempts to measure the stages of social information processing or at least the mechanism by which social perception translates to social response. That is, when people confront a social stimulus, several steps may occur before they react, or the reaction may be more automatic, habitual, or unthinking. Social cognition, and now social neuroscience, analyzes all these processes from the earliest moments.

Cross-Fertilization

So far we have described two themes in social cognition research and in this book: a commitment to representation (mentalism) and a commitment to process analysis. The third theme, cross-fertilization between cognitive and social psychology (and both with human neuroscience), addresses another feature of social cognition research. Although social psychology has always been cognitive, it has not always had purely cognitive neighbors from whom it can borrow new approaches. Adopting relatively fine-grained cognitive and cognitive neuroscience theory and methods has proved fruitful for social psychological research. Not only do researchers specify the steps in a presumed process model, but they attempt to measure the steps in some detail. For example, the first new-wave social cognition research relied heavily on measuring milliseconds of reaction time. The most recent social cognitive neuroscience relies on detailed brain-imaging techniques. Borrowing measures from other areas of psychology enriches social psychology's home-grown methods. Various traditional and newer experimental methods enable

researchers to support differing aspects of process models, for example, attention, memory, and inference.

Real-World Social Issues

The fourth theme of social cognition research is application to the real world. Social psychologists have a long tradition of addressing important contemporary issues. Early research provided insights into crowd behavior, propaganda, anti-Semitism, military morale, and other social issues. In keeping with this tradition, research in social cognition informs current issues. It applies the often heavily cognitive theory and method to real-world social problems. Throughout, this book illustrates how social cognition can guide work in areas such as psychotherapy, health care, the legal system, stereotyping, advertising, political campaigns, strangers helping strangers, and romantic involvements. All these applications illustrate the flexibility of social cognition research and demonstrate how some otherwise highly technical or abstract ideas generalize outside the laboratory.

Social cognition applications to real-world issues define some boundary conditions for cognitive processes. That is, the research reveals phenomena that do not lend themselves to a purely cognitive analysis; other factors must be considered in many interpersonal settings of consequence. For example, how does cognition trade off accuracy and efficiency? How does social information processing operate in situations of intense personal involvement? How do social cognitions translate into voting behavior? How does the neuroscience of social cognition relate to the social problems of people with autism? Stay tuned.

This book addresses the four major themes of social cognition research: unabashed mentalism in the study of cognitive representations of people, a commitment to fine-grained analyses of cognitive process, cross-fertilization between cognitive and social theory and methods, and a commitment to real-world social issues.

PEOPLE ARE NOT THINGS

As we review research on social cognition, the analogy between the perception of things and the perception of people becomes increasingly clear. The argument is made repeatedly: Principles that describe how people think in general also describe how people think about people. Many theories of social cognition have developed in ways that undeniably build on fundamental cognitive principles. Nevertheless, in borrowing such principles we discover fundamental differences when applying them to cognition about people. After all, cognitive psychology is relatively more concerned with processing information about inanimate objects and abstract concepts, whereas social psychology is more concerned with processing information about people and social experience.

At this point you already may be saying, “Wait, you can’t tell me that the way I think about mental arithmetic or about my coffee cup has anything to do with the way I think about my friends.” The wisdom or folly of applying the principles of object perception to the perception of people has been debated for some time (Heider, 1958; Higgins, Kuiper, & Olson, 1981; Macrae & Miles, 2012; Ostrom, 1984; Schneider et al., 1979; Tagiuri & Petrullo, 1958). Some of the important differences between people and things as targets of perception include the following (Table 1.3):

- People intentionally influence the environment; they attempt to control it for their own purposes. Objects, of course, are not intentional causal agents.
- People perceive back; as you are busy forming impressions of them, they are doing the same about you. Social cognition is mutual cognition.
- Social cognition implicates the self because the target is judging you, because the target may provide you with information about yourself, and because the target is more similar to you than any object could be.
- A social stimulus may change upon being the target of cognition. People worry about how they come across and may adjust their appearance or behavior accordingly; coffee cups obviously do not.
- People’s traits are nonobservable attributes that are vital to thinking about them. An object’s nonobservable attributes are somewhat less crucial. Both a person and a cup can be fragile, but that inferred characteristic is both less important and more directly seen in the cup.
- People change over time and circumstance more than objects typically do. This can make cognitions rapidly obsolete or unreliable.
- The accuracy of one’s cognitions about people is harder to check than the accuracy of one’s cognitions about objects. Even psychologists have a hard time agreeing on whether a given person is extraverted, sensitive, or honest, but most ordinary people could test easily whether a given cup is heat resistant, fragile, or leaky.
- People are unavoidably complex. One cannot study cognitions about people without making numerous choices to simplify. The researcher has to simplify in object cognition too, but fewer distortions may result. One cannot simplify a social stimulus without eliminating much of the inherent richness of the target.
- Because people are so complex, and because they have traits and intents hidden from view, and because they affect us in ways that objects do not, social cognition automatically involves social explanation. An ordinary person wants to explain why a person is fragile more than why a cup is.

For these reasons, social cognitive psychology will never be a literal translation of cognitive psychology. It profits from theories and methods adapted to new uses, but the social world provides perspectives and challenges that are dramatic, if not unique, features of thinking about other people and oneself.

Table 1.3 Why and how people differ from inanimate objects as stimuli

People are (and objects are not, so much):

Intentional causal agents

Perceiving back

Similar to self

Self-conscious targets

Holders of crucial but nonobservable traits

Changeable

Known with indeterminant accuracy

Intrinsically complex

Requiring explanation

APPLIED FOCUS: CAN ARTIFICIAL INTELLIGENCES, ROBOTS, AND DIGITAL ASSISTANTS BE JUST PEOPLE TOO?

The contrast between forming impressions of people and of things has a middle ground, namely, how we make sense of the artificial intelligences that aim to substitute for other humans – and how they make sense of us. Increasingly, people interact with their devices either as distraction during human social interaction, or as a substitute for it, undermining their well-being (Kushlev, Dwyer, & Dunn, 2019; see also Twenge, 2019).

Not only is artificial intelligence (AI) a poor substitute for a human, it can be just as unreliable and biased as a human (for example, in coding, Bolukbasi et al., 2016; in natural language processing, Caliskan, Bryson, & Narayanan, 2017). For one reason, forming impressions is not a passive verbatim recording of facts (see Chapters 2–4). People actively make sense of other people, selectively attending, deliberately remembering, and dynamically constructing an impression from data and prior knowledge.

Machines also construct a reality, based on human decisions about their algorithms. Contrary to its reputation, AI is essentially subjective and relative (Serov, 2013), because of its human authors. But AI (essentially) does its job the same way every time: AI fails to reflect human variety, spontaneity, and ambiguity in social construction (Schmid, 2019). That is, people actively construct their cognitive representations, depending on what they intend to do. AI rarely captures diversity in human intent, due in part to its lacking human goals and motives that guide sense making and ultimately interaction.

AI aligns with a computational, formal modeling approach to studying social cognition (Cushman & Gershman, 2019), addressing inference, choice, and strategic interaction. The models tend to be programmable formal statements. Other approaches to theory are verbal statements (Fiske, 2004); both can synthesize research results useful to applications such as AI, but neither is perfect, so converging approaches work well. Examples include detecting human stereotyping by using verbal theory to guide natural language processing (Jenkins, Karashchuk, Zhu, & Hsu, 2018; see also gandalfnicolas.com).

BRAINS MATTER

The Decade of the Brain in the 1990s acknowledged the exciting and crucial roles of neural systems in a variety of human processes, including social ones (Harmon-Jones & Inzlicht, 2016; Ochsner & Lieberman, 2001; Todorov, Fiske, & Prentice, 2011). Social psychophysiology was not new, of course (e.g., Cacioppo & Berntson, 1992; Table 1.4). The palpable excitement among researchers and the public stemmed partly from the invention and popularity of **functional magnetic resonance imaging** (fMRI) techniques, which yield images of the brain at work. These techniques allow researchers to place a person into an MRI magnet, provide some stimuli, and observe blood flow to distinct areas of the brain, revealing clues as to their possible functions in different tasks. The fMRI techniques are developing increasingly precise indicators of spatial location in the brain (Lieberman, 2010). These are complemented by older techniques, such as **electroencealography** (EEG) and **facial phaelectromyography** (EMG), as well as new techniques being developed as we write, such as **transcranial magnetic stimulation** (TMS). EEG provides only approximate spatial locations (noninvasive electrodes are distributed over the surface of the skull) but extremely precise temporal information. The facial EMG (electrodes at crucial locations on the face) can detect micromovements of facial muscles not yet visible to observers but potentially indicative of facial expressions. TMS stimulates or inhibits selected brain areas, to detect their causal role in mental processes.

Table 1.4 Sampling of neuroscience techniques in use for social cognition

Neuropsychology	Considers personal and social lives of patients with brain impairments
Functional magnetic resonance imaging	fMRI records re-oxygenizing blood flow to just-activated brain areas
Electroencephalography	EEG records voltage fluctuation on the scalp, detecting neural activity
Electromyography (mostly facial)	EMG records voltage changes on skin over muscles, so their activity
Transcranial magnetic stimulation	TMS's electromagnetic induction stimulates or inhibits brain regions
Electrodermal response	EDR (also GSR, galvanic skin response) measures skin moisture
Cardiovascular activity	CV indexes cardiac output, ventricle activity, total peripheral resistance
Hormone levels	Hormones (e.g., cortisol, testosterone, oxytocin) link to sociality
Immune functioning	Assays track specific immune cells and system operation
Genetic analyses	Combined with environment, detect interactive links to social cognition

Added to these techniques are measures of **cardiovascular activity** and **electrodermal response** (e.g., palm sweat), which measure various forms of arousal in the sympathetic adrenal medullary system (Blascovich & Mendes, 2010). Assessments

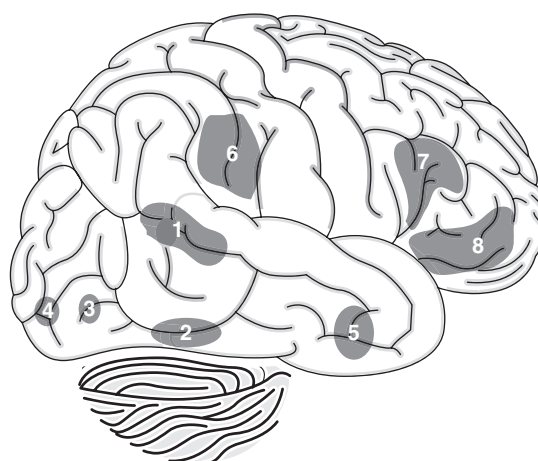
of cardiovascular activity provide information about relatively short-term physiological arousal. Some social neuroscientists, those who are especially interested in stress processes, also often assess longer-term hypothalamic pituitary adrenal (HPA) functioning, especially changes in **hormone levels**, such as cortisol in response to threat or stressful tasks. Elevations in **cortisol** or disruptions in its diurnal rhythm have been tied to stressful events and to psychosocial states. For example, social threat predicts elevated cortisol responses to stressful tasks (Dickerson & Kemeny, 2004), and psychosocial resources (e.g., a strong sense of self) predict lower cortisol responses to stress (Creswell et al., 2005).

Social neuroscientists make use of a broad array of immunological measures as well, which include assessing frequencies of different types of immune cells and overall **immune functioning**. The immune system is responsive to stress and other threats (Dickerson, Kemeny, Aziz, Kim, & Fahey, 2004); assessing immunologic functioning in conjunction with resources, such as optimism or a sense of personal control, can help identify those aspects of social cognition that protect against stress and psychological distress (Segerstrom, Taylor, Kemeny, & Fahey, 1998). **Genetic analyses** also shed light on the interplay of populations, evolution, and culture (Ackerman, Huang, & Bargh, 2012; Chiao, Cheon, Bebko, Livingston, & Hong, 2012). Taken together, these measures open new doors into the life of the social mind.

For social cognition researchers, the possibilities also allow dissociating distinct social cognitive processes on the basis of distinct neuroscientific responses. Relevant to our assertion that “people are not things,” distinct neural systems activate in social perception, compared to object perception. In one early study (F. Castelli, Happé, Frith, & Frith, 2000), people watched a large red triangle and a small blue triangle animated under one of three labels: interaction with feelings and thoughts, random movement, or simple interaction. Independently, the animated movements (on different trials) resembled scripts involving either mental inferences (e.g., persuading, bluffing), simple goals (e.g., chasing, dancing), or straightforward physical movement (e.g., floating, bouncing off walls). When the movements involved attributing a (quasi-human) mental state to the triangles, distinct activation patterns emerged, among them: **medial prefrontal cortex** (mPFC), **superior temporal sulcus** (STS or TPJ, **temporoparietal junction**), and **fusiform face area** (FFA) (see Figures 1.5 and 1.6).⁴ This study was one of the first to show something special about perceiving an entity as having intentions and personality, dubbed a **theory of mind** effect. Note how this study fits our earlier distinctions between people and things.

A related study (Mitchell, Heatherton, & Macrae, 2002) supports this distinction, also at the neural systems level. Undergraduates saw a series of adjective–noun pairs and had to decide whether the adjective “could ever be true of” the noun. The nouns named people (e.g., David, Emily) or objects (e.g., shirt, mango), and the

⁴The Castelli et al. study also showed activation to temporal poles and the extrastriate cortex (occipital gyrus). The Mitchell et al. study described next activated the intraparietal sulcus. We focus on the other areas for simplicity here.



- 1 posterior superior temporal sulcus
- 2 fusiform "face" area
- 3 extrastriate "body" area
- 4 occipital "face" area
- 5 amygdala
- 6 inferior parietal lobule
- 7 ventrolateral PFC
- 8 ventrolateral PFC

Figure 1.5 Some lateral brain regions involved in social cognition

Note: Some lateral (outside) brain regions involved in social perception (face and body perception [2–4], biological motion perception [1], action observation [6, 7], and emotion recognition [5, 8]). Numbers in brackets correspond to the regions in the figure reliably associated with a particular aspect of social perception. The amygdala is displayed on the surface for convenience but is actually interior.

adjectives included typical person descriptors (e.g., assertive, nervous) and relevant object descriptors (e.g., patched, seedless). Neural activity differed when people made these semantic judgments about people and objects. Brain activity associated with people included some of the same areas previously seen by F. Castelli et al. (2000) and others for social cognitive responses: medial prefrontal cortex (mPFC), superior temporal sulcus (STS), and fusiform gyrus (FFA).

These areas of the brain (mPFC and STS) appear frequently throughout this book when people are generally engaged in social cognition (mPFC) or judgments of intent and trajectory (STS). The mPFC in particular appears to have a special role in social cognition across many studies (Amodio & Frith, 2006). What's more, the FFA particularly responds to faces or other objects in one's domains of **expertise**, such as birds for a birdwatcher and cars for a car expert (Farah, 1994; Gauthier, Skudlarski, Gore, & Anderson, 2000). The main point, made by the Mitchell et al. (2002) study, as in the prior one, is the dissociation (separation) between the social and the nonsocial neural activation patterns. Moreover, in these two studies and others (e.g., Mitchell, Macrae, & Banaji, 2005), some of the same areas are implicated in social cognition. One possibility is that these areas link to reward systems in the brain, accounting for the attraction people have to social interaction and belonging (Baumeister & Leary, 1995; S. T. Fiske, 2010).

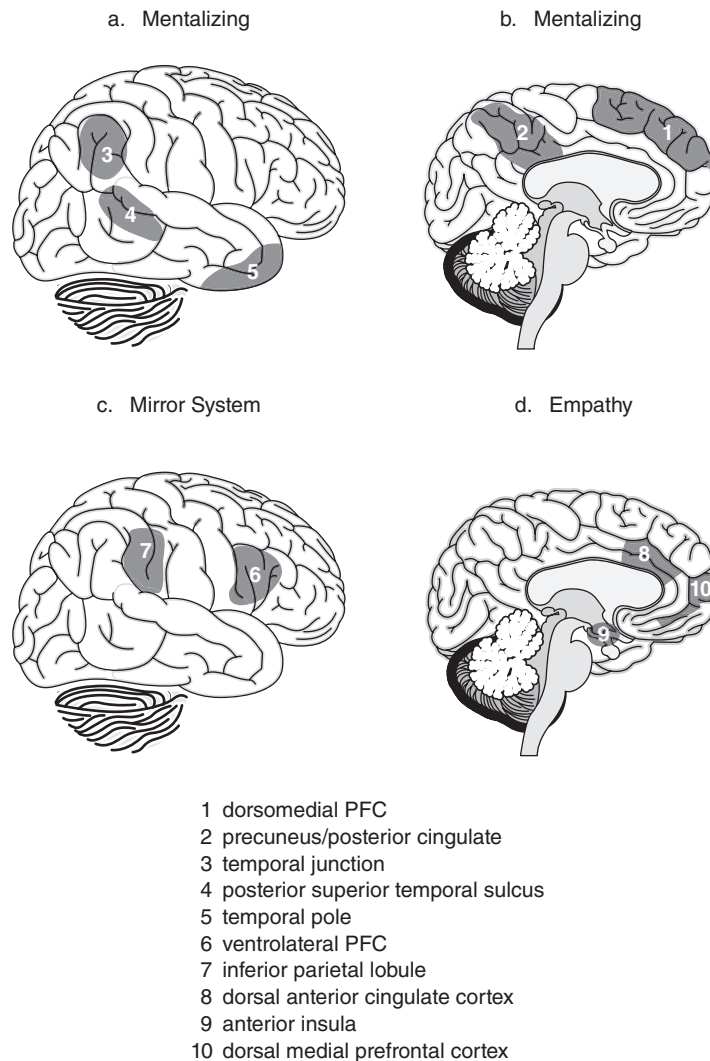


Figure 1.6 Some medial brain regions involved in social cognition

Some medial (midline) brain regions involved in social inference. The top row of images displays the regions commonly activated in mentalizing and theory of mind tasks. The bottom-left image displays the mirror system. The bottom-right image displays brain regions identified in studies of empathy.

Note: Anterior insula is displayed on the medial wall for presentation purposes, but is actually between the medial and lateral walls of the cortex.

What is exciting about these findings is the provocative possibility that social cognition could be the default, resting state (Iacoboni et al., 2004). In many social neuroscience studies, the characteristically social “activations” often emerge as relatively little change from a supposedly neutral baseline (e.g., staring at the fixation point between trials). In contrast, object judgments often create *deactivations* from the baseline. This study suggested that the neutral condition may not be neutral at all, but instead people spontaneously engaging in social cognition (What’s that experimenter doing now? I hope she knows what she’s doing. Will my friends wait for me for lunch? Why didn’t my roommate wake me up as

promised?). Suppose for the moment that much of people's random thinking concerns other people, engaging relatively active social systems in the brain. When the experimenter makes people do mental arithmetic or other nonsocial tasks, the social cognition processes shut down, so these socially implicated areas also shut down. In contrast, when people look at social stimuli, their activation in these areas does not change much from baseline because they were already thinking about other people. This is essentially Iacoboni et al.'s (2004) argument. They compared people watching film clips of two people interacting with a single person engaged in everyday activities or a resting baseline. They found activations even relative to baseline in the **dorsal** (upper) part of the mPFC, as well as in the STS and FFA. And similarly, in the Mitchell et al. study, for example, the socially relevant regions were generally marked by relatively little change from baseline brain activity for person judgments, along with significant deactivations for object judgments. Other studies that intensify social thinking at levels above social daydreaming do find activations above baseline (L. T. Harris, Todorov, & Fiske, 2005). Arguably, the social default readies us for social interaction (Lieberman, 2013).

RESEARCH FOCUS: WHY DO WE THINK SOCIALLY ALL THE TIME? BECAUSE OUR WORLD IS A SOCIAL PLACE OR BECAUSE WE ARE SOCIAL BEINGS?

People think about other people all the time; by some estimates about 70% of people self-reported mind-wandering and about the same for randomly sampled moments during the day. Most accounts of us as social beings speculate that we think socially because we are motivated to belong with other people (as Chapter 2 describes). To get along with other people, we have to think about them, and why they do what they do (as Chapter 6 describes). But consider an alternative: Maybe we think about other people all the time because they surround us all the time. We think about what we experience in our world (see Chapter 3).

Judith Mildner and Diana Tamir (2020) tackled this puzzle by conducting a series of studies, from solitude to sociality, measuring people's social thoughts in various ways. In Study 1, randomly assigned volunteers spent seven hours in isolation – no friend, no phone, no internet, just nonsocial games, books, art, videos – while the control group went about their day as usual. Social thought measures included self-reported mind-wandering and its content. (Quick: Just before we asked, was your mind wandering from the task? If so, what were you thinking about?) About every 10 minutes for about 40, they described in their own words the content of their thoughts. Social themes emerged from both automated and human coding of sociality.

If a motive for belonging drives social thought, then being deprived should make isolated people think more socially than the controls going about their daily (social) business. Just as hunger makes us think about food, isolation should make us think about people.

The counterpoint predicts the opposite: If people think about people because they're surrounded, then the controls should report more social thought. In keeping with the context, not motives, driving social thought, the controls reported more social mind-wandering ($M=13.47$) and the isolates less ($M=9.65$), as coded by humans; the automated coding was similar, though weaker.

Participants also underwent an fMRI brain scan, while making social inferences ("would this person enjoy browsing in a bookstore") about self, friend, or another (Obama) – the control items asked about nonsocial inferences. Some areas of the brain previously implicated in social cognition (mPFC, TPJ, STS) activated more to social inferences about the friend, made by the socially engaged control group, than the socially isolated participants. Again, the more socially engaged people had more social reactions – supporting the context argument, not the social motive one. For the purposes of this book, this study (and three more studies in the article) reminds us of how inherently social our environments are, and why social cognition preoccupies us. We need to think about other people to consolidate what we know and to prepare for future interactions (Meyer, 2019).

As the evidence accumulates for the distinct neural status of thinking about other people's dispositions and states, researchers are learning much about what makes social cognition special. Some findings using these neural criteria suggest that people can think about dogs as people (Mitchell, Banaji, & Macrae, 2005a) more easily than they can think about drug addicts and the homeless as people (L. T. Harris & Fiske, 2006). That is, people's default response to an outgroup that elicits disgust (as evidenced by typical ratings of homeless people and drug-addicted people) activates neural patterns typical of disgust (e.g., insula) but not neural patterns typical of social cognition to ingroups and even other outgroups (e.g., mPFC). On the other hand, people readily attribute psychological states (anthropomorphize) to dogs (Mitchell, Banaji, & Macrae, 2005a), at least as indexed by mPFC and "yes" responses to trait terms ("curious") as potentially applicable to a dog. While interpreting the activation of the vast mPFC is rapidly developing, it is reliably implicated in cognition that is emphatically social.

In discussing the importance of the social brain, we should clarify its context. People sometimes mistakenly pit biological explanations against cultural explanations, rehashing the nature–nurture debate. Although individual researchers tend to be drawn to distinct levels of analysis, brains and cultures are not competing explanations for the same phenomena.

First, neural and cultural processes are inextricably linked. Our brains are predisposed to pick up our cultures as they socialize us. For example, as just hinted, social thinking activates particular neural configurations. Moreover, social exclusion recruits neural systems linked to the experience of physical pain (Eisenberger, Lieberman, & Williams, 2003). That is, people who are ostracized – even from a simple video game with strangers – activate the **anterior cingulate cortex** (ACC), and this activation is dampened by activating the right ventral

prefrontal cortex (rvPFC). These patterns also occur for physical pain. Adding to this parallel, people's baseline sensitivity to physical pain predicts their sensitivity to social pain, and experiencing social pain sensitizes people to physical pain (Eisenberger, Jarcho, Lieberman, & Naliboff, 2006). And Tylenol even soothes both (DeWall et al., 2010). As we increasingly understand the neural correlates of social life, we will see how sensitive our brains are to the social cues that enable culture.

Second, cultural information is stored in our brains. As Chapter 4 indicates, mental representations of social information are complex and distinctly characterized by features that differ from nonsocial representations. People's neocortex varies with the size of their social networks, and this holds for more socially bonded primates as well (Dunbar, 2003, 2012).

Third, people's brains change physically, depending on their cultural experience. For example, taxi drivers have larger **posterior** (rear) hippocampus areas (associated with spatial memory storage) the longer they drive, as they learn street locations (Maguire et al., 2000). Our brains dwell in particular cultural experiences, and both matter to social cognition (Chiao & Blizinsky, 2016).

CULTURES MATTER

New cultural comparisons have been forcing social cognition researchers to reexamine the entire basis of our field. Many of the central assumptions about how people think about other people turn out to be culturally bounded, which challenges long-held assumptions. At first, social cognition researchers focused on frankly **WEIRD** (Western, Educated, Industrialized, Rich, Democratic) undergraduates (Henrich, Heine, & Norenzayan, 2010), but now more comparative work reveals alternative social worlds. Many of these comparisons to date contrast American or Canadian students with Japanese, Chinese, or Korean students. Even with these limited comparisons, some provocative findings are emerging (Morling & Masuda, 2012). For example, cultures vary in thinking about causality more analytically (Westerners) or holistically (East Asians), as Chapter 6 will show (Nisbett, Peng, Choi, & Norenzayan, 2001). This affects, for example, how people decide whether either individual people or social circumstances are more responsible for actions taken, which has implications for law, morality, and social roles.

As another example, configurations of beliefs differ across cultures (K. Leung & Bond, 2004). Cultures with general beliefs in social cynicism assume that power displays elicit compliance, and accordingly, people endorse such influence strategies (Fu et al., 2004). The same endorsement goes for variations in beliefs about religiosity, reward for effort, and fate control; that is, people support influence strategies that fit their culture's expectations about what motivates people. Given globalization of business, education, and politics, these social cognitive insights into cultural variation are crucial for people to understand each other's assumptions about interaction.

One of the most striking social cognitive differences in cultures compares the self as more **independent** and autonomous (Westerners) or more **interdependent** and harmonious (East Asians) (e.g., Markus & Kitayama, 1991; see Chapter 5). The implications of this distinction range from self-definition to self-esteem to life tasks to the roles of others – all critical to social cognition.

All of these cultural patterns relate to each other, as we will see. While the contrasts are real, so are the similarities and so are the places between the extremes. At their best, cultural comparisons create interesting complexity, not stereotypes or caricatures. As social cognition research outgrows its original Western (North American and European) boundaries to explore other settings and simultaneously reaches into the brain (Chiao et al., 2012), it extends its cultural reach as well.

Cultural social cognition reflects the importance of humans as adaptive social beings, evolved to focus on other people, to imitate behavior, discern intent, cooperate together, and learn symbol systems (Ackerman et al., 2012; Morling & Masuda, 2012). People are culturally diverse precisely because of our inherited flexibility and responsiveness to social context.

REPLICABILITY: NO CRISIS, NO COMPLACENCY

In recent years, social psychology has collectively worried about the reliability of research results: Both reproducibility (Can I re-analyze your raw data and produce the same results?) and replicability (Can I follow your methods and get the same result on a new sample?). According to the National Academy of Sciences (2019), these issues are surfacing across the sciences (geoscience, genetics, social sciences). Studies can fail to replicate for useful reasons that help define the phenomenon under study, which may be context-dependent, unstable, noisy, hard to control, and complex. Failures to replicate can also occur for unhelpful reasons: experimenter or replicator mistakes, cutting corners, or bias.

Psychological scientists have differing opinions about the replication failures. Skeptics of the original studies argue that the replication attempts are just as rigorous as (or more so than) the originals; choose high-profile studies that should be robust; and often collaborate with the original researcher. Optimists argue that many projects actually report high replication rates; failures often made mistakes or changed the original procedure; and estimates of replication rates do not generalize because the chosen studies are not a random sample of all studies (National Academy of Sciences, 2019).

Psychology science has been ahead of the curve in identifying and remedying some questionable research practices (Nelson, Simmons, & Simonson, 2018). One target has been investigator degrees of freedom, that is, the temptation to make seemingly small, arbitrary decisions that favor one's hypothesis because people are motivated to publish hypothesis-confirming results. But likewise, replicators might be more motivated to publish results that apparently fail to replicate received wisdom. Replicators too have degrees of freedom (Bryan, Yeager, & O'Brien, 2019).

(Continued)

Whether skeptics or optimists, psychological scientists have seen real change in rules, norms, and choices in the conduct of research: Methods, analyses, reports, and materials all are more transparent. While open science is doubtless an improvement, other changes may make tradeoffs or have unintended consequences. For example, social psychology research now has larger samples, which increases statistical power, but (perhaps to compensate) runs cheaper online studies using self-report measures (Gosling & Mason, 2015; Sassenberg & Ditrich, 2019). Emphasis on pre-registering hypotheses may discourage Type 1 errors (over-eager claims, false positives) but it also increases Type 2 errors (failure to discover, false negatives) (National Academy of Sciences, 2019). Open reviews and unmoderated commentary that names specific authors can become cyber-bullying (Nicolas, Bai, & Fiske, 2019); again, balance is key.

Summary

The study of social cognition concerns how people make sense of other people and themselves. It focuses on people's everyday understanding both as the phenomenon of interest and as a basis for theory about people's everyday understanding. Thus it concerns both how people think about the social world and how they think they think about the social world. It also draws heavily on fine-grained analyses provided by cognitive theory and method.

Solomon Asch first proposed two competing models for social perception, one more algebraic and the other more configural. These two contrasting approaches to social cognition date back to early modern philosophy. The elemental approach begins with ideas as elements that become linked into increasingly complex compounds. People form associations between ideas by the ideas' repeated contiguity in space or time. Early psychologists used introspective analysis as a method to break down their memory processes into those basic elements.

Gestalt psychologists adopted a holistic approach. They focused on the mind's active construction of reality rather than on objective descriptions of the stimulus field. They also focused on the person's experience of dynamic wholes rather than elements. Lewin and Asch imported such ideas to social psychology. As noted, Asch focused on Gestalt impressions. Lewin emphasized that the whole perceived environment – that is, the psychological field – predicts behavior and that one must consider the entire dynamic equilibrium of forces acting on an individual. The psychological field is the joint product of person and situation, and of motivation and cognition.

Cognition has not always been prominent in experimental psychology. When introspection proved to be a weak basis for an empirical science, cognition fell into disfavor with psychologists. Behaviorists dominated psychology for decades, insisting on an observable stimulus, an observable response, and no intervening cognitions. Later, behaviorist approaches seemed inadequate to explain language; at the same time, information-processing theories and computer-aided theory and technology paved the way for the reemergence of cognition in experimental psychology.

In social psychology, however, cognition has always been a respectable idea. The causes of social interaction predominantly lie in the perceived world, and the results of social interaction are thoughts as well as feelings and behavior. In addition, social psychologists have always been cognitive in their view of the thinker who reacts to the perceived stimulus and generates a substantially cognitive response. They have viewed the social thinker at some times as a consistency seeker, motivated to reduce perceived discrepancies; at other times, they have seen the social thinker as a naive scientist who makes every effort to ferret out the truth, with motivation contributing mainly error. Subsequently, social psychologists regarded the social thinker as a cognitive miser who attempts to increase or maintain the efficiency of a capacity-limited cognitive apparatus, and they had little to say about motivation. This viewpoint was followed by a view of the social perceiver as a motivated tactician, which gained acceptance as researchers documented the flexibility of the social perceiver. Currently, with emphasis shifting to ever-faster, more immediate responses, as well as their effects on overt behavior, researchers tend to emphasize social perceivers as activated actors, heavily influenced by social environments.

Social cognition, as an area of study, emphasizes unabashed mentalism, social settings, cross-fertilization, and real-world social issues. Social cognition departs from the general principles of cognition in some ways: Compared to objects, people are more likely to be causal agents, to perceive as well as being perceived, and to involve intimately the observer's self. People are difficult targets of cognition; because they adjust themselves upon being perceived, many of their important attributes (e.g., traits) must be inferred, and the accuracy of observations is difficult to determine. People frequently change and are unavoidably complex as targets of cognition. Hence those who study social cognition must adapt the ideas of cognitive psychology to suit the specific features of cognitions about people.

Some of the most exciting recent developments include work on social cognitive affective neuroscience, adding to insights about the special status of emphatically social cognition at the neural level, with particular systems implicated in distinctly social cognitive processes. Complementing that work are insights from cultural psychology, examining variations in the way humans solve the challenge of making sense of each other in a variety of settings.

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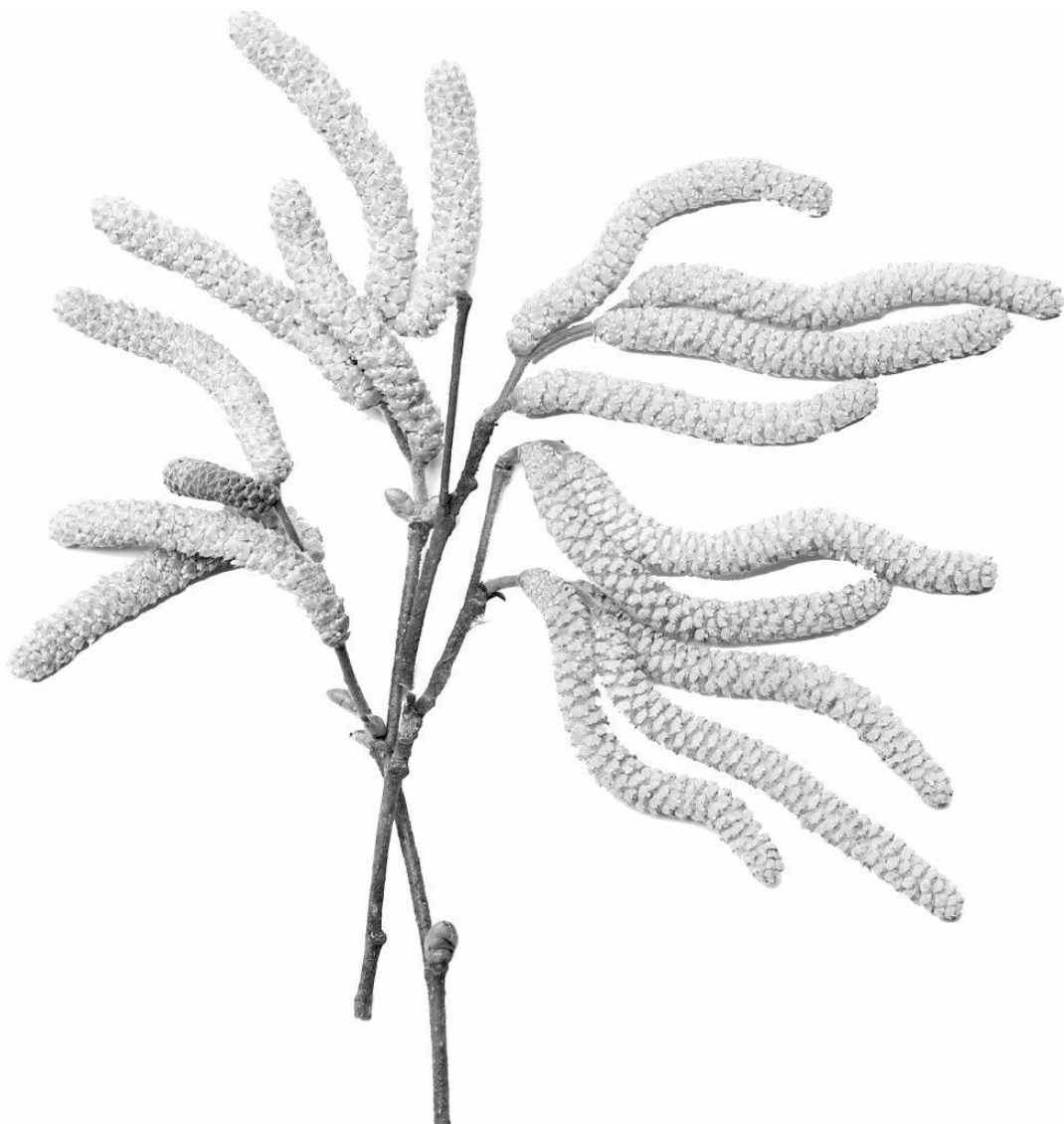
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PART ONE

Basic Concepts in Social Cognition

We open by introducing the conceptual tools of the trade: dual processes, attention, and representation. In the case of dual-process approaches, most social cognition research assumes that people can make sense of themselves and others either by using fast, cognitively cheap, and loosely accurate strategies (operating almost on automatic) or by using slower, cognitively expensive, and potentially more evidence-based strategies. One basic process, attention, easily orients to faces and other socially salient input (an odd-looking person, a motivationally relevant person); attention drives further inferences. Finally, people represent each other (and themselves) in memory, often making lasting impressions that anchor all the interactions that follow.



2

Dual Modes in Social Cognition

- Automatic Processes Make Social Thinking Efficient
- Controlled Processes Make Social Thinking Flexible
- Motivations Influence Which Modes Operate
- Models Describe the How and When of Automatic and Controlled Processes

First impressions really do count. People judge each other within a fraction of a second, for better or worse. Luckily, under some circumstances people are capable of going beyond those split-second impressions. The relatively automatic first impressions nevertheless anchor subsequent thinking, so they are difficult to undo. Conventional wisdom is correct in this instance – that first impressions matter – but common sense doesn't know the half of just how automatic impressions can be, nor does common sense reveal much about exactly how the deliberate processes operate when they do kick in.

This chapter addresses these two modes of social cognition, automatic and deliberate, a theme that appears and reappears throughout the book. The dual-mode approach has become so established that one edited volume collected thirty-some chapters on this framework (Chaiken & Trope, 1999) and one social psychology handbook devoted a full chapter to it (Wegner & Bargh, 1998). The mind contains a multitude of processes, so these models aim to explain the diversity of people's thoughts, feelings, and behaviors toward each other, most models assuming more than one core process (Aarts, 2012; Gilbert, 1999; Happé, Cook, & Bird, 2017; Nosek et al., 2012; Payne, 2012; Winkielman & Schooler, 2012).

The **motivated tactician**, described in Chapter 1, refers to people's tendency to rely either on relatively automatic processes or alternatively on more effortful ones, depending on situational and motivational demands. The term *tactician* implies that people choose modes in the thick of the action, in the midst of dealing

with other people, thinking harder or less hard as motivation demands. However, people typically do not consciously choose between automatic and controlled processes. Automatic processes influence the motivations that trigger different modes of social cognition, as well as behavior that results.

This chapter begins by explaining automatic processes, then describes controlled ones. Next, we examine the motivations that move people between modes. We then illustrate two-mode models, anticipating their appearance in subsequent chapters. Finally, we close with some counterpoints to the prevailing two-mode view.

AUTOMATIC PROCESSES MAKE SOCIAL THINKING EFFICIENT

Automatic processes come in all varieties. Everyday examples include times when people seem not to be thinking; early research dubbed this **mindlessness** (Langer, Blank, & Chanowitz, 1978). Table 2.1 shows the progression from the most automatic toward controlled processes. Our discussion begins with the purest form of **automaticity**, which contains all or most of the core features: unintentional, uncontrollable, efficient, autonomous, and outside awareness (unconscious) (Bargh, 1997), as well as being goal independent, purely stimulus driven, and fast (Moors & De Houwer, 2006).

Table 2.1 Varieties of automatic and controlled processes

Mode	Definition
Full automaticity	Unintentional, uncontrollable, efficient, autonomous, unconscious, goal-independent, purely stimulus-driven, fast responses
Subliminal priming, or preconscious	Prime registers on senses, but no awareness of it or its effect on responses; depends on context
Conscious priming, or postconscious	Conscious perception of prime, but no awareness of its effects on responses; depends on context
Individual differences in chronic accessibility	Can be preconscious or postconscious, habitual processing by particular categories or concepts, as if chronically primed; depends on person (role, personality, culture, practice – a process called proceduralization)
Goal-dependent automaticity	Intentional control starts process, but without subsequent awareness, need to monitor completion, or intending all specific outcomes Unintended effects of goal-dependent automaticity include failures of thought suppression and unwanted rumination (Table 2.2)
Intent	Requires having options, especially obvious when making a hard choice, and paying attention to the intended response (Table 2.3)
Conscious will	Experienced when a thought precedes, fits, and explains a subsequent action
Consciousness	Defined variously (Table 2.4)
Full control	Intentional responses with conscious awareness

Subliminal Priming

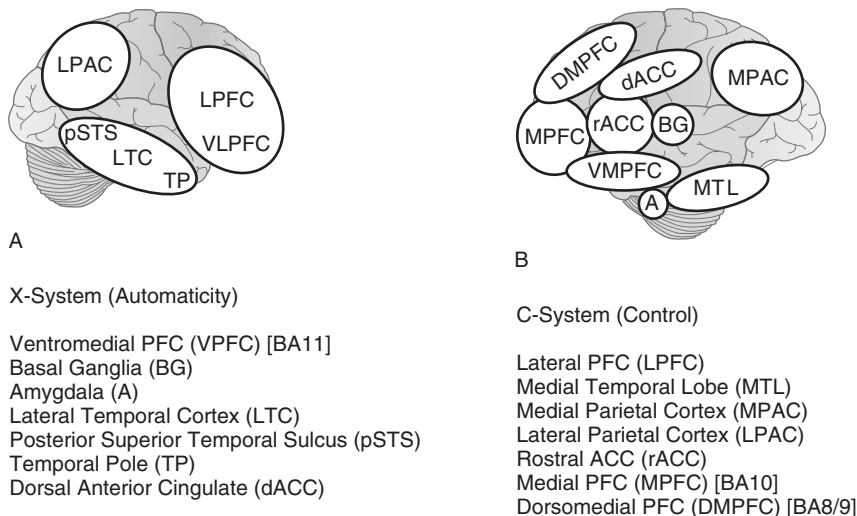
Consider the following study (Bargh, Chen, & Burrows, 1996): Undergraduate participants in a psychology experiment saw 4 to 20 circles on a series of screens for 3 seconds each time and had to judge whether they were odd or even in number. After 130 tiresome trials, the computer suddenly beeped and displayed an error message indicating that none of the data had been saved and that the experiment would have to restart. Needless to say, participants reacted. Without their prior knowledge (although with their subsequent consent), their faces were videotaped as the computer and experimenter conveyed the bad news. Also unknown to the participants, just prior to each set of circles, they had seen a black-and-white photo of an African American or European American man, displayed at subliminal speeds (13–26 milliseconds). Participants were non-African American, and their facial expressions were reliably more hostile when they had been exposed to a series of Black faces than when they had been exposed to White faces. Hostile emotions were primed, especially ready to appear under provocation.

Subliminal priming occurs when a concept is activated by the environment, but at exposure times below conscious awareness. Subliminal priming of emotion appears reliable. Besides Bargh et al. (1996), rapidly presented smiling and frowning faces influence later liking for Chinese ideographs, which were otherwise neutral and without meaning to the research participants (e.g., S. T. Murphy, Monahan, & Zajonc, 1995). A host of other studies similarly show how affect can be conveyed by verbal concepts that are primed by being flashed below awareness (Bargh & Williams, 2006). For example, priming hostility-related words affects impressions of others (one of the earliest demonstrations being Bargh & Pietromonaco, 1982).

The neural mechanisms of immediate emotional priming likely include the **amygdala**, an interior almond-shaped pair of brain regions implicated in detecting emotionally significant stimuli (Figure 2.2; Phelps, 2005). Faces with fearful expressions elicit amygdala responses even when presented subliminally (Whalen et al., 1998). Emotionally arousing words presented rapidly are easier to detect than more neutral words; the amygdala again is key because patients with amygdala lesions (damage) are less able to detect these same words (A. K. Anderson & Phelps, 2001). The amygdala orients to automatically detecting cues that are negative (Lieberman, Gaunt, Gilbert, & Trope, 2002) or extreme (W. A. Cunningham, Raye, & Johnson, 2004; Todorov, Said, Engell, & Oosterhof, 2008), suggesting a sensitivity to motivationally relevant stimuli.

A variety of other regions may be implicated in automatic processes more related to social rewards or positive **valence**, for example, the **orbitofrontal cortex** (also called vmPFC, i.e., **ventral** (lower) **medial** (midline) prefrontal cortex: L. T. Harris, McClure, van den Bos, Cohen, & Fiske, 2007; W. van den Bos, McClure, Harris, Fiske, & Cohen, 2007). Also reward related are the right **insula** (W. A. Cunningham et al., 2004), **basal ganglia** (Lieberman et al., 2002), and ventral **striatum** (Cikara, Botvinick, & Fiske, 2011; O'Doherty, 2004). Evidence clarifying these valence linkages develops as we write.

Besides the amygdala and reward areas, the more reflex-like, relatively automatic forms of social cognition apparently implicate (a) the **lateral** temporal cortex (posterior **superior temporal sulcus**, pSTS, and temporal pole), (b) the ventral medial prefrontal cortex (vmPFC), and (c) the **dorsal** anterior cingulate cortex (dACC). Figures 2.1 and 2.2 show the locations of these areas, for those inclined toward brain imaging. For those not so inclined, the point is that relatively automatic social cognitive-affective processes dissociate from relatively controlled ones in the neural areas typically activated (Lieberman, 2007).



Figures 2.1 and 2.2 Hypothesized neural correlates of the C-system supporting reflective social cognition (analogous to controlled processing) and the X-system supporting reflexive social cognition (analogous to automatic processing) displayed on a canonical brain rendering from (Figure 2.1) lateral (side) and (Figure 2.2) medial (center) views. Both processes appear in both medial and lateral locations, as listed

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Subliminal priming is not limited to emotionally significant cues; emotionally neutral concepts also can be primed below awareness (Nosek et al., 2012; Payne, 2012). Conceptual priming that is not primarily affective is likely to invoke brain systems particularly involved in pattern-matching, categorizing, and identifying processes that implicate the inferior temporal cortex (Lieberman et al., 2002). A prime's perceptual pattern and cognitive category influence processing of related subsequent stimuli, especially ambiguous ones; the neural accounts fit the cognitive activation data.

In addition to priming emotions and neutral cognitions, subliminal priming can affect behavior (Aarts, 2012; Ferguson & Bargh, 2004a). In the Bargh et al. (1996) study that opened this section, after participants' subliminal exposure to different

race faces and subsequent provocation, the experimenter privately rated the participant's behavior on irritability, hostility, anger, and uncooperativeness, based on their interaction. Non-Black participants primed with Black faces behaved in more hostile ways when provoked.

Subliminal priming studies are not easy to run; they require that the prime be displayed precisely and reliably for exceedingly brief times, and often that the prime be masked immediately afterward by perceptually related but conceptually neutral stimuli. For example, a subliminally primed word might be immediately followed by a scrambled letter-string of the same length; a subliminally primed face might be immediately masked by a random pattern of color-matched clusters covering the same visual area. A **subliminal prime** has to pass the objective standard of registering on the senses but not exceed the subjective standard of registering on awareness. The delicate threshold between perceptual-but-not-conscious impact depends on the prime, participant, current goal, context, and technical features of the presentation screen (Dijksterhuis & Bargh, 2001). Each factor can change a prime's tendency to be activated above or below perception, and, if so, above or below consciousness. All this means that advertisers, for example, cannot easily convey subliminal messages, although in theory they could (Cooper & Cooper, 2002). The sensitivity of behavior priming necessarily makes it challenging to replicate (Cesario, 2014). Priming is inherently situated in a particular context (Loersch & Payne, 2011).

So far, the illustrative experiments all exemplify the most subliminal, **preconscious** form of automatic processing, in which people are not aware of the priming cue, nor of its effects on their reaction to a relevant stimulus. Although the most dramatic automatic response, fully automatic processes are likely to be rare. This kind of empirical demonstration most usefully makes the theoretical point that even unconsciously activated concepts prime related concepts, which then shape the interpretation of subsequent stimuli, all outside awareness. This fits the most stringent definition of pure **automaticity**, which, as noted earlier, is unintentional, uncontrollable, efficient, and autonomous (Bargh, 1997), as well as goal independent, purely stimulus driven, unconscious, and fast (Moors & De Houwer, 2006).

METHODS FOCUS: A NOTE ON REPLICABILITY OF PRIMING EFFECTS

A student approached me, this book in hand, after I gave a visiting lecture. I expected him to ask me to sign the book, as people occasionally do. Instead, he confronted me with the news that his professor taught his class that priming is a load of bunk, and that the book should not include it any more.

As I tried to explain to the student, the patterns of priming results are more complicated than a simple bunk/not-bunk judgment. As the text indicates, affective priming appears reliable across primes (smiley/frowning faces or emoticons; pleasant/unpleasant

(Continued)

words; ingroup/outgroup), across conscious and unconscious processing, and across labs. Affective priming spills over to guide the evaluation of otherwise neutral stimuli. This is so well established that measuring subtle attitudes depends on this premise (see Chapters 10 and 11).

Likewise, conceptual priming appears reliable. Cognitive psychology established this over decades of research. If I say “salt,” the concept that comes to mind is not “orangutan,” or even “pauper,” but more probably “pepper.” Frequently paired terms cue each other, as do synonyms (“cat” and “kitty”). (See Chapter 7, illusory correlation.) Network theories of memory depend on this principle, as do many theories of person memory (Chapter 4).

Just as affect primes similar affect, and cognition primes similar cognition, does behavior prime similar behavior? Does cognition prime related behavior? Behavioral priming is more controversial. As noted, prominent labs have reported some of the most fascinating and provocative findings in the field (see cited studies in the preceding sections). Others have debated their replicability, but it’s complicated (for thoughtful recent reviews, see Cesario, 2014; McShane, Tackett, Böckenholt, & Gelman, 2019; Nelson et al., 2018; Pettigrew, 2018).

While the behavioral prime results are being settled by the weight of new evidence, the student can tell his professor that affective and cognitive priming are safe bets. As with any research, the study has to be precise and rigorous. But reports that priming is dead seem exaggerated.

Conscious Priming

Less dramatic but probably more impactful on a daily basis, **postconscious automaticity** entails conscious perception of the prime but no awareness of its effects on subsequent reactions (see Table 2.1). In one study, participants first imagined a day in the life of a typical professor, listing activities and lifestyle. Then they played Trivial Pursuit, the knowledge quiz game. Primed participants actually outscored other participants who had skipped the professor-priming task (Dijksterhuis & van Knippenberg, 1998). Although the mechanism remains unclear, they may have been prompted to try harder, use better strategies, or trust their hunches. Priming a soccer hooligan or the trait of stupidity was not helpful to the knowledge test, but priming the trait of intelligence was. As another example, students unscrambled word lists to make sentences that primed the category “elderly” (and thus, slowness); they walked to the elevator more slowly after the experiment (Bargh et al., 1996). In still another study in that series, students covertly but consciously primed with the trait “rudeness” were faster to interrupt another person.

Many priming studies replicate with either postconscious or preconscious priming, as in the Bargh et al. (1996) series. As another example, students primed either consciously or preconsciously with words related to the elderly then expressed more conservative attitudes; others primed with the skinhead category expressed more prejudiced attitudes (Kawakami, Dovidio, & Dijksterhuis, 2003). Both pre- and