| Agenda 2000 | **Social cognition: Learning about what matters in the social world** |
| --- | --- |

E. TORY HIGGINS*

*Columbia University, USA*

*Abstract*

*Social-cognitive principles underlie people's learning about what matters in the social world. The **benefits** of these social-cognitive principles reveal essential aspects of what it means to be human. But these social-cognitive principles also have inherent **costs**, which highlight what it means to be 'only human'. Social cognition is 'social' because **what** is learned concerns the social world, and **where** the learning takes place is in the social world. This paper reviews the benefits and costs of both sides of social cognition: (1) the **cognition of social psychology** principles of organization, explanation, knowledge activation and use; and (2) the **social psychology of cognition** principles of shared reality role enactment, social positions and identities and internal audiences. The fact that there are inherent costs of the **same** social-cognitive principles for which there are essential benefits affords a new perspective on social-cognitive costs that is different from either the classic 'conflict' perspective or the more current 'limited capacity' and 'dual-process' perspectives. This 'trade-off' perspective deepens both our understanding of the true nature of these principles and our appreciation of our common humanity. Copyright © 2000 John Wiley & Sons, Ltd.*

Social psychologists have historically taken a cognitive approach to understanding social behavior (see Zajonc, 1980), whether that approach involved the Gestalt principles of perception (e.g. Krech & Crutchfield, 1948) or the information processing principles of cognition (e.g. Ostrom, 1984). In order to review the area of social cognition, therefore, I must first define boundary conditions that distinguish it from social psychology more generally, as well as from non-social cognition. Let me begin with the latter issue.

There are several thoughtful discussions in the literature about how social cognition differs from non-social cognition (e.g. Fiske & Taylor, 1984; Forgas, 1981; Heider, 1958; Kretch & Crutchfield, 1948; Ostrom, 1984; Schneider, Hastorf, & Ellsworth,

1979; Tagiuri, 1969; Zajonc, 1980). There are some distinguishing properties of social cognition that are especially significant. Not only are observers concerned with the relations between persons, such as love or power between two persons, but they can also be one of the persons in the relation. Not only are observers concerned with a target person's underlying intentions and feelings, but they can also create the social situation in which the target's intentions and feelings arise and be the object to which they are directed. Not only are observers concerned with the viewpoint of the target person, but they can also be motivated to construct a shared viewpoint with their target. Not only are observers concerned with inferring the dispositions and qualities of the target person, but the target person can also be concerned with what inferences these observers make. Not only are observers concerned with how they are perceived by the target person, but the target person with whom they are concerned can be themselves.

This interpersonal, intersubjective and reflexive character of social cognition helps to distinguish it from non-social cognition. But it is also a defining characteristic of social psychology more generally. Max Weber (1967) stated: 'In "action" is included all human behavior when and in so far as the acting individual attaches a subjective meaning to it ... Action is social in so far as, by virtue of the subjective meaning attached to by the acting individual (or individuals), it takes account of the behavior of others and is thereby oriented in its course' (pp. 156–157). That is, action is 'social' when its meaning and orientation takes account of other people (see also Thomas & Znaniecki, 1918). This viewpoint was also expressed by Gordon Allport (1968) who defined social psychology as 'an attempt to understand and explain how the thought, feeling, and behavior of individuals are influenced by the actual, imagined, or implied presence of others' (p. 3).

Thus, social cognition has been distinguished from non-social cognition in ways that reveal the essential interpersonal nature of social cognition but fail to distinguish it from social psychology. One solution to this problem would be to select a particular content within social psychology as social cognition, with the remaining contents not being social cognition. Indeed, this has been a popular solution historically in social psychology textbooks and handbooks. Specifically, social cognition was equated with the area of person perception, with the two terms often being used interchangeably. Person perception concerned people's judgments, impressions, explanations and predictions of some target person's attributes and behaviors, individual differences in these perceptions, and accuracy and bias in these perceptions (e.g. Bruner & Tagiuri, 1954; Tagiuri, 1969; see also Schneider, Hastorf, & Ellsworth, 1979).

This solution did not satisfy the social psychologists in the late 1970s who were excited about the significance of social cognition for social psychology more generally. They believed that social cognition extended across traditional social psychological areas, such as attitude change, interpersonal communication, group decision making, and so on. The relevance of social cognition beyond person perception to other social psychological contents is obvious in the most recent handbooks of social psychology (see Gilbert, Fiske, & Lindzey, 1998; Higgins & Kruglanski, 1996; see also Markus & Zajonc, 1985). Thus, one cannot distinguish social cognition from social psychology by making social cognition just one content area within social psychology.

An alternative solution is to recognize that social cognition emphasizes the cognitive level of analysis within social psychology rather than all possible levels.

Consider again Gordon Allport's classic definition of social psychology as an attempt to understand how the thought, feeling, and behavior of individuals are influenced by the actual, imagined, or implied presence of others. Such social influence includes social facilitation and impairment effects of the mere presence of others, which can be addressed at a biological level of analysis (see Zajonc, 1966), and group performance effects of democratic, authoritarian, and *laissez-faire* social climates, which can be addressed at a social level of analysis (see White & Lippitt, 1968). These are social psychological issues without being social cognition because they concern the influence of others on behavior without emphasizing the cognitive level of analysis. Thus, not all of social psychology is social cognition because not all of social psychology emphasizes the cognitive level of analysis.

Social cognition, then, is 'social' because it emphasizes the interpersonal, inter-subjective and reflexive character of cognition, and it is 'cognitive' because it emphasizes the cognitive level of analysis within social psychology. One side of social cognition is nicely captured in Gordon Allport's (1968) question, 'What happens to the mental life of the individual when he enters into association with others' (p. 1)? This question highlights the **social psychology of cognition**. The other side of social cognition is the **cognition of social psychology**. To borrow Allport's expressive style, a question that captures the flip side might be 'How does the mental life of the individual influence his or her associations with others?' Social cognition, then, concerns the influence of social and cognitive variables on one another, and social-cognitive principles are those that contribute to understanding this mutual influence.

Now that the boundary conditions of social cognition have been established, we need to consider its essential nature. We know it has something to do with the interrelations between mental life and association with others, but how should these interrelations be characterized? To begin with, why should individuals relate their mental life to their associations with others? James (1890/1948) stated: 'Primarily then, and fundamentally, the mental life is for the sake of action of a preservative sort' (p. 4). Thus, the first step in understanding the nature of social cognition is to recognize that individuals' mental life has fundamental survival value through its contribution to adaptive action (see Fiske, 1992; Ostrom, 1984). Ostrom (1984) argued that action is the root of social knowledge: 'American social psychologists shared the view that human action was the basis of social knowledge ... It was obvious to these social psychologists that humans were "doers" rather than "watchers" ... a person learns about the world through acting on it and experiencing the consequences of that action. Baby's rattle feels smooth to the touch of finger, cheek and tongue, and makes noise when shaken ... Integral to both social and nonsocial knowledge is the actions of the self' (p. 17).

Learning is used to regulate feelings and thoughts as well as action, and humans are 'watchers' and 'listeners' as well as 'doers'. They learn from observing others' actions and their consequences as well as from acting on the world (see Bandura, 1986), and they learn from others' communications and instructions. When considering how learning occurs, it is especially important for social cognition to include people learning from observing others and listening to others because such learning is **social** learning. This kind of learning does not involve people learning on their own about how the world works but learning in relation to observing others' actions and receiving their messages. Such learning is shared with others and the **shared reality**

aspect of social cognition is one of its critical properties (for reviews, see Hardin & Higgins, 1996; Levine, Resnick, & Higgins, 1993).

The process of learning is also social in another sense. Although individuals can learn about the world on their own, learning typically takes place within a social context. For example, babies rarely learn about the properties of their rattle solely on their own. Typically, they learn about their rattle in association with others, when playing with their parents, siblings, or other caretakers. Thus, learning about non-social objects also usually takes place in association with others, which creates a shared reality about these object properties as well. It is critical that people learn what matters to others about some activity or object, such as learning about eating as an activity or, especially, about oneself as an object. For example, children are motivated to learn how their appearance and behaviors influence caretakers' responses to them in order to increase the likelihood that the caretakers will provide them the nurturance and security they need to survive (see Bowlby, 1969, 1973; Cooley, 1902; Mead, 1934; Sullivan, 1953).

Considering both what is learned and how learning takes place, social cognition is 'social' because it is concerned with the learning that is about associations with others, and the learning that takes place in association with others. In both cases, the learning concerns what matters when associating with others. The cognition of social psychology emphasizes the principles involved in learning about social objects—the fact that **what** is learned concerns the social world. The social psychology of cognition emphasizes the principles concerning the context of learning about the world—the fact that **where** the learning takes place is in the social world. Social cognition, then, concerns **learning about what matters in the social world**.

Characterizing social cognition as learning about what matters in the social world highlights the fact that social-cognitive principles are useful. They exist because they are adaptive, even necessary, for human survival. They are natural principles. They provide essential benefits to self-regulation and social regulation. By considering the benefits of social-cognitive principles, social cognition provides a unique perspective on what it means to be human. But this is not the whole story. These **same** natural principles also have self-regulatory and social regulatory costs (see also Kruglanski, 1992; Smith & Mackie, 1995). They produce errors and biases in memory, judgments and decision making that can be detrimental to interpersonal and intergroup relations. By considering the inherent costs of social-cognitive principles, social cognition provides a unique perspective on what it means to be 'only human'. The purpose of this paper is to consider both the benefits and the costs of the same social-cognitive principles. I believe that by understanding the **trade-offs** of the same social-cognitive principles, we deepen both our understanding of the true nature of these principles and our appreciation of our common humanity.

The purpose of this review is to illustrate how basic principles from the cognition of social psychology and the social psychology of cognition have both benefits and costs. The review will necessarily be limited in scope. Social cognition has a long history in psychology and the social sciences more generally. Within psychology, important contributions to social cognition have been made in social psychology, personality, developmental psychology, abnormal and clinical psychology, cognitive psychology, organizational psychology, and community psychology. It is not possible to review all these contributions here. It is also not appropriate to the mission of this special series of articles in the *European Journal of Social Psychology*. My review

should and will concentrate on the contributions of social psychology to social cognition.

Even within these limits there are far too many contributions to cover in a single journal article. Given the historical nature of this special series, and the fact that Annual Review and Advances chapters discuss current contributions, I felt it might be useful to reflect on what social cognition has taught us over the last half century. I looked for a general take-away message from social cognition. I am not suggesting, of course, that the message of 'trade-offs' in this paper is the only take-away message of social cognition. I believe it is an important message, however, because it has implications for the scientific, applied, and humanistic contributions of social cognition. My objective, then, was to take a broad and historical perspective on general social-cognitive principles in order to illustrate the trade-offs of social cognition.

Illustration requires selection, which necessarily excludes some very important principles. An especially difficult problem was how to deal with the important work on the interface between motivation and social cognition. Given that people learn about what matters in the social world, motivation is inherent to social cognition. Motivation and social cognition are synergistic in many ways (see, for example, Gollwitzer & Moskowitz, 1996; Kruglanski, 1996; Kunda, 1990; Sorrentino & Higgins, 1986). One especially significant aspect of the motivation–cognition interface concerns how social-cognitive processes are influenced by motivational variables, such as feelings (e.g. Forgas, 1992; Schwarz & Clore, 1987) and epistemic motivations (e.g. Kruglanski & Webster, 1996). Given space constraints, it was not possible to review the motivation–cognition interface in this paper. Fortunately, other articles in this series will cover important aspects of this interface.

My review of the social-cognitive principles will be divided into two sections. The first section will describe cognition of social psychology principles, and the second will describe social psychology of cognition principles. Both benefits and costs of each principle will be described. The paper concludes by discussing how the story of 'trade-offs' in social-cognitive principles differs not only from the classic 'conflict' perspective but also from the more recent 'limited capacity' and 'dual-process' perspectives.

## PRINCIPLES OF THE COGNITION OF SOCIAL PSYCHOLOGY

This section of the paper describes some major principles of the cognition of social psychology. How do individuals learn the workings of the social world? What are the benefits of acquiring and using social knowledge? People satisfy their needs and meet their goals in association with others. To function effectively, they learn how the social world works and apply this knowledge to regulate themselves and others. The social-psychological perspective on learning about the social world has emphasized the following general types of principles: principles of **organization**, of **explanation**, and of **knowledge activation and use**. This section describes each of these principles and begins by discussing how its functioning provides an essential benefit to people. The inherent trade-offs of the principles are then revealed by discussing how the same principle can also have costs.

**Organization**

The historical roots of the cognition of social psychology are found in the Gestalt principles of perception, which emphasized that people's experience is organized (e.g. Krech & Crutchfield, 1948; Lewin, 1951). The organizing process both simplifies input, which is economical, and connects it to knowledge of related objects or events that allows the perceiver to 'go beyond the information given' (Bruner, 1957a). By connecting one isolated elementary input to other kinds of information, organization provides answers to questions such as 'What is it?' 'What's happening?' or 'What's going on?' The notion that experience is organized is reflected in social cognition variables at several levels of organization. Organization occurs from categorization of a single input about a person, to forming an overall impression of a person from separate categorizations of the person, to forming an overall impression of a group from categorizations of group members, to forming a model of the interrelations between different categorizations.

*Categorization*

When people categorize or identify input, they organize or summarize several different pieces of information. Rather than responding to each input as unique and being limited to its here-and-now properties, categorization takes advantage of past experiences to provide additional information. Categorization is a necessary process if perceivers are to learn from past experiences. If every input is treated as unique, there will be no benefit from exposure to previous instances.

One major benefit of categorization is to add information that is missing from the current exposure to a category instance. For example, seeing for the first time a friend's new puppy who is lying on a mat does not provide information about how one might play with the puppy. But activating the category of puppy can provide information about how to interact with puppies. This information-augmentation function of categorizing social objects has been studied extensively under the heading of exemplars, schemata, scripts, and associative networks (see, for example, Bartlett, 1932; Brewer & Nakamura, 1984; Cantor & Mischel, 1979; Schank & Abelson, 1977; Wyer & Carlston, 1979; for reviews, see Carlston & Smith, 1996; Hastie, 1981; Taylor & Crocker, 1981). There is also evidence that organizing information into categories can facilitate memory for category-related information that was present in an input (see, for example, Hamilton, Katz, & Leirer, 1980). Anderson and Pichert (1978), for example, found that participants in an imaginary tour through a home remembered additional information about the home when they were later told to imagine that they had toured the home as a 'burglar' or as a 'homebuyer'.

*Overall Impressions*

People also organize separate elements of categorical information about a target person into overall evaluative impressions of the person. Such organization can occur in more than one way. The meanings of the different categorical elements can be interrelated to one another, thereby constructing a referential whole that is different

than the sum of its parts, and then this constructed reference as a whole is evaluated (e.g. Asch, 1946; Hamilton & Zanna, 1974). This configural integration differs from an algebraic integration in which the independent evaluations of each separate categorical element are combined algebraically, without there being any change in meaning of the separate elements (e.g. Anderson, 1974; Fiske & Pavelchak, 1986). The same two categorical elements, such as 'surgeon' and 'casual', would produce a positive impression when integrated algebraically but a negative impression when integrated configurally.

Information about different individuals can also be organized into representations of a group to which the individuals belong. Depending on both functional value and processing capacity, there are different ways that the information can be organized. The trait-related behavior by each group member can be organized in terms of which behaviors are associated with each individual group member or the behaviors can be organized as behaviors associated with the group as a whole. As for impressions of individuals, this difference in organization can influence evaluations of the group. If a group has a minority of members who produce many negative behaviors, for example, the group will be evaluated more negatively when the behaviors are associated with the group as a whole rather than with each individual group member (see Rothbart, Fulero, Jensen, Howard, & Birrell, 1978).

### Consistency Models

People not only organize their impression of a single person or a single group. They also organize their impression of how different persons or groups relate to one another. More generally, they form a model of the interrelations between and among categorical elements. An historically important version of such models in social psychology has been the 'consistency' models (see, for example, Brown, 1965; Eagly & Chaiken, 1993; Zajonc, 1968), the most famous of which are cognitive dissonance theory (Festinger, 1957) and balance theory (Heider, 1958). In Festinger's (1957) cognitive dissonance theory, for example, the relation between two cognitive elements, $x$ and $y$, constitutes an inconsistent or dissonant state when not-$x$ follows from $y$. In Heider's (1958) balance theory, the interrelations involving two or three cognitive elements constitutes an inconsistent state or state of imbalance when multiplying across all the positive or negative signs of the relations yields a negative product. Consistency models propose that people are motivated to organize (and, if necessary, modify) the elements so that the interrelations are consistent.

The proposal of consistency models that people prefer to organize the interrelations among categorical elements in a consistent pattern (e.g. balanced or consonant) reflects another function of organization—to provide coherence. There are other ways to create a coherent organization and the nature of coherence varies for different kinds of interrelations. De Soto (1960), for example, found that participants learned symmetrical relations among pairs of individuals more easily when the relations concerned who did or did not confide in one another but learned asymmetrical relations more easily when the relations concerned who did or did not influence one another.

Organizing input information also concerns the issue of how people deal with new information that is consistent, inconsistent, or irrelevant to their current organized information. Which kind of information are they more likely to remember? From a

functional perspective, one would expect that information relevant to previously organized information would be better remembered than irrelevant information, and this is indeed the case. It is less clear whether information consistent or inconsistent with previously stored information should be better remembered. As described earlier, consistent information maintains coherence. Given this function supported by previous consistency models, Hastie and Kumar's (1979) finding of better memory for inconsistent information was a surprise. But better memory for inconsistent information is also functional because inconsistent information provides new information that should receive attention, thereby enhancing memory. Recent evidence suggests that consistent or inconsistent information is better remembered depending on the function that it serves (e.g. Stangor & Ruble, 1989).

### Costs as Well as Benefits of Organization

Organizing input information has major benefits, such as connecting input to stored knowledge about related objects or events that allows the perceiver to 'go beyond the information given'. But organizing input information also has costs. One major cost is that it can result in the perceiver going too far beyond the information given. For example, when a target person is perceived to be a member of a social category, attributes associated with the category will be applied to the target person even if he or she does not possess them (e.g. Secord, Bevan, & Katz, 1956). In addition, by applying the stereotypic attributes of the social category rather than attending to individuating attributes of each member, outgroup members are perceived as being more alike than is in fact the case (e.g. Park & Rothbart, 1982).

Organizing information on the basis of stored knowledge about categories and their interrelations also facilitates memory for prior events. On the other hand, such organized information can also produce memory distortions. Spiro (1977), for example, found that people reconstructed information about the story of a couple so as to make the success or failure of their relationship reasonable from a balance theory perspective, and, indeed, were especially confident in the accuracy of their memory distortions. People also use their theories about how life events are temporally organized to reconstruct their own past histories to fit the current state of their lives, thus producing memory distortions (see Ross, 1989). Additional costs of organizing processes are described in the concluding section of this paper.

### Explanation

Generally speaking, organization answers questions like 'What is it?' or 'What's going on?' The answers to these questions can themselves guide self-regulation. Categorizing the behavior of a man next to you on the sidewalk as 'angry', for example, is sufficient to motivate avoidance. Other functions are served, however, by proceeding to follow-up questions such as 'Why did that happen?' or 'How did that happen?' By understanding the source of some behavior or event, people can react to it more appropriately. If you infer that the man near you on the sidewalk is angry at the city because he tripped on a hole in the sidewalk, then avoiding him is less critical than if you infer that he is angry at you because he believes you tripped him. Understanding

how something happened also allows future planning to make something positive happen again if possible and make something negative not happen again if possible. If you did trip the man on the sidewalk, understanding how that happened could suggest ways to prevent it from happening again. Thus, finding explanations for what happens serves additional functions beyond organizing information.

*Causal Attributions*

The kind of explanation that has received the most attention by social psychologists is causal attribution. Beginning with Heider's (1958) classic models of causal attribution, social psychologists have been concerned with the kinds of causal analyses that people use to explain the actions of themselves and others (see, for example, Bern, 1965; Jones & Davis, 1965; Kelley, 1973; Kruglanski, 1975; Weiner & Kukla, 1970; for reviews, see Anderson, Krull, & Weiner, 1996; Ross & Fletcher, 1985). Trope (1986) explicitly distinguished the initial identification stage from the subsequent causal inference stage and demonstrated that the situation in which an act occurs can have independent, and even opposite, effects at the identification and causal inference stages.

At the causal inference stage, there has been special interest in the causal analyses that lead people to attribute an act to a disposition of the actor rather than to something about the situation in which the act occurred (e.g. the entity to which the act was directed or the surrounding circumstances). This interest reflects the fact that it is highly functional for future self-regulation, whether the actor is oneself or someone else, to determine whether the actor is likely to behave in the same way again. Was this man angry simply because he tripped, which is not likely to happen again, or is this man the kind of dispositionally angry person who is likely to get angry again? When people have frequent interaction with someone across a variety of situations, it is functional to make more situationally contingent dispositional inferences, such as understanding that this man is the kind of person who gets angry when in physical pain but not when insulted (see Mischel & Shoda, 1995).

It is not only functional to distinguish between person and situation attributions. It is also functional to distinguish within each of these kinds of causal attributions. It matters whether a person's failure on a task was caused by a lack of ability or whether it was caused by a lack of motivation or effort (see, for example, Heider, 1958; Weiner & Kukla, 1970). For example, training children to attribute their failures on problems to a lack of effort rather than a lack of ability can improve their future performance (see Dweck, 1975). It also matters whether people attribute their motivation to engage in some activity to the inherent properties of the activity or to some situational pressure to engage in the activity. For example, setting conditions that lead children to attribute their playing some activity to a future award they will receive for doing so rather than to the inherent fun of playing can undermine their future interest in playing that activity (see Lepper, Greene, & Nisbett, 1973).

*Social Theories*

The attribution literature is concerned with people's theories of causality and their use in drawing inferences about the source of their own or others' actions. Recently, social

psychologists have begun to examine other kinds of psychological theories that people possess, such as people's theories about stable and changing personal attributes, conditions for valid memories or judgments, group attribute clusters, persuasion processes, and so on (for a collection of such theories, see Wegener & Petty, 1998). These theories can also provide explanations for why something happened and these explanations serve important functions. People's theories about how some situational factor might have biased their responses can be used to correct that influence, thereby reducing the bias (see, for example, Martin & Achee, 1992; Wegener and Petty, 1995). People's theories about the source of their own recollections can be used to improve recognition memory by better rejecting false alarms (Strack & Bless, 1994).

People also develop theories about specific individuals in their lives in order to understand why they respond to them the way they do. As mentioned earlier with respect to children and their caretakers, these theories are highly functional because all individuals need to understand why significant others in their life respond to them positively or negatively. People infer that others have attitudes about and preferences for their behaviors (for developmental reviews, see Harter, 1999; Shantz, 1983). People infer that others ideally want them to be, or believe they ought to be, a certain kind of person, and understand that others' responses to them depend on whether their actions are congruent with or discrepant from these ideals and oughts held for them. These explanations for why others respond to them as they do become self-regulatory guides that serve the vital function of figuring out how to get along in one's own specific social world (see Hardin & Higgins, 1996; Higgins, 1987).

## Costs as Well as Benefits of Explanation

Whether the target actor is oneself or someone else, having explanations for events has clear benefits. It is highly functional for future self-regulation to determine whether the actor is likely to behave in the same way again. However, actors' dispositions and states can be overattributed and misattributed because of perceivers' processing limitations. The attribution literature, for example, reports a tendency for people to infer that the source of an observed behavior is a disposition in the actor that corresponds to the behavior he or she produced rather than the situation in which the behavior took place (i.e. either the entity toward which the behavior was directed or the surrounding circumstances). This tendency has been called the 'fundamental attribution error' (Ross, 1977) or the 'correspondence bias' (Gilbert & Jones, 1986). Jones and Harris (1967), for instance, found that participants shown an essay supporting Fidel Castro judged the author as personally having a favorable attitude toward Castro even though the participants were told that the author was a member of a debating team and had been assigned the position by the debating coach.

In another classic attribution study by Schachter and Singer (1962), students participated in a supposed study on the effects of vitamin supplements on vision. The participants in one condition were injected with epinephrine and were misinformed about the side effects of the drug (e.g. 'you will have an itching sensation over parts of your body'). They then waited for the supposed vision drug to take full effect in a room where they observed another person behaving in an angry or euphoric manner. Compared to participants in a control condition, these participants were more likely to express either anger or euphoria like their waiting room partner, apparently

misattributing the arousal from the drug to their emotions. Subsequent research on 'excitation transfer' further explored such misattribution effects. In a study by Zillmann, Johnson, and Day (1974), for example, the participants were first provoked by another person, subsequently engaged in strenuous physical exercise, and then were given the opportunity to retaliate against the person who had provoked them earlier. The study found that the participants misattributed to their own anger whatever unexplained arousal remained from the physical exercise, thus increasing the likelihood of retaliation.

*Aboutness*

Overattribution and misattribution exemplify how a natural and functional social-cognitive process can be problematic under certain conditions. When a response occurs, whether one's own or another person's, it potentially provides the observer with information to take action. But in order to serve this function, it is necessary for the observer to represent what the response is **about**. For example, to take action upon observing the response of another person it is necessary to represent what that person's response is about. Simply categorizing another person's facial expression as 'frowning', for instance, provides insufficient information to take action. To take action, this person's expression must be represented as being about the circumstances surrounding its production or the emotional tendencies of the person who produced it. Perceiving the responses of self or others in the world can only serve their self-regulatory function of facilitating action if they are represented as being about something.

It is also reasonable and adaptive for people to assign one meaning to the event, to represent the response as being about some **thing**. After all, people's early and everyday experiences in life concern their own responses to a particular thing, such as their mother or a favorite toy, and others' responses to them as a particular thing. Moreover, it is economical to represent responses as being about a single thing. It is natural, then, for people to assume that an observed response is in relation to a particular thing and thus to represent each response as being about some thing. It is also reasonable and useful for people to assume that whatever thing a response is about is the source of the response. Common everyday experiences involve responses to objects that are the source of the experience. When smelling a rose, one perceives the rose as the source of the fragrance one experiences. When a baby girl feels happy when hugged by her mother, the emotional response is in relation to the mother's hug and the mother's hug is the source of the response. It is natural, then, for people to assume that the thing they represent the response as being about is the source of the response. These natural assumptions can be combined into an **aboutness principle**. Several social-cognitive errors and biases can be understood in terms of this principle (see Higgins, 1998). Consider the attributional problems just discussed.

The tendency to make dispositional attributions may appear to be ubiquitous because in many studies the participants believe that the study is about an individual who has performed a certain behavior, and the procedures of the studies typically promote this perception (see Quattrone, 1982). Thus, the participants are likely to represent the behavior as being about the actor. According to the aboutness principle, then, the participants will emphasize the actor as being the source of the behavior

rather than the situation in which the behavior occurred. The aboutness principle, however, does not assume that there is some fundamental tendency to infer that the source of another person's behavior is a disposition corresponding to that behavior. Depending on additional qualities of the input or theories of the perceiver, perceivers will represent an actor's behavior as being about either the actor or the situation and infer that the source of the behavior was either the actor's disposition or situational forces, respectively. Trope and Liberman's (1996) hypothesis-testing perspective on inferential processes also assumes that either dispositional or situational biases can occur depending on what the inference is represented as being **about**. The same essay, for example, is more or less likely to be represented as being about the communicator depending on whether the perceivers are told the communicator composed the essay or copied the essay, respectively, because this influences whether they represent the essay as being about the communicator (e.g. Snyder & Jones, 1974).

Turning to the misattribution studies, the participants in the 'epinephrine/misinformed' condition of the Schachter and Singer (1962) study could not represent their response to epinephrine as being about the drug, and thus they represented it as being about the emotional situation defined by their partner in the waiting room. They then inferred that the source of their response was the emotion corresponding to the emotional situation, without taking the drug into account as a source of their response. In the Zillmann *et al.* (1974) study, those participants who had some time to recover from their exercise before re-meeting their provoker quite naturally represented all of their arousal, including the arousal remaining from the exercise, as being about their anger at the provoker. They then inferred that the source of their response was their anger at the provoker's prior behavior to them, producing retaliation, without taking their exercise into account as a source of their response.

### Knowledge Activation

In order to categorize something one has observed happen or explain why it happened, it is necessary to activate some stored knowledge that relates to the event. Thus, knowledge activation plays a critical role in social cognition. Social psychologists have been concerned with the principles that underlie knowledge activation for a long time (e.g. Bruner, 1957b; Higgins, Rholes, & Jones, 1977; Krech & Crutchfield, 1948; Smith, 1990; Taylor & Fiske, 1978; Wyer & Srull, 1986). Based on a review of this extensive literature, I recently proposed a conceptual framework for considering how stored knowledge is activated (Higgins, 1996). To begin with, knowledge cannot be activated or brought to mind unless it is present in memory. 'Availability' refers to whether or not some particular knowledge is actually stored in memory. Availability is a necessary condition for accessibility. Information can be stored in memory, i.e. be 'available', but not be easily retrieved or 'accessible'. **Accessibility** can be defined as **the activation potential of available knowledge**.

#### *Accessibility*

The accessibility of stored knowledge has been shown to increase when it has been recently primed or frequently primed (see, for example, Higgins *et al.*, 1977; Srull &

Wyer, 1979). This is functional because higher accessibility makes it easier to activate stored knowledge, and one would want stored knowledge that is related to a recent or frequent event in one's environment to be easy to activate again given that its recency or frequency makes it more likely that it will reappear. Recent or frequent evaluation of objects also increases the accessibility of the association between the object and the evaluation, which is functional because exposure to the object quickly activates whether to approach or avoid it (see Fazio, 1986). Stored knowledge that relates to events which are highly valued or are expected to occur also have higher accessibility (e.g. Bruner, 1957b). This is also functional because one would want stored knowledge that relates to things one's values in the environment or that one predicts will occur in the future to be accessible. Because individuals vary in the frequency of their exposure to different events, in their values, and in their expectancies, it would be functional for there to be individual differences in the kinds of knowledge that are chronically high in accessibility. Indeed, there are such individual differences in chronic accessibility and they have been shown to influence impressions and memory of the behaviors of target persons (for a review, see Higgins, 1996).

*Applicability*

Accessibility of stored knowledge prior to stimulus presentation is not the only variable that influences the likelihood that some stored knowledge will be activated. The 'fit' between the stored knowledge and the presented stimulus is also important (Bruner, 1957b). Like 'fit', applicability refers to the relation between the features of some stored knowledge and the attended features of a stimulus (where the features are typically categorical in nature) (see Higgins, 1996). The greater is the overlap between the features of some stored knowledge and the attended features of a stimulus, the greater is the applicability of the knowledge to the stimulus and the greater is the likelihood that the knowledge will be activated in the presence of the stimulus. An important dimension distinguishing among different types of applicability, such as unambiguous versus ambiguous versus vague, is the extent of overlap there is between the features of a stored construct and the attended features of the stimulus. It would be functional for stored knowledge to be activated more easily when it is more clearly applicable to a stimulus, and this is indeed the case (e.g. Higgins *et al.*, 1997; Higgins & Brendl, 1995; Srull & Wyer, 1979).

   Because both accessibility and applicability contribute to knowledge activation, strong accessibility can compensate for weak applicability (Higgins & Brendl, 1995). This activation rule has a long history. Wertheimer, for example, proposed that past experience 'fills in' information missing in external stimuli (see Heidbreder, 1933). More specifically, a higher excitation level from stronger accessibility can compensate for a decreased contribution to excitation level from lower applicability. Higgins and Brendl (1995) found that even when a stimulus description was extremely vague, that is, very weakly related to 'conceited', the target person's behaviors yielded 'conceited'-related spontaneous impressions when the accessibility of the construct 'conceited' was maximized. This assimilation effect of accessibility on judgment occurs because applicability under normal circumstances contributes substantially to knowledge activation. People naturally assume that a category comes to mind in the presence of a stimulus because the stimulus is a member of the category. This is a reasonable and

adaptive assumption. Indeed, a loss of this assumption would create an existential crisis.

*Salience*

The concept of salience can be used to capture the notion that not all of the features of a stimulus receive equal attention at any point in time. The salient features of a stimulus event are those features that receive selective attention, those features that draw, grab, or hold attention relative to alternative features (see McArthur, 1981; Taylor & Fiske, 1978). This property of salience concerns focal attention—selecting one object or set of features in a stimulus event for examination, rather than alternatives, prior to knowing what that object or set of features might represent (see Neisser, 1967). To distinguish salience from accessibility, it is important to restrict it to something about a stimulus event that occurs upon exposure (with no prior set) and draws attention selectively to a specific aspect of the event. Newcomb, Turner, and Converse (1965) described salient information as information at the forefront of perceivers' conscious thought that is prompted by the immediate situation in which they find themselves. By influencing which features of the stimulus event are attended, salience influences applicability and plays an important role in knowledge activation.

An object or event can be salient because of its prominence or comparative distinctiveness. Classic early studies revealed that bright, moving, or 'complex' objects were more likely to draw attention selectively (e.g. Berlyne, 1958). McArthur and Post (1977) found that the behavior of an actor was attributed more to situational causes when that actor's interaction partner (functioning as the situation) was relatively salient by being made brighter or more complex or by moving (see also Taylor & Fiske, 1975). McGuire and Padawer-Singer (1976) found that an elementary school child was more likely to include a particular personal attribute (e.g. green eyes, foreign birthplace) in his or her spontaneous self-description when that attribute, within the context of that child's classroom, was relatively distinctive (for a review of this literature, see Higgins, 1996). It is important for both security and information gain to pay attention to novelty and differences in the environment. Therefore, the influence of salience on which attributes receive attention, and thus which knowledge is activated, is functional for learning about the social world.

*Costs as Well as Benefits of Knowledge Activation*

Knowledge activation plays a critical role in social cognition because in order to categorize something one has observed happen or explain why it happened it is necessary to activate some stored knowledge that relates to the event. Higher accessibility makes it easier to activate stored knowledge, and one would want stored knowledge that is related to a recent or frequent event in one's environment, or that relates to events which are highly valued or are expected to occur, to be easy to activate again. Higher accessibility also has costs, however. Monitoring unwanted thoughts in order to suppress them can itself increase their accessibility, thereby making the thoughts more rather than less likely to reappear in the future (see, for

example, Wegner & Erber, 1992). Simply beginning hypothesis testing or problem solving with a specific hypothesis or anchor as a starting point primes stored knowledge selectively, thereby biasing the process and final conclusion (see Bassok & Trope, 1984; Mussweiler & Strack, 1999).

Biasing effects of accessibility can also be understood in terms of the aboutness principle. In the Higgins *et al.* (1977) study, for example, the participants were initially exposed to one or another set of trait-related constructs as an incidental part of a study on color naming and then later participated in a reading comprehension task where they were asked to characterize the ambiguous behaviors of a target person. The study found that the participants tended to use whichever trait construct had been primed in the color naming task to categorize the target person's behavior in the subsequent 'reading comprehension' task. Because the input behaviors were actually ambiguous, assimilating them to either primed trait was a biased judgment.

It would be natural for perceivers categorizing a behavior to represent their response to the behavior, i.e. their categorization, as being about the behavior. The perceivers would then infer that the source of their categorization was simply the behavioral information itself. The problem with this inference is that the behavioral information is only one source of perceivers' categorizations. Indeed, if the stimulus information were the only source of categorization the perceivers should categorize the behavior in an ambiguous manner. But only a small minority of perceivers in these studies categorize the behavior in an ambiguous, or even qualified, manner.

By not taking prior accessibility into account sufficiently, perceivers give too much credit to the stimulus information as the source of their categorization. This mistake, moreover, can create additional problems because the categorization itself is used later in other judgments and decisions as if it were based solely on the stimulus information. Perceivers' own personal attitudes toward the target person, for example, are influenced by their previous categorizations as if those categorizations were simply objective summaries of the target person behaviors. Thus, perceivers exposed to identical behaviors of a target person, but differing in which of their stored constructs has higher accessibility, will later express different attitudes toward the person reflecting their different categorizations that presumably were based only on the target person behaviors (see Higgins *et al.*, 1977). The importance of about-ness for accessibility biases has become even clearer recently from studies where perceivers become aware that the priming events might have influenced their response to the target person behaviors. Studies have found that priming does not necessarily produce judgments assimilated to the accessible constructs when perceivers are aware of the priming events and thus can represent their response as being about the priming events rather than about the behavior (e.g. Martin, 1986; Newman & Uleman, 1990).

The influence of salience on which attributes receive attention is also functional because it is important for both security and information gain to pay attention to novelty and differences in the environment. Salience from prominence or distinctive-ness can also have costs, however. For example, members of minority groups within a community are relatively distinctive. Likewise, negative behaviors are distinctive because they tend to be less common. The minority group/negative behavior combination, then, is likely to receive the most attention and to be perceived as having the strongest co-occurrence. Indeed, Hamilton and Gifford (1976) found that such salience can produce this kind of 'illusory correlation'.

**Knowledge Use**

Activated knowledge is not necessarily used. Social psychologists have become increasingly interested in the conditions that determine when activated knowledge will or will not be used.

*Automaticity*

One condition that has received considerable attention recently is whether the processing is automatic or controlled (for reviews, see Bargh, 1989, 1996; Wegner & Bargh, 1998). Activated knowledge is more likely to be used when processing is relatively automatic. For example, people can be aware that a prior priming event may have contributed to activation of the prime-related knowledge and thus attempt to control its influence (see Martin, 1986), but they are not aware that the chronic accessibility of the stored knowledge could also have contributed to knowledge activation and thus do not attempt to control its influence. Thus, chronic accessibility is more likely to have effects that involve automatic processing (e.g. Bargh & Pratto, 1986; Bargh & Thein, 1985) and to contribute to activating knowledge that is used (see Higgins & Brendl, 1995).

Automaticity develops for functional reasons. Because of regularities in their world, individuals are exposed repeatedly to similar events that activate particular knowledge units. It is efficient for individuals to process such regularities quickly and effortlessly, without the need for slower and more effortful controlled processing. When an event is novel or different in some way or the perceiver recognizes the possibility of biased processing, then it is functional to initiate controlled processing that might result in activated knowledge not being used (see Bargh, 1996).

*Judged Usability*

When controlled processing is initiated, another condition influencing whether activated knowledge will or will not be used is the judged usability of the activated knowledge (see Higgins, 1996). There is substantial evidence that perceivers' judgment of the relevance or appropriateness of particular information for their response can determine their use of the information (see, for example, Kruglanski, Friedland, & Farkash, 1984; Sherman & Corty, 1984; Stapel & Winkielman, 1998). Variables that influence judged usability include apparent causal significance (e.g. Ajzen, 1977), framing of a task or problem (e.g. Trope & Ginossar, 1986), conversational norms (e.g. Strack, Martin, & Schwarz, 1988), perceived representativeness (e.g. Zukier & Pepitone, 1984), and entitlement to judge (e.g. Croizet & Fiske, in press; Yzerbyt, Schadron, Leyens, & Rocher, 1994). When a situation permits controlled processing, for example, non-prejudiced persons may suppress the use of stereotypes that have been automatically activated by information about a social category member (e.g. Devine, 1989). In addition, attending more to the individuating attributes of a target person because his or her social category membership is contextually salient could suppress the use of activated stereotypes that are less accurate (e.g. McCann, Ostrom, Tyner, & Mitchell, 1985). When people's awareness of priming events is increased,

they are more likely to judge as inappropriate using the primed knowledge to categorize the input and are less likely to do so (e.g. Martin, 1986). Controlling the use of irrelevant, inappropriate, and even biased knowledge that happens to be activated is clearly functional.

*Expectancies*

Activating and using knowledge also serves the function of anticipating future events, which can benefit planning. This function has received the most attention by social psychologists in the form of research on the effects of expectancies (for a review, see Olson, Roese, & Zanna, 1996). From Lewin's 'level of aspiration' (e.g. Lewin, Dembo, Festinger, & Sears, 1944) to Kelley's (1950) labelling effects to Fishbein and Ajzen's (1975) attitude-related expectancies, there has been a long history of social psychologists studying how expectancies influence social behavior. Expectancies can themselves be a source of selective attention and accessibility, thereby contributing to knowledge activation (see Olson *et al.*, 1996). Expectancies play a major role in evaluation and assessment, and in allocation of personal resources. Expectancies are combined with value judgments to motivate activity engagement (e.g. Atkinson, 1964; Bandura, 1986) and to facilitate decision making (for a review, see Ajzen, 1996). Expectancies are used in counterfactual thinking (e.g. Kahneman & Miller, 1986) and in hypothesis-testing more generally (for a review, see Trope & Liberman, 1996). Expectancies are also used to regulate one's interactions with other people and with one's environment (e.g. Kelley & Stahelski, 1970).

*Costs as Well as Benefits of Knowledge Use*

The principles of knowledge use have many benefits. Automaticity, for example, is functional because it is efficient for individuals to process regularities in their environment quickly and effortlessly, without the need for slower and more effortful controlled processing. But automaticity has costs as well. It can occur outside of conscious control and produces unrecognized biases in judgments, memory, and decisions. Perceivers' chronically accessible constructs, for example, can bias their impressions of other people, causing them to see clearly attributes when the evidence for them is vague or ambiguous and not see other attributes when the evidence for them is clear (for a review, see Higgins, 1996).

Controlled processing has the benefit of initiating procedures to suppress such inappropriate use of accessible knowledge. But controlled processing also has costs. To begin with, controlled or deliberate processing depletes mental resources more than automatic processing, which reduces what else can receive attention (see Bargh, 1996). There are also more subtle costs of controlled processing. As mentioned earlier, for example, when people are aware that earlier priming events might bias their current perceptions, they judge that using the primed knowledge to categorize the input is inappropriate and do not assimilate the input to the accessible knowledge (e.g. Martin, 1986). But such suppression does not produce accurate judgments of the ambiguous target behaviors. Rather, it produces a contrast effect in which people contrast the input to the accessible knowledge (for a review, see Higgins, 1996). If the

input was ambiguously persistent/stubborn, for instance, and 'persistent' was the prime, they judge the input as 'stubborn'. By suppressing the prime-related alternative, the perceivers have simply made the alternative more accessible. Such contrast effects from controlled processing are just as biased as the assimilation effects from automatic processing.

It should be noted more generally that it is always difficult, and to some extent impossible, to calibrate exactly how much correction is needed to control a potential bias or which alternative information the controlled process should introduce. Thus, there will always be some costs when controlled processing is used to eliminate automatic biases. As another example of this, consider someone trying to control automatic evaluative biases by consciously considering the reasons for his or her evaluations. Although this sounds like a good idea, in fact such controlled processing can actually produce less functional preferences and decisions than the automatic evaluations (e.g. Wilson & Schooler, 1991).

Detailed and extensive consideration of all the information available in an input also requires controlled processing. When individuals' information processing capacity is low (e.g. high-load conditions) or their motivation is low (e.g. low personal involvement), then they might use shortcuts or strategic aids to simplify the judgmental or decision task. Such **heuristics** have the benefit of saving energy and mental resources. But they also have costs (for a review, see Nisbett & Ross, 1980). As just one example, people have subjective experiences of knowledge activation, such as whether it was easy or difficult. In addition, people have theories about these subjective experiences and draw inferences from them; i.e. they have meta-cognitions about **accessibility experiences** (see Strack, 1992). The now classic 'availability heuristic' of Tversky and Kahneman (1973) is one such meta-cognition. The more easily instances of some knowledge class can be activated or brought to mind (i.e. the higher the 'availability' of class instances), the higher the judged frequency or likelihood of that class. This is a reasonable heuristic because typically more frequent or likely class instances are more accessible. But this is not always the case. Something can be more easily activated for reasons other than its frequency, such as being recently primed or being part of a simpler task, producing erroneous inferences about frequency (e.g. Gabrielchik & Fazio, 1984; Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, & Simons, 1991).

## PRINCIPLES OF THE SOCIAL PSYCHOLOGY OF COGNITION

This section describes principles of the social psychology of cognition. How is individuals' learning influenced by the social world around them? What are the benefits and costs of taking others into account when learning about the world? People learn about what matters in the world through their associations with others. To survive in the social world, individuals need to become part of a social world of norms, roles, identities, and so on that connect them to others and permit mutual understandings and collaborative interactions. This second section reviews some general principles of how learning takes place through associating with others— **shared reality**, **role enactment**, **social positions and identities**, and **internal audiences**. As

in the previous section, both the essential benefits and potential costs of each principle are considered to illustrate the inherent trade-offs of each principle.

**Shared Reality**

Festinger (1950) stated that beliefs, attitudes, and opinions vary in the extent to which there is physical evidence for them. Because a belief or opinion is rarely supported by incontrovertible physical reality, the basis for holding most beliefs and opinions is social reality, the fact that others share the belief or opinion:

> . . . where the dependence upon physical reality is low, the dependence upon social reality is correspondingly high. An opinion, a belief, an attitude is 'correct', 'valid', and 'proper' to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes (Festinger, 1950, p. 272).

The very nature of most of our reality, then, is social. The reality of our subjective meanings is anchored in the fact that others share the reality. One may conceptualize the social reality described by Festinger (1950) more broadly as not only beliefs, attitudes, and opinions anchored in others sharing the reality but also as any knowledge or feeling that is formed or transformed by taking others into account (see Hardin & Higgins, 1996). The classic example of such shared reality is the norm formation studied by Sherif (1935, 1936).

Sherif (1935, 1936) had individuals in a completely dark room estimate the movement of a point of light that, although actually stationary, appears objectively to move in different directions and amounts by different individuals (the autokinetic effect). Sherif found that when individuals gave their estimates in a group, they slowly abandoned their initially disparate judgments and converged on a mutually shared estimate of the light's apparent direction and amount of movement. The individuals' own private judgments were also influenced by this 'social norm'. Jacobs and Campbell (1961) found, moreover, that such arbitrary social norms are maintained even when the original members of a group are replaced, one at a time, by new participants who are themselves later replaced, lasting over several 'generations'.

In a study involving social stimuli, Back (1951) had participants first interpret a set of pictures alone, then meet in either high cohesive or low cohesive dyads to discuss and compare each subject's narrative interpretation, and then interpret the pictures a second time alone. The participants in the high cohesive dyads changed their final private interpretations more toward their partner's interpretation than did subjects in the low cohesive dyads. A similar kind of group influence on narrative consensus has also been found in jury decision making (see Hastie, Penrod, & Pennington, 1983). Studies of group influences on judgments have remained a major area of social psychology since the 1950s. A review of the evidence suggests that individuals who conform in social influence studies generally continue to conform, at least to some extent, when they are alone and anonymous; rarely is there mere compliance (see Moscovici, 1985).

One of Asch's great contributions to social cognition was his suggestion that the evaluation of an input can change when the context changes not because the same referential object is evaluated differently but because the referential object itself has changed; i.e. there has been a change in meaning (see Asch, 1948, 1952). For

example, people may interpret the underlying nature of someone's problem by considering how others respond to it (e.g. Latane & Darley, 1969). Thus, someone's 'problem', including physical pain, becomes a social reality and not just a physical reality.

People also take others into account in the process of social comparison. People will use other people's responses and beliefs as a basis for judging themselves and others. Festinger (1954), for example, described how people compare their performance to others' performance in order to assess their ability (see also Hyman's, 1942, discussion of the use of reference groups as factual standards). Schachter (1959) suggested that people are motivated to be with other people in order to use their affective responses to a shared event as a basis for evaluating their own feelings. As mentioned earlier, Schachter and Singer (1962) proposed that people will use the behavior of others in the immediate situation even to identify which emotion they are experiencing. Indeed, the notion that people use information about others to make judgments was included in most attribution theories (e.g. Heider, 1958; Jones & Davis, 1965; Kelley, 1967; Weiner & Kukla, 1970).

### *Costs as Well as Benefits of Shared Reality*

In order to survive in the social world individuals need to become part of a shared reality of norms, roles, identities, and so on that connect them to others and permit mutual understandings and collaborative interactions. The reality of our subjective meanings is anchored in the fact that others share the reality (see also Smith & Mackie, 1995). The fact that social verification transforms subjective experiences into objective realities has costs as well as benefits. Brown (1958, 1965) suggested that the essential problem with stereotypes was not so much that there were inaccurate generalizations but that they were ethnocentric (see also Wittenbrink, Hilton, & Gist, 1998). Attributes contained in stereotypes, such as 'superstitious' or 'dirty', are more evaluative than they are descriptive, and as evaluations they assume that the standards of one's ingroup are objective. Because one's own subjective preferences and values have been verified by other ingroup members, one acts as if they have the status of objective truth. Anything different, then, is evaluated negatively. A related cost of shared reality is that by belonging to an ingroup whose members agree with one another and prize their similarity, differences with outgroup members are accentuated (see, for example, Brewer, 1991; Tajfel, Flament, Billig, & Bundy, 1971). Because these differences include perceived values and goals, shared reality within ingroups increases the likelihood of conflict with outgroups. Additional costs of shared reality are described in the concluding section of this paper.

### Role Enactment

As mentioned earlier, action is 'social' when its meaning and orientation take account of other people. Role enactment is a quintessential example of 'social' action. Role expectations is the conceptual link between social structure and role enactment. As defined by Sarbin and Allen (1968), role expectations 'are comprised of the rights and privileges, the duties and obligations, of any occupant of a social

position in relation to persons occupying other positions in the social structure' (p. 497). Sarbin and Allen (1968) also point out that role expectations operate as imperatives concerning a person's cognitions as well as his or her conduct during role enactment.

Thus, role enactment is social action that can influence meaning in ways that are appropriate to the role function. In a study by Jones and deCharms (1958), for example, naval air cadets heard a tape-recorded interview between a psychologist and a former prisoner of war who had signed Communist propaganda statements. One group of participants was assigned the role of members of a judicial board of inquiry who were to decide what the formal charges should be, another group was assigned the role of members of a medical–psychological board of review empowered to determine why the prisoner did what he did, and a third group was assigned the role of potential friend of the prisoner. The study found that participants' personality judgments of the target based on the same input information varied markedly, in a direction consistent with the role that they had been assigned. Just preparing for role enactment can also influence how information is encoded. Zajonc (1960) found, for example, that even prior to the communication taking place, participants assigned the role of 'transmitter' of information represent input information in a more unified and organized way than participants assigned the role of 'recipient', a difference appropriate to the different role functions.

Role assignment can influence memory as well as encoding of input information (e.g. Anderson & Pichert, 1978). Indeed, memory itself can constitute a role. Wegner (1986) describes how established groups, such as social organizations or couples, save mental resources by assigning members to different memory roles in which each member has the responsibility to remember events and facts in particular life domains (e.g. 'financial'; 'family'). Even reasoning can be influenced by role enactment. For example, Zukier and Pepitone (1984) assigned subjects either to the role of 'scientist' or to the role of 'clinical counselor' before reading target person information and receiving base rate information. Consistent with their different role functions, participants in the role of scientist were much more likely to use the base rate information than participants in the role of clinical counselor.

Successful role enactment requires taking into account the normative expectations and standards of others. Role-taking more generally involves responding as a function of inferences concerning how others will or would respond. Role-taking is a fundamental process underlying all social interaction (Mead, 1934). It is a fundamental aspect of interpersonal communication (for a review, see Krauss & Fussell, 1996). A basic rule of interpersonal communication, for example, is that communicators should take recipients' knowledge and attitudes into account when formulating their message. Communicators take their audience into account in order to maximize dyadic outcomes or 'task' goals, such as referential accuracy (see Fussell and Krauss, 1989). In a classic study by Krauss, Vivekananthan, and Weinheimer (1968), for example, female undergraduates named color chips either with themselves in mind as the future audience for the names (private message) or with some other female undergraduate in mind as the future audience for the names (social message). In a subsequent referential task in which participants had to select the correct color chip referent for each name they were given, referential accuracy was better for social message names than private message names (except for participants given their own private messages).

*Costs as Well as Benefits of Role Enactment*

Effective and efficient social interaction requires a mutual understanding between interacting partners of the responsibilities associated with each role enactment. By each person enacting his or her role appropriately, the interaction will proceed smoothly and efficiently. But there are costs of role enactment as well. One cost is that roles will be enacted without sufficient consideration of the non-role implications of the enactment. A classic example is individuals enacting the role of teacher under the supervision of a learning expert with insufficient concern for the non-learning consequences to the person enacting the role of learner (e.g. Milgram, 1974). Another cost is that knowing the rules of appropriate role enactment can bias inferences about the meaning of some act, such as the maxims of conversation biasing how information presented by an experimenter is used by a participant in a study (e.g. Schwarz, Strack, Hilton, & Naderer, 1991).

Role enactment also has unintended social-cognitive consequences for the actor, such as influencing both one's actions and one's interpretation of them. Ross, Amabile, & Steinmetz (1977), for example, assigned one member of each pair of participants to play the role of 'questioner' and the other member of the pair to play the role of 'contestant' in a 'question and answer' game. The 'questioner' role permitted the actor to ask challenging questions that displayed esoteric knowledge whereas the 'contestant' role caused most actors to display a lack of such knowledge. The 'contestant' participants, however, did not take into account sufficiently how their role assignment influenced their ability to demonstrate their general knowledge, and they evaluated themselves more negatively than did the questioners.

Effective and efficient interpersonal communication also requires role enactment, and a basic rule is that communicators should take recipients' knowledge and attitudes into account when formulating their message. In a study by Higgins and Rholes (1978), for example, participants read an essay describing the behaviors of a target person, Donald, and then communicated their impressions of him to an audience who they believed liked or disliked him. Enacting their communicator role appropriately, the participants tailored their message to suit their audience's attitude by both deleting unambiguous behaviors that were attitude discrepant and disambiguating ambiguous behaviors in the direction of the attitude. This role enactment, however, had unintended costs to the accuracy of the participants own memory for the original essay. The study found that the communicators' own memory of Donald's behaviors became increasingly consistent with their message about him over a two-week period. That is, the communicators over time believed what they had said about him rather than what they had read about him.

This 'saying is believing' phenomenon can also be understood in terms of the aboutness principle. When communicators produce a message on some topic, it would be natural for them to represent their message responses as being about the topic (i.e. Donald). According to the aboutness principle, these communicators would then infer that the source of their summaries was Donald's characteristics as reflected in his behaviors. This would not be a problem if the source of the summaries was just Donald's characteristics as reflected in his behaviors. But this is not the case. The audience to whom the message was directed was another important source of the message summaries. By not taking this additional source of the message summaries into account sufficiently, communicators who read exactly the same information

about Donald, but communicated to different audiences, had very different recollections (and evaluations) of him two weeks later.

### Social Positions and Identities

A social position is any socially recognized category of actor. When people ascribe a social position to someone, they expect particular attributes of that person and tend to behave toward that person on the premise of these expectations (see Stryker & Statham, 1985). Some social positions, such as the social roles already discussed, involve normative expectations (i.e. beliefs about duties and obligations) and carry sanctions. Other social positions involve probabilistic expectancies and carry no sanctions. In these cases, there are attributes that people are expected to possess simply because they are members of some social category.

Even when target persons do not initially possess the attributes of their ascribed social position, they are perceived and responded to as if they did possess them. These responses in turn can ultimately cause the persons to behave in a manner consistent with the attribute expectancies. This 'self-fulfilling prophecy' (see Merton, 1957) can have benefits for the target person when the assigned position involves positive attributes. For example, in a classic study by Rosenthal and Jacobson (1968), teachers at the beginning of the school year were led to categorize some of their students as 'potential late bloomers', thus producing the expectation that these students would excel if given the appropriate support and guidance. These students, in fact, were randomly selected and did not differ from their fellow students. Nevertheless, the school performance of these students improved over time more than that of the other students. Social positions have the societal function of influencing expectancies that shape social interactions in ways that support fulfillment of the attributes society desires. Consistent with this, there is evidence that self-fulfilling prophecies are more likely to occur when the perceiver has power over the target than the reverse (see Darley & Fazio, 1980).

When people are assigned social positions by others, they sometimes appropriate the terms of the placement for themselves (see Stryker & Statham, 1985). Such internalized positional designations are called 'social identities'. Although social roles often become social identities, these two types of social positions are distinct. An individual can enact a particular role but not identify with it, or an individual can identify with a social position that involves no role responsibilities (e.g. being 'short'). Activation of social identities can also influence people's actions and subjective meanings.

In a classic study by Charters and Newcomb (1952), for example, Catholic students' social identity as Catholics was activated by creating group compositions that were religiously homogeneous, and this activation shifted the students' personal opinions toward orthodox Catholic beliefs. Frable, Blackstone, and Scherbaum (1990) found that individuals with (invisible) social identities that are statistically unusual and centrally defining (e.g. bisexual; wealthy) will process a dyadic inter-action differently than will their 'normal' partner, tending to role-take more often and to remember spontaneously more detailed information about the surroundings of the interaction. The establishment of social identities, even prior to contact between groups or based simply on minimal group differences, also increase perceptions that

members of 'other' social identities are dissimilar to fellow members of one's own social identities and similar to one another (see, for example, Hensley & Duval, 1976; Sherif & Sherif, 1969; Tajfel, 1981; Wilder, 1981).

*Costs as Well as Benefits of Social Positions and Identities*

Social interaction is facilitated when people ascribe a social position to someone, expect particular attributes of that person, and behave toward that person on the premise of these expectations. Moreover, when the expectancies are positive these expectancies can produce self-fulfilling prophecies that benefit the target person. But self-fulfilling prophecies can have costs as well when the expectancies are negative. An experimental study by Word, Zanna, and Cooper (1974), for example, found that the nonverbal behavior of whites was less personal and friendly when interviewing black than white job applicants, and when white job applicants were later interviewed by confederates using the 'black target' interview style they performed worse in the interview than white applicants who received the 'white target' style.

Individuals' expectations about others' acceptance or rejection of them also plays a critical function in social relationships (e.g. Bowlby, 1969, 1973). When individuals ascribe to others the social position of romantic partner, they expect that person to behave towards them in particular ways. These expectations have costs when perceivers are rejection sensitive. For example, Downey, Freitas, Michaelis, and Khouri (1998) found in a field study that high rejection sensitive people expected their partner to reject them, perceived rejection more during conflict situations, and reacted negatively to their partner as a response to the perceived rejection. This pattern produced a self-fulfilling prophecy because their partner became more rejecting after receiving the negative reaction, with the ultimate result that high rejection sensitive people's relationships were more likely to break up.

**Internal Audiences**

The beliefs, opinions, preferences, and values of one's significant others can become a basis for self-regulation. This influence of significant others as internal audiences can be quite broad (see, for example, Schlenker, 1985). In some cases, the significant others may be the members of a social category. Such reference groups can function to provide a person with a set of norms or values that he or she believes is shared by members of the reference group (see Merton & Kitt, 1952; Newcomb, 1952). A social identity group is a reference group in which one is an accepted member. There are other reference groups to which a person does not belong that nevertheless provide the person with norms or values. People may be motivated to meet these standards (positive reference groups) or avoid meeting these standards (negative reference groups). An early study by Siegel and Siegel (1957) distinguished between the influence of membership groups and the influence of reference groups on attitudes. All first-year female students wanted to be in a particular residence in their second year. By chance (a lottery), some got into this residence (membership group) and the rest did not (non-membership group). Among those who did not get in, some wanted to get into the residence in their third year (reference group) and the rest did not

(non-reference group). Siegel and Siegel found that both membership group and reference group in the second year influenced attitude change from the first to the second year (as compared to the non-membership/non-reference group).

Internal or imaginary audiences can also be individuals such as your parents, best friends, spouse, or boss. For example, in a study supposedly on 'visualizing scenes and people', Baldwin and Holmes (1987) tested whether activating alternative internal audiences would influence people's subsequent responses to a sexually permissive essay. Undergraduate female subjects visualized either two campus associates or two older members of their family, with the former being more sexually permissive than the latter. The participants liked the sexually permissive essay more when the internal audience was their campus associates, and they were not aware of being influenced by previously visualizing this audience.

Internal audiences are audiences that need not be present in the immediate context to impact on subjective meaning because their viewpoint has been internalized. There are also non-internalized social audiences that can influence meaning without being present in the immediate context. Such 'anticipated audiences' influence people's current responses and information processing in an adaptive manner that suits the audience. Grace (1951) found that anticipating the sex of the audience to whom a list of male- and female-related objects would later be reported influenced the order in which subjects recalled the objects. In the classic Zimmerman and Bauer (1956) study, communicators who anticipated summarizing information on an issue for an audience with a particular opinion on the issue recalled the information in a direction consistent with their audience's opinion. The literature on anticipatory attitude change has also shown that changing attitudes in anticipation of an audience can produce a persistent change in meaning (for a review, see Cialdini & Petty, 1981).

### Costs as Well as Benefits of Internal Audiences

Taking the beliefs, opinions, preferences, and values of one's significant others into account in one's self-regulation has essential benefits for the maintenance of these critical relationships. It can also have self-evaluative costs, however. When people fail to meet a standard that a significant other holds for them, they suffer emotionally (e.g. Baldwin, Carrell, & Lopez, 1990; Higgins, 1987). Moreover, although transference of lessons learned in previous relationships is beneficial in guiding current relationships, it can also be costly because attributes of significant others can be transferred that do not actually apply to the current target of transference. In a direct test of how representations of significant others influence memory for novel persons, Andersen and Cole (1990) tested students' recognition memory for features of four fictional characters they read about. False recognition of features not possessed by these novel persons was much more likely for features possessed by a student's significant other than for features possessed by a student's non-significant other.

### CONCLUSIONS

Social cognition is concerned with the learning that is about associations with others and the learning that takes place in association with others. In both cases, the learning

concerns what matters when associating with others. The cognition of social psychology emphasizes the cognitive principles involved in learning about social objects—the fact that the object of **what** is learned is the social world. The social psychology of cognition emphasizes the social principles that provide the context of learning about the world—the fact that **where** the learning takes place is in the social world. Social-cognitive principles exist because they are adaptive, even necessary, for human survival. They are natural principles. They provide essential benefits to self-regulation and social regulation. By considering the benefits of social-cognitive principles, social cognition provides a unique perspective on what it means to be human. But this is not the whole story. These same natural principles also have self-regulatory and social regulatory costs. By considering the inherent costs of social-cognitive principles, social cognition provides a unique perspective on what it means to be 'only human'.

Without the cognitive principles of organization, explanation, knowledge activation and use, there would not be the social learning that allows people to predict and plan and control their actions as part of effective and efficient self-regulation in relation to others. Without the social principles of role enactment, social positions and identities, internal audiences, and shared reality more generally, individuals would not have the mutual understandings and common knowledge that allows them to take each other into account as part of effective and efficient social interaction. As we have seen, however, each of these beneficial principles also has costs.

The costs of social cognition have fascinated psychologists throughout this century. Psychologists' fascination has derived in part from their being surprised to observe social-cognitive errors in rational people and in part from their being concerned with the problems produced by such errors. Historically, there have been three major perspectives on the source of such errors. The classic psychodynamic perspective is that errors arise from the conflicts among different self-regulatory systems. A rational executive (Ego) has to deal with both unconscious pleasure-seeking impulses (Id) and societal demands (Superego) that can also be unrealistic (e.g. Freud, 1950/1920, 1961/1923). The functioning of the Ego is not problematic, but the conflicting motives of the Id and the Superego are problematic. The notion that endogenous impulses and exogenous pressures can overwhelm adaptive information processing remains to the present. According to the 'conflict' perspective, benefits and costs derive from **different** variables. For example, the costly conflicts between the Id and the Superego interfere with the benefits of the Ego. Irrational motives interfere with rational information processing.

What causes biases and errors in judgments, memory, reasoning and decision making? For most of the twentieth century, the motivational 'conflict' perspective on social-cognitive failures has dominated. The implicit logic has been that people are intellectually capable of accurate processing and sound reasoning, and thus cognitive failures must be motivated in some way. To the extent that the 1970s cognitive 'revolution' in social psychology was a 'revolution', it was not because it concerned information-processing variables. Instead, it was because it provided a non-motivational perspective on social-cognitive failures or costs (see, for example, Dawes, 1976; Nisbett & Ross, 1980). A distinction is made between how information processing **should** be done versus how it actually **was** done. The information processing of lay or intuitive scientists, i.e. people, is compared to information processing prescribed by normative models, and people are found lacking. The heuristics and simplification strategies used by people are often satisfactory and the best that might be expected

given people's inherent limitations, but they are imperfect. According to the 'limited capacity' perspective, benefits would derive from people using the normative models, but their limitations result in their using costly alternative strategies. From this perspective, the beneficial normative models are **different** from the costly non-normative models that people actually use.

Beginning in the 1980s, social psychologists began developing a new perspective on social-cognitive costs. In contrast to the 'limited capacity' perspective, this new perspective proposed that under the right conditions people are capable of elaborate and systematic processing that basically follows normative prescriptions. But under other conditions people use alternative heuristics and strategies that produce costs. Rather than people being inherently 'faulty', there are momentary conditions that reduce effort allocation (e.g. low personal relevance) or reduce cognitive capacity (e.g. high load from interfering task), which results in people using the more energy-saving but error-prone processes (see, for example, Chaiken, Liberman, & Eagly, 1989; Fazio, 1990; Fiske & Neuberg, 1990; Petty & Cacioppo, 1986). According to the 'dual-process' perspective, there are **different** kinds of processes, and the benefits from one process and the costs from another are distinguished.

The 'trade-off' perspective differs from these other perspectives in highlighting the fact the **same** social-cognitive principle can have both benefits and costs (see also Kruglanski, 1992; Smith & Mackie, 1995). It is not possible to find some other principle that has the benefits without the costs. The benefits of the principle are essential. We cannot do without it to get along in the social world. But it comes with inherent costs. I am not suggesting that these different perspectives on social-cognitive costs are competing alternatives. They can all contribute to a greater understanding of the sources of social-cognitive costs. There are theoretical as well as practical reasons for highlighting the 'trade-off' perspective, however.

Our understanding of the basic nature of social-cognitive principles would be increased by systematically examining their trade-offs. Historically, there has been a tendency for the benefits and the costs of these principles to be studied by different researchers, and to appear in different social psychological areas. But the trade-offs are inherent to these principles and need to be examined together as part of studying each principle in depth. Indeed, by basing our research on the notion of trade-offs, we are likely to understand better how each principle works in everyday life. Let us reconsider a couple of principles discussed earlier as examples.

As a first example, consider the process of organizing input information by connecting it to stored information. One benefit of organization mentioned earlier is to add information about a target beyond the target attributes that can currently be perceived by applying stored knowledge to the target. But there are also costs of such augmentation. Research on stereotypes, for example, has demonstrated that categorization has trade-offs because information can be added to a target that, while true of many other category members, is not true of this target. There are other functions of the organization process which have trade-offs that have not received attention, such as the function of abstraction. Abstraction shifts attention away from the immediate here-and-now features of a target toward higher level properties that the target shares with other entities. This has the benefit of diminishing the control of here-and-now choices over potentially superior alternatives. For example, this could make it easier to wait for a superior future alternative rather than choosing the immediately available alternative, as when abstraction diminishes the 'hot' tempting features of the

here-and-now alternative in delay of gratification studies (e.g. Mischel, Shoda, & Rodriguez, 1989). The ability of abstraction to reduce the power of here-and-now target features also has costs, however. It can undermine intrinsic motivation to engage an activity. For example, interest in an inherently attractive activity is undermined when it is organized in an abstract manner, such as representing it as a means to attain a reward (e.g. Lepper *et al.*, 1973). Our understanding of the principle of organization would be increased by explicitly studying the trade-offs of augmentation, abstraction and other functions of organization.

As another example, consider the process of social verification in constructing a shared reality with others. One benefit of social verification mentioned earlier is to transform subjective reality into objective reality. But when this transformation concerns personal preferences being verified by ingroup members, the process of social verification has the cost of ethnocentrism. Another benefit of social verification is consensus that increases interaction efficiency. It doesn't matter, for example, what specific word is chosen to name an object, 'dog' or 'chien', as long as it is socially verified by members of a linguistic community, and the interaction benefits of such lexical consensus are enormous. But in other cases it does matter what the consensus is. For example, there can be consensus within a group to make decisions with a promotion focus on gains or a prevention focus on non-losses. Although this consensus makes group interaction more efficient, it also biases the group's decisions in a risky or conservative direction, respectively (Levine & Higgins, in press). By studying the various trade-offs of social verification, we would enhance our understanding of the principle of shared reality.

There are also practical implications of the 'trade-off' perspective. A common model of intervention assumes that once the source of a problem has been found, the solution is to remove the source. This would be reasonable if the source of costs and the source of benefits were different. But when the source is the same, then removing the source means the loss of future benefits as well as current costs. Because the costs of social-cognitive principles go hand-in-hand with their benefits, we have to accept the fact that there will necessarily be some costs. Nevertheless, there are some major benefits of knowing about the costs of social-cognitive principles. First, the more we learn about how a principle functions and the conditions under which it can be costly, the more we can set the conditions to reduce those costs where possible. Second, because these costs can never be eliminated completely, we can all learn to keep in mind that our memory, judgments, and decisions could be faulty. We can learn that the costs of social-cognitive principles are part of what it means to be 'only human'. Awareness of social-cognitive costs can make each of us more tolerant of others and of ourselves. This in itself could reduce interpersonal and intergroup conflict, as well as personal self-criticism, by deepening our appreciation of our common humanity. In these ways, social cognition has much to contribute to scholarly discourse on both the science of humanity and humanistic values.

am very grateful to John Bargh, Susan Fiske, Jens Forster, Arie Kruglanski, Eliot Smith, Yaacov Trope and Robin Wells.

# REFERENCES

Ajzen I. 1977. Intuitive theories of events and the effects of base rate information on prediction. *Journal of Personality and Social Psychology* **35**: 303–314.

Ajzen I. 1996. The social psychology of decision making. In *Social Psychology: Handbook of Basic Principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 297–325.

Allport GW. 1968. The historical background of modern social psychology. In *The Handbook of Social Psychology*, Vol. 1, Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA; 1–80.

Andersen SM, Cole SW. 1990. 'Do I know you?': The role of significant others in general social perception. *Journal of Personality and Social Psychology* **59**: 384–399.

Anderson CA, Krull DS, Weiner B. 1996. Explanations: Processes and consequences. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 271–296.

Anderson NH. 1974a. Cognitive algebra: Integration theory applied to social attribution. In *Advances in Experimental Social Psychology*, Berkowitz L (ed.); Academic Press: New York.

Anderson RC, Pichert JW. 1978. Recall of previously unrecallable information following a shift in perspective. *Journal of Verbal Learning and Verbal Behavior* **17**: 1–12.

Asch SE. 1946. Forming impressions of personality. *Journal of Abnormal and Social Psychology* **41**: 258–290.

Asch SE. 1948. The doctrine of suggestion, prestige, and imitation in social psychology. *Psychological Review* **55**: 250–276.

Asch SE. 1952. *Social Psychology*. Prentice-Hall: Englewood Cliffs, NJ.

Atkinson JW. 1964. *An Introduction to Motivation*. D. Van Nostrand: Princeton, NJ.

Back KW. 1951. Influence through social communication. *Journal of Abnormal and Social Psychology* **46**: 9–23.

Baldwin MW, Carrell SE, Lopez DF. 1990. Priming relationship schemas: My advisor and the Pope are watching me from the back of my mind. *Journal of Personality and Social Psychology* **26**: 435–454.

Baldwin MW, Holmes JG. 1987. Salient private audiences and awareness of the self. *Journal of Personality and Social Psychology* **52**: 1087–1098.

Bandura A. 1986. *Social Foundations of Thought and Action: A social cognitive theory*. Prentice Hall: Englewood Cliffs, NJ.

Bargh JA. 1989. Conditional automaticity: Varieties of automatic influence in social perception and cognition. In *Unintended Thought*, Uleman J, Bargh JA (eds); Guilford: New York.

Bargh JA. 1996. Automaticity in social psychology. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 169–183.

Bargh JA, Lombardi WJ, Higgins ET. 1988. Automaticity of chronically accessible constructs in person × situation effects on person perception: It's just a matter of time. *Journal of Personality and Social Psychology* **55**: 599–605.

Bargh JA, Pratto F. 1986. Individual construct accessibility and perceptual selection. *Journal of Experimental Social Psychology* **22**: 293–311.

Bargh JA, Thein RD. 1985. Individual construct accessibility, person memory, and the recall-judgment link: The case of information overload. *Journal of Personality and Social Psychology* **49**: 1129–1146.

Bartlett FC. 1932. *Remembering*. Cambridge University Press: Cambridge.

Bassok M, Trope Y. 1984. People's strategies for testing hypotheses about another's personality: Confirmatory or diagnostic? *Social Cognition* **2**: 199–216.

Bem DJ. 1965. An experimental analysis of self-persuasion. *Journal of Experimental Social Psychology* **1**: 199–218.

Berlyne DE. 1958. The influence of complexity and novelty in visual figures on orienting responses. *Journal of Experimental Psychology* **55**: 289–296.

Bowlby J. 1969. *Attachment* (Attachment and Loss), Vol. 1. Basic Books: New York.

Bowlby J. 1973. *Separation: Anxiety and anger* (Attachment and Loss), Vol. 2. Basic Books: New York.

Brewer MB. 1991. The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin* **17**: 475–482.

Brewer WF, Nakamura GV. 1984. The nature and functions of schemas. In *Handbook of Social Cognition*, Vol. 1, Wyer RS, Srull TK (eds); Erlbaum: Hillsdale, NJ; 119–160.

Brown RW. 1958. *Words and Things*. Free Press: New York.

Brown RW. 1965. *Social Psychology*. Free Press: New York.

Bruner JS. 1957a. Going beyond the information given. In *Contemporary Approaches to Cognition*, Gruber H, Terrell G, Wertheimer M (eds); Harvard University Press: Cambridge, MA.

Bruner JS. 1957b. On perceptual readiness. *Psychological Review* **64**: 123–152.

Bruner JS, Taguiri R. 1954. The perceptions of people. In *Handbook of Social Psychology*, Lindzey G (ed.); Addison-Wesley: Cambridge, MA; 634–654.

Cantor N, Mischel W. 1979. Prototypes in person perception. In *Advances in Experimental Social Psychology*, Vol. 12, Berkowitz L (ed.); Academic Press: New York.

Carlston DE, Smith ER. 1996. Principles of mental representation. In *Social Psychology: Handbook of Basic Principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 184–210.

Carver CS, Scheier MF. 1978. Self-focusing effects of dispositional self-consciousness, mirror presence, and audience presence. *Journal of Personality and Social Psychology* **36**: 324–332.

Chaiken S, Liberman A, Eagly AH. 1989. Heuristic and systematic information processing within and beyond the persuasion context. In *Unintended Thought*, Uleman JS, Bargh JA (eds); Guilford: New York.

Charters WW, Newcomb TM. 1952. Some attitudinal effects of experimentally increased salience of a membership group. In *Readings in Social Psychology, Second Edition*, Swanson GE, Newcomb TM, Hartley EL (eds); Holt, Rinehart & Winston: New York; 415–420.

Cialdini RB, Petty RE. 1981. Anticipatory opinion effects. In *Cognitive Responses in Persuasion*, Petty RE, Ostrom TM, Brock TC (eds); Erlbaum: Hillsdale, NJ.

Croizet J, Fiske ST. (In Press). Moderation of priming by goals: Feeling entitled to judge increases judged usability of a non-applicable prime. *Journal of Experimental Social Psychology*.

Cooley CH. 1964. *Human Nature and the Social Order*. Schocken Books: New York (Original work published 1902.).

Darley JM, Fazio RH. 1980. Expectancy confirmation processes arising in the social interaction sequence. *American Psychologist* **35**: 867–881.

Dawes RM. 1976. Shallow psychology. In *Cognition and Social Behavior*, Carroll JS, Payne JW (eds); Erlbaum: Hillsdale, NJ; 3–11.

De Soto CB. 1960. Learning a social structure. *Journal of Abnormal and Social Psychology* **60**: 417–421.

Devine PG. 1989. Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology* **56**: 5–18.

Downey G, Freitas AL, Michaelis B, Khouri H. 1998. The self-fulfilling prophecy in close relationships: Rejection sensitivity and rejection by romantic partners. *Journal of Personality and Social Psychology* **75**: 545–560.

Dweck, CS. 1975. The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology* **31**: 674–685.

Eagly AH, Chaiken S. 1993. *The Psychology of Attitudes*. Harcourt Brace Jovanovich: New York.

Fazio RH. 1986. How do attitudes guide behavior? *Handbook of Motivation and Cognition: Foundations of social behavior*, Sorrentino RM, Higgins ET (eds); Guilford: New York; 204–243.

Fazio RH. 1990. Multiple processes by which attitudes guide behavior: The mode model as an integrative framework. In *Advances in Experimental Social Psychology*, Vol. 23, Zanna MP (ed.); Academic Press: New York; 75–109.

Festinger L. 1950. Informal social communication. *Psychological Review* **57**: 271–282.

Festinger L. 1954. A theory of social comparison processes. *Human Relations* **1**: 117–140.

Festinger L. 1957. *A Theory of Cognitive Dissonance*. Row, Peterson: Evanston, IL.

Fishbein M, Ajzen I. 1975. *Beliefs, Attitude, Intention, and Behavior*. Addison-Wesley: Reading, MA.

Fiske ST. 1992. Thinking is for doing: Portraits of social cognition from daguerreotype to laser photo. *Journal of Personality and Social Psychology* **63**: 877–889.

Fiske ST, Neuberg SL. 1990. A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In *Advances in Experimental Social Psychology*, Vol. 23, Zanna MP (ed.); Academic Press: New York; 1–74.

Fiske ST, Pavelchak MA. 1986. Category-based versus piecemeal-based affective responses: Developments in schema-triggered affect. In *Handbook of Motivation and Cognition: Foundations of social behavior*, Sorrentino RM, Higgins ET (eds); Guilford: New York; 167–203.

Fiske ST, Taylor SE. 1984. *Social Cognition*. Addison-Wesley: Reading, MA.

Forgas JP. 1981. What is social about social cognition? *Social Cognition: Perspectives on everyday understanding*, Forgas JP (ed.); Academic Press: New York; 1–26.

Forgas JP. 1992. Affect in social judgments and decisions: A multi-process model. In *Advances in Experimental Social Psychology*, Vol. 25, Zanna MP (ed.); Academic Press: New York; 227–275.

Frable DES, Blackstone T, Scherbaum C. 1990. Marginal and mindful: Deviants in social interactions. *Journal of Personality and Social Psychology* **59**: 140–149.

Freud S. 1950. *Beyond the Pleasure Principle*. Liveright: New York (Original work published 1920.).

Freud S. 1961. The ego and the id. In *Standard Edition of the Complete Psychological Works of Sigmund Freud*, Vol. 19, Strachey J (ed.); Hogarth Press: London; 3–66 (Original work published 1923.).

Fussell SR, Kraus RM. 1989. The effects of intended audience on message production and comprehension: Reference in a common ground framework. *Journal of Experimental Social Psychology* **25**: 203–219.

Gabrielcik A, Fazio RH. 1984. Priming and frequency estimation: A strict test of the availability heuristic. *Personality and Social Psychology Bulletin* **10**: 85–89.

Gilbert DT, Fiske ST, Lindzey G. 1998. *The Handbook of Social Psychology*. McGraw-Hill: New York.

Gilbert DT, Jones EE. 1986. Perceiver-induced constraint: Interpretations of self-generated reality. *Journal of Personality and Social Psychology* **50**: 269–280.

Gollwitzer PM, Moskowitz GB. 1996. Goal effects on action and cognition. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 361–399.

Grace HA. 1951. Effects of different degrees of knowledge about an audience on the content of communication. *Journal of Social Psychology* **34**: 111–124.

Hamilton DL, Gifford RK. 1976. Illusory correlation in interpersonal perception: A cognitive basis of stereotypic judgment. *Journal of Experimental Social Psychology* **13**: 392–407.

Hamilton DL, Katz L, Leirer U. 1980. Cognitive representation of personality impressions: Organizational processes in first impression formation. *Journal of Personality and Social Psychology* **39**: 1050–1063.

Hamilton DL, Zanna MP. 1974. Context effects in impression formation. *Journal of Personality and Social Psychology* **29**: 649–654.

Hardin C, Higgins ET. 1996. Shared reality: How social verification makes the subjective objective. In *Handbook of Motivation and Cognition, Volume 3: The interpersonal context*, Sorrentino RM, Higgins ET (eds); Guilford Press: New York; 28–84.

Harter S. 1999. *The Construction of the Self: A developmental perspective*. Guilford: New York.

Hastie R. 1981. Schematic principles in human memory. In *Social Cognition: The Ontario Symposium*, Vol. 1, Higgins ET, Herman CP, Zanna MP (eds); Lawrence Erlbaum: Hillsdale, NJ; 39–88.

Hastie R, Kumar P. 1979. Person memory: Personality traits as organizing principles in memory for behaviors. *Journal of Personality and Social Psychology* **37**: 25–38.

Hastie R, Penrod SD, Pennington N. 1983. *Inside the Jury*. Harvard University Press: Cambridge, MA.

Heider F. 1958. *The Psychology of Interpersonal Relations*. Wiley: New York.

Heidbreder E. 1933. *Seven Psychologies*. Appleton-Century-Crofts: New York.

Hensley V, Duval S. 1976. Some perceptual determinants of perceived similarity, liking, and correctness. *Journal of Personality and Social Psychology* **34**: 159–168.

Higgins ET. 1987. Self-discrepancy: A theory relating self and affect. *Psychological Review* **94**: 319–340.

Higgins ET. 1996. Knowledge activation: Accessibility, applicability, and salience. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York.

Higgins ET. 1998. The aboutness principle: A pervasive influence on human inference. *Social Cognition* **16**: 173–198.

Higgins ET, Brendl M. 1995. Accessibility and applicability: Some 'activation rules' influencing judgment. *Journal of Experimental Social Psychology* **31**: 218–243.

Higgins ET, Kruglanski AW. 1996. *Social Psychology: Handbook of basic principles*. Guilford: New York.

Higgins ET, Rholes WS. 1978. 'Saying is believing': Effects of message modification on memory and liking for the person described. *Journal of Experimental Social Psychology* **14**: 363–378.

Higgins ET, Rholes WS, Jones CR. 1977. Category accessibility and impression formation. *Journal of Experimental Social Psychology* **13**: 141–154.

Hyman HH. 1942. The psychology of status. *Archives of Psychology*. No. 269.

James W. 1948. *Psychology*. The World Publishing Company: New York (Original publication, 1890.).

Jacobs RC, Campbell DT. 1961. The perpetuation of an arbitrary tradition through several generations of a laboratory microculture. *Journal of Abnormal and Social Psychology* **62**: 649–658.

Johnson MK, Sherman SJ. 1990. Constructing and reconstructing the past and the future in the present. In *Handbook of Motivation and Cognition*, Vol. 2, Higgins ET, Sorrentino RM (eds); Guilford: New York; 482–526.

Jones EE, Davis KE. 1965. From acts to dispositions: The attribution process in person perception. In *Advances in Experimental Social Psychology, Volume 2*, Berkowitz L (ed.); Academic Press: New York; 219–266.

Jones EE, deCharms R. 1958. The organizing function of interaction roles in person perception. *Journal of Abnormal and Social Psychology* **57**: 155–164.

Jones EE, Harris VA. 1967. The attribution of attitudes. *Journal of Experimental Social Psychology* **3**: 1–24.

Kahneman D, Miller DT. 1986. Norm theory: Comparing reality to its alternatives. *Psychological Review* **93**: 136–153.

Kelley HH. 1950. The warm–cold variable in first impressions of persons. *Journal of Personality* **18**: 431–439.

Kelley HH. 1967. Attribution theory in social psychology. In Levine D (ed.) *Nebraska Symposium of Motivation* **15**: 192–238.

Kelley HH. 1973. The process of causal attribution. *American Psychologist* **28**: 107–128.

Kelley HH, Stahelski AJ. 1970. The social interaction basis of cooperators' and competitors' beliefs about others. *Journal of Personality and Social Psychology* **16**: 66–91.

Krauss RM, Fussell SR. 1996. Social psychological models of interpersonal communication. In *Social Psychology: Handbook of Basic Principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 655–701.

Krauss RM, Vivekanathan PS, Weinheimer. 1968. 'Inner Speech' and 'External Speech': Characteristics and communicative effectiveness of socially and non-socially encoded messages. *Journal of Personality and Social Psychology* **9**: 295–300.

Krech D, Crutchfield RS. 1948. *Theory and Problems of Social Psychology*. McGraw-Hill: New York.

Kruglanski AW. 1975. The endogenous–exogenous partition in attribution theory. *Psychological Review* **82**: 387–406.

Kruglanski AW. 1992. On methods of good judgment and good methods of judgment: Political decisions and the art of the possible. *Political Psychology* **13**: 455–475.

Kruglanski AW. 1996. Motivated social cognition: Principles of the interface. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 493–520.

Kruglanski AW, Friedland N, Farkash E. 1984. Laypersons' sensitivity to statistical information: The case of high perceived applicability. *Journal of Personality and Social Psychology* **46**: 503–518.

Kruglanski AW, Webster DM. 1996. Motivated closing of the mind: 'Seizing' and 'freezing'. *Psychological Review* **103**: 263–283.

Kunda Z. 1990. The case for motivated reasoning. *Psychological Bulletin* **108**: 480–498.

Latane B, Darley JM. 1969. Bystander 'apathy'. *American Scientist* **54**: 244–268.

Lepper MR, Greene D, Nisbett RE. 1973. Undermining children's intrinsic interest with extrinsic reward: a test of the overjustification hypothesis. *Journal of Personality and Social Psychology* **28**: 129–137.

Levine JM, Higgins ET. in press. Shared reality in strategic problem-solving. *Organizational Behavior and Human Decision Processes*.

Levine JM, Resnick LB, Higgins ET. 1993. Social foundations of cognition. *Annual Review of Psychology* **44**: 585–612.

Lewin K. 1951. *Field Theory in Social Science*. Harper: New York.

Lewin K, Dembo T, Festinger L, Sears PS. 1944. Level of aspiration. In *Personality and the Behavior Disorders*, Vol. 1, McHunt J (ed.); Ronald Press: New York; 333–378.

Markus H, Zajonc RB. 1985. The cognitive perspective in social psychology. In *The Handbook of Social Psychology*, (Third Edition), Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA.

Martin LL. 1986. Set/reset: Use and disuse of concepts in impression formation. *Journal of Personality and Social Psychology* **51**: 493–504.

Martin LL, Achee JW. 1992. Beyond accessibility: The role of processing objectives in judgment. In *The Construction of Social Judgments*, Martin LL, Tesser A (eds); Erlbaum: Hillsdale, NJ; 195–216.

McArthur LZ. 1981. What grabs you? The role of attention in impression formation and causal attribution. In *Social Cognition: The Ontario symposium, Volume 1*, Higgins ET, Herman CP, Zanna MP (eds); Erlbaum: Hillsdale, NJ; 201–246.

McArthur LZ, Post DL. 1977. Figural emphasis and person perception. *Journal of Experimental and Social Psychology* **13**: 520–535.

McCann CD, Ostrom TM, Tyner LK, Mitchell ML. 1985. Person perception in heterogeneous groups. *Journal of Personality and Social Psychology* **49**: 1449–1459.

McGuire WJ, Padawer-Singer A. 1976. Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology* **33**: 743–754.

Mead GH. 1934. *Mind, Self, and Society*. University of Chicago Press: Chicago.

Merton RK. 1957. *Social Theory and Social Structure*. The Free Press: Glencoe, IL.

Merton RK, Kitt AS. 1952. Contributions to the theory of reference-group behavior. In *Readings in Social Psychology*, (Second Edition), Swanson GE, Newcomb TM, Hartley EL (eds); Holt, Rinehart & Winston: New York; 430–444.

Milgram S. 1974. *Obedience to Authority*. Harper & Row: New York.

Mischel W, Shoda Y. 1995. A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review* **102**: 246–268.

Mischel W, Shoda Y, Rodriguez ML. 1989. Delay of gratification in children. *Science* **244**: 933–938.

Moscovici S. 1985. Social influence and conformity. In *Handbook of Social Psychology (Third Edition), Volume 2*, Lindzey G, Aronson E (eds); Random House: New York; 347–412.

Moscovici S, Personnaz B. 1980. Studies in social influence V: Minority influence and conversion behavior in a perceptual task. *Journal of Experimental Social Psychology* **16**: 270–282.

Mussweiler T, Strack F. 1999. Comparing is believing: A selective accessibility model of judgmental anchoring. In *European Review of Social Psychology*, 10, Stroebe W, Hewstone M (eds); John Wiley: New York.

Neisser U. 1967. *Cognitive Psychology*. Appleton-Century-Crofts: New York.

Newcomb TM. 1952. Attitude development as a function of reference groups: The Bennington study. In *Readings in Social Psychology*, (Second Edition), Swanson GE, Newcomb TM, Hartley EL (eds); Holt, Rinehart & Winston: New York; 420–430.

Newcomb TM, Turner RH, Converse PE. 1965. *Social Psychology: The study of human interaction*. Holt, Rinehart & Winston: New York.

Newman LS, Uleman JS. 1990. Assimilation and contrast effects in spontaneous trait inference. *Personality and Social Psychology Bulletin* **16**: 224–240.

Nisbett RE, Ross LD. 1980. *Human Inference: Strategies and shortcomings of informal judgment*, Century Series in Psychology; Prentice Hall: Englewood Cliffs, NJ.

Olson JM, Roese NJ, Zanna MP. 1996. Expectancies. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 211–238.

Ostrom TM. 1984. The sovereignty of social cognition. In *Handbook of Social Cognition*, Vol. 1, Wyer RS Jr, Srull TK (eds); Erlbaum: Hillsdale, NJ; 1–38.

Park B, Rothbart M. 1982. Perception of out-group homogeneity and levels of social categorization: Memory for the subordinate attributes of in-group and out-group members. *Journal of Personality and Social Psychology* **42**: 1051–1068.

Petty RE, Cacioppo JT. 1986. *Communication and Persuasion: Central and peripheral routes to attitude change*. Springer-Verlag: New York.

Quattrone GA. 1982. Overattribution and unit formation: When behavior engulfs the person. *Journal of Personality and Social Psychology* **42**: 593–607.

Rosenthal R, Jacobson L. 1968. *Pygmalion in the Classroom: Teacher expectancies and pupils' intellectual development*. Holt, Rinehart & Winston: New York.

Ross L. 1977. The intuitive psychologist and his shortcomings: Distortions in the attribution process. In *Advances in Experimental Social Psychology*, Vol. 10, Berkowitz L (ed.); Academic Press: New York; 173–220.

Ross L, Amabile TM, Steinmetz JL. 1977. Social roles, social control, and biases in social-perception processes. *Journal of Personality and Social Psychology* **35**: 485–494.

Ross M. 1989. The relation of implicit theories to the construction of personal histories. *Psychological Review* **96**: 341–357.

Ross M, Fletcher GJO. 1985. Attribution and social perception. In *Handbook of Social Psychology (Third Edition, Volume 2)*, Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA; 73–147.

Ross M, Olson JM. 1981. An expectancy-attribution model of the effects of placebos. *Psychological Review* **88**: 408–437.

Rothbart M, Fulero S, Jensen C, Howard J, Birrell P. 1978. From individual to group impressions: Availability heuristics in stereotype formation. *Journal of Experimental Social Psychology* **14**: 235–255.

Sarbin TR, Allen VL. 1968. Role theory. In *Handbook of Social Psychology (Second Edition, Volume 1)*, Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA; 488–567.

Schank RC, Abelson RP. 1977. *Scripts, Plans, Goals, and Understanding: An inquiry into human knowledge structures*. Erlbaum: Hillsdale, NJ.

Schachter S. 1959. *The Psychology of Affiliation*. Stanford University Press: Stanford, CA.

Schachter S, Singer JE. 1962. Cognitive, social and physiological determinants of emotional state. *Psychological Review* **69**: 379–399.

Schlenker BR. 1985. Identity and self-identification. In *The Self and Social Life*, Schlenker BR (ed.); McGraw-Hill: New York; 65–100.

Schneider DJ, Hastorf AH, Ellsworth PC. 1979. *Person Perception*. Addison-Wesley: Reading, MA.

Schwarz N, Bless H, Strack F, Klumpp G, Rittenauer-Schatka H, Simons A. 1991. Ease of retrieval as information: Another look at the availability heuristic. *Journal of Personality and Social Psychology* **61**: 195–202.

Schwarz N, Clore GL. 1987. How do I feel about it? The informative function of affective states. In *Affect, Cognition and Social Behavior*, Fiedler K, Forgas J (eds); C. J. Hogrefe: Toronto; 44–62.

Schwarz N, Strack F, Hilton D, Naderer G. 1991. Base rates, representativeness, and the logic of conversation: The contextual relevance of 'irrelevant' information. *Social Cognition* **9**: 67–84.

Secord PF, Bevan W, Katz B. 1956. Perceptual accentuation and the Negro stereotype. *Journal of Abnormal and Social Psychology* **53**: 78–83.

Shantz CU. 1983. Social cognition. In *Cognitive Development*, Flavell JH, Markman EM (eds); Vol. 3 in *Carmichael's Manual of Child Psychology* (4th edn), Mussen PH (ed.); Wiley: New York; 495–555.

Sherif M. 1935. A study of some social factors in perception. *Archives Psychology* No. 187.

Sherif M. 1936. *The Psychology of Social Norms*. Harper & Brothers: New York.

Sherif M, Sherif CW. 1969. *Social Psychology*. Harper & Row: New York.

Sherman SJ, Corty E. 1984. Cognitive heuristics. In *Handbook of Social Cognition, Volume 1*, Wyer RS Jr, Srull TK (eds); Erlbaum: Hillsdale, NJ; 189–286.

Siegel A, Siegel S. 1957. Reference groups, membership groups, and attitude change. *Journal of Abnormal and Social Psychology* **55**: 360–364.

Smith ER. 1990. Content and process specificity in the effects of prior experiences. Target article In *Advances in Social Cognition*, Vol. 3, Srull TK, Wyer RS (eds); Erlbaum: Hillsdale, NJ; 1–60.

Smith ER, Mackie DM. 1995. *Social Psychology*. Worth: New York.

Snyder ML, Jones EE. 1974. Attitude attribution when behavior is constrained. *Journal of Experimental Social Psychology* **10**: 585–600.

Sorrentino RM, Higgins ET. 1986. Motivation and cognition: Warming up to synergism. In *Handbook of Motivation and Cognition: Foundations of social behavior*, Sorrentino RM, Higgins ET (eds); Guilford: New York; 3–19.

Spiro RJ. 1977. Remembering information from text: The state of the 'schema' approach. In *Schooling and the Acquisition of Knowledge*, Anderson RC, Spiro RJ, Montague WE (eds); Erlbaum: Hillsdale, NJ.

Srull TK, Wyer RS. 1979. The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology* **37**: 1660–1672.

Stangor C, Ruble DN. 1989. Strength of expectancies and memory for social information: What we remember depends on how much we know. *Journal of Experimental Social Psychology* **25**: 18–35.

Stapel DA, Winkielman P. 1998. Assimilation and contrast as a function of context-target similarity, distinctness, and dimensional relevance. *Personality and Social Psychology Bulletin* **24**: 634–646.

Strack F. 1992. The different routes to social judgments: Experiential versus informational strategies. In *The Construction of Social Judgments*, Martin LL, Tesser A (eds); Erlbaum: Hillsdale, NJ; 249–275.

Strack F, Bless H. 1994. Memory for non-occurrences: Metacognitive and presuppositional strategies. *Journal of Memory and Language* **33**: 203–217.

Strack F, Martin LL, Schwarz N. 1988. Priming and communication: Social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology* **18**: 429–442.

Stryker S, Statham A. 1985. Symbolic interaction and role theory. In *Handbook of Social Psychology, Volume 1*, Lindzey G, Aronson E (eds); Random House: New York; 311–378.

Sullivan HS. 1953. *The Collected Works of Harry Stack Sullivan (Volume 1): The Interpersonal Theory of Psychiatry*, Perry HS, Gawel L (eds); W. W. Norton & Co.: New York.

Tagiuri R. 1969. Person perception. In *The Handbook of Social Psychology, Volume 3*, (Second edition), Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA; 395–449.

Tajfel H. 1981. *Human Groups and Social Categories: Studies in social psychology*. Cambridge University Press: Cambridge.

Tajfel H, Flament C, Billig M, Bundy RP. 1971. Social categorization and intergroup behavior. *European Journal of Social Psychology* **1**: 149–178.

Taylor SE, Crocker J. 1981. Schematic bases of social information processing. In *Social Cognition: The Ontario Symposium*, Vol. 1, Higgins ET, Herman CP, Zanna MP (eds); Erlbaum: Hillsdale, NJ; 89–134.

Taylor SE, Fiske ST. 1975. Point of view and perceptions of causality. *Journal of Personality and Social Psychology* **32**: 439–445.

Taylor SE, Fiske ST. 1978. Salience, attention, and attribution: Top of the head phenomena. In *Advances in Experimental Social Psychology, Volume 11*, Berkowitz L (ed.); Academic Press: New York; 249–288.

Thomas WI, Znaniecki F. 1918. *The Polish Peasant in Europe and America, Volume 1*. Badger: Boston, MA.

Trope Y. 1986. Identification and inferential processes in dispositional attribution. *Psychological Review* **93**: 239–257.

Trope Y, Ginossar Z. 1988. On the use of statistical and nonstatistical knowledge: A problem-solving approach. In *The Social Psychology of Knowledge*, Bar-Tal D, Kruglanski AW (eds); Cambridge University Press: New York; 209–230.

Trope Y, Liberman A. 1996. Social hypothesis testing: Cognitive and motivational mechanisms. In *Social Psychology: Handbook of basic principles*, Higgins ET, Kruglanski AW (eds); Guilford: New York; 239–270.

Tversky A, Kahneman D. 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology* **5**: 207–232.

Weber M. 1967. Subjective meaning in the social situation. In *Culture and Consciousness: Perspectives in the social sciences*, Levitas GB (ed.); Braziller: New York; 156–169.

Wegener DT, Petty RE. 1995. Flexible correction processes in social judgment: The role of naive theories in corrections for perceived bias. *Journal of Personality and Social Psychology* **68**: 36–51.

Wegener DT, Petty RE (eds). 1998. Mental models. *Social Cognition* (Special Issue): 8 (No. 3); Guilford Press: New York.

Wegner DM. 1986. Transactive memory: A contemporary analysis of the group mind. In *Theories of Group Behavior*, Mullen B, Goethals GR (eds); Springer-Verlag: New York; 185–208.

Wegner DM, Bargh JA. 1998. Control and automaticity in social life. In *The Handbook of Social Psychology*, Gilbert DT, Fiske ST, Lindzey G (eds); McGraw-Hill: New York; 446–496.

Wegner DM, Erber R. 1992. The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology* **63**: 903–912.

Weiner B, Kukla A. 1970. An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology* **15**: 1–20.

White R, Lippitt R. 1968. Leader behavior and member reaction in three 'social climates'. In *Group Dynamics: Research and theory*, (Third Edition), Cartwright D, Zander A (eds); Harper & Row: New York.

Wilder DA. 1981. Perceiving persons as a group: Categorization and intergroup relations. In *Cognitive Processes in Stereotyping and Intergroup Behavior*, Hamilton DL (ed.); Erlbaum: Hillsdale, NJ; 213–258.

Wilson TD, Schooler JW. 1991. Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology* **60**: 181–192.

Wittenbrink B, Hilton JL, Gist PL. 1998. In search of similarity: Stereotypes as naive theories in social categorization. *Social Cognition* **16**: 31–55.

Word CO, Zanna MP, Cooper J. 1974. The nonverbal mediation of self-fulfilling prophecies on interracial interaction. *Journal of Experimental Social Psychology* **10**: 109–120.

Wyer RS, Carlston DE. 1979. *Social Cognition, Inference, and Attribution*. Erlbaum: Hillsdale, NJ.

Wyer RS, Srull TK. 1986. Human cognition in its social context. *Psychological Review* **93**: 322–359.

Yzerbyt VY, Schadron G, Leyens J-Ph, Rocher S. 1994. Social judgeability: The impact of meta-informational cues on the use of stereotypes. *Journal of Personality and Social Psychology* **66**: 48–55.

Zajonc RB. 1960. The process of cognitive tuning and communication. *Journal of Abnormal and Social Psychology* **61**: 159–167.

Zajonc RB. 1966. *Social Psychology: An experimental approach*. Brooks/Coles: Belmont, CA.

Zajonc RB. 1968. Cognitive theories in social psychology. In *The Handbook of Social Psychology*, Vol. 1, Lindzey G, Aronson E (eds); Addison-Wesley: Reading, MA; 320–411.

Zajonc RB. 1980. Cognition and social cognition: A historical perspective. In *Retrospections on Social Psychology*, Festinger L (ed.); Oxford University Press: New York; 180–204.

Zillmann D, Johnson RC, Day KD. 1974. Attribution of apparent arousal and proficiency of recovery from sympathetic activation affecting excitation transfer to aggressive behavior. *Journal of Experimental Social Psychology* **10**: 503–515.

Zimmerman C, Bauer RA. 1956. The effect of an audience on what is remembered. *Public Opinion Quarterly* **20**: 238–248.

Zukier H, Pepitone A. 1984. Social roles and strategies in prediction: Some determinants of the use of base rate information. *Journal of Personality and Social Psychology* **47**: 349–360.