
On the Dialectics of Discrimination

DUAL PROCESSES IN SOCIAL STEREOTYPING

GALEN V. BODENHAUSEN
C. NEIL MACRAE
JEFFREY W. SHERMAN

Over 35 years have passed since the historic moment when Martin Luther King, Jr., delivered his galvanizing speech entitled "I Have a Dream." In that speech, he expressed the hope that his children might "one day live in a nation where they will not be judged by the color of their skin, but by the content of their character." Explicit in this poignant comment is the assertion that there are two fundamentally different ways of judging others: either by relying on group-based assumptions, or by conducting an assessment of the personal qualities of each individual. This view has been at the heart of most social-psychological theories of stereotyping in social perception as well. For example, in the influential models of Brewer (1988) and Fiske and Neuberg (1990), a fundamental distinction is drawn between stereotyping and individuating or personalizing one's social impressions (see also Allport, 1954). In this chapter, we review the evidence for two qualitatively different pathways to social impressions, evaluate challenges to the validity of such distinctions, and consider how the dual-process models of stereotyping in social perception relate to other dual-process conceptualizations. We also consider

in some detail other aspects of stereotyping that involve the interplay of two qualitatively different processes. The overall utility of a dual-process approach to stereotyping is then evaluated in light of these considerations.

**STEREOTYPING VERSUS
INDIVIDUATION: DISTINCT PATHS
TO SOCIAL IMPRESSIONS**

Occasionally we may have the disorienting experience of not being able to "make sense" of the sensory input impinging upon us, but most often we can construct a meaningful representation of whatever external stimuli happen to be at the focus of our attention. Following the lead of philosophers such as Immanuel Kant, perception researchers have long asserted that the seemingly effortless attainment of a coherent and meaningful interpretation of the external world is accomplished via the interaction of bottom-up and top-down processes (e.g., Bruner, 1951; Neisser, 1976; Palmer, 1975; Yates, 1985). Bottom-up processes rely upon the raw input acquired by the sensory systems to furnish in-

formation about low-level stimulus features (e.g., shape, color, loudness, saltiness, etc.), whereas top-down processes rely upon the memorial representations of the perceiver (e.g., general knowledge, previous experiences, attitudes, goals, etc.) to impose coherence and meaning on these stimulus features. In this sense, perceptions routinely go "beyond the information given" in the current stimulus array (Bruner, 1957). The notion of being judged by the color of one's skin similarly implies taking a simple, bottom-up feature (e.g., a person's African, Asian, or European skin tone) and imbuing it with surplus social meaning (e.g., assumptions about the person's behavioral proclivities, moral qualities, etc.) that may be unsubstantiated in the actual evidence available about the individual. This process is the sort of phenomenon that we are likely to have in mind when we speak of stereotyping.

The top-down versus bottom-up distinction has considerable intuitive appeal as an analogue for stereotyping versus individuation. However, some potentially thorny problems arise when the issue is viewed in this way (cf. McCauley, 1988). For instance, even if one were to ignore a person's race completely and judge him or her solely on the basis of the personality dispositions that are revealed in a careful observation of the person's behavior, one would of necessity still rely heavily on top-down processes of social perception. Indeed, top-down processes inform virtually all meaningful thoughts and impressions that arise (e.g., Murphy & Medin, 1985; Yates, 1985).

Another way of framing the issue is to distinguish between two different types of information to be used in impression formation—namely, categories versus attributes (e.g., Brewer, 1988; Fiske & Neuberg, 1990; for a review, see Fiske, Lin, & Neuberg, Chapter 11, this volume). From this perspective, stereotyping is equated with reliance upon categories (such as race or gender), while individuation is marked by reliance on personal attributes (such as personality traits or behaviors). One's overall impression of a social target can thus be based upon the target's social group membership (and the attributes stereotypically associated with the group in question) or on his or her personal attributes (which normally will include numerous

nonstereotypic and/or counterstereotypic characteristics. Thus, the descriptive content and the evaluative content of one's overall impression may be quite different, depending upon whether categorical or attribute-based information is emphasized in the mental representation one forms of the target.

Stereotypes as Heuristics for Judgment

Attempts to understand when and how stereotypic judgments arise have led to the application of a related conceptual distinction between heuristic and systematic processing. Heuristic strategies for judgment, decision making, and problem solving are often contrasted with systematic or algorithmic ones (e.g., Kahneman, Slovic, & Tversky, 1982; Newell & Simon, 1972). The general spirit of this approach can be summarized as follows. Although there may be procedures available for reaching a decision or making a judgment that are likely to maximize decision quality, they are often cumbersome. Much simpler alternative strategies may be available that, although less likely to ensure a high-quality decision, nevertheless do a good enough job much of the time. These alternative strategies (i.e., heuristics) consist of simple inferential rules that reduce the number of considerations that must be taken into account in making a choice or a judgment. This framework has been successfully exploited in social-psychological domains (such as attitude change) by Chaiken and her associates (e.g., Chaiken, 1980, 1987; Chaiken, Liberman, & Eagly, 1989; Chaiken, Giner-Sorolla, & Chen, 1996; see Chen & Chaiken, this Chapter 4, volume). For example, when a person listens to a persuasive appeal and has some motivation to assess the validity of the speaker's position, the person may carefully attend to each argument and weigh and integrate it into an overall assessment. This systematic approach is contrasted with the use of simple heuristics (e.g., speaker credibility cues, audience reaction, etc.), which may provide a "quick and dirty" index of validity.

The same kinds of options are available in the context of many social judgments (Chaiken et al., 1989). One class of heuristics that is often available for social judgment consists of stereotypic beliefs about the target to be judged (Bodenhausen, 1988, 1990;

Bodenhausen & Wyer, 1985; Bodenhausen & Lichtenstein, 1987). If one must judge whether a young Latino is guilty of assault, for instance, one could pay careful, impartial attention to all available bits of evidence and, weighing their probative implications, render a judgment based on very systematic processing. Alternatively, one could use one's salient stereotypic beliefs about young Latinos to provide a quick, heuristic judgment ("They're aggressive, violence-prone people"), which may guide or dominate the processing of other available evidence (Bodenhausen, 1988; cf. Chaiken & Maheswaran, 1994). Once one has a framework for thinking about the available information, the requirements for making a judgment are substantially simplified (e.g., Macrae, Milne, & Bodenhausen, 1994).

Considering stereotypes to be heuristics for social judgment is not equivalent to viewing them as frameworks for general impression formation, because it remains possible that stereotypes can be used to guide judgments even when one has formed a relatively individuated impression of a social target. For example, consider the impression one might form of a gregarious, athletic, pizza-loving, female lawyer. An individuated impression of her will contain numerous facets, many of which may have some bearing on a decision that must be made about her (e.g., "Should I vote for her to become governor?"). If conditions permit, one may conduct a systematic assessment of her suitability for public office, based upon a relatively well-articulated mental impression of her. However, if one is pressed to make a judgment (perhaps after being ambushed by an opinion pollster), one may need to produce a quick response, and in this case one will be likely to rely on whatever heuristics are available to construct a reasonable response. If one's impression of the candidate is stereotype-dominated, then a stereotypic heuristic (e.g., "Lawyers can't be trusted") may be about the only readily available heuristic. If, instead, one has a richly individuated impression, then several distinct stereotypes may be available as heuristics. When many heuristic inference rules are potentially applicable, the most accessible one will probably be invoked (Chaiken et al., 1989). If a particular stereotypic belief is contextually salient (e.g., "Women can be trusted"), then it may form the dominant ba-

sis for the judgment. The important point is that an individuated mental representation of a person is not necessarily a guarantee that systematic judgments will be made about him or her.

Conditions of Stereotype Dominance

Whether general impressions or specific judgments are being considered, important insights are gained by placing the categorization-individuation distinction in the framework of heuristic versus systematic processes. In particular, this framing facilitates the generation of clear predictions about the conditions under which perceivers are likely to rely on stereotypes versus individuating information in social perception. In fact, a small set of factors has been repeatedly linked to the likelihood of a stereotype dominating one's response to another person. These factors, to be discussed in turn, are (1) information fit, (2) perceiver motivation, and (3) perceiver attentional capacity. As we will see, these moderating variables are largely convergent with the ones proposed in a wide variety of dual-process models.

Fit

A principal tenet of both Brewer's (1988) dual-process model and the continuum model (Fiske & Neuberg, 1990) is the notion that a stereotype will only be applied to a target when the other available information about him or her is congenial with the implications of the stereotype (see also Oakes, Haslam, & Turner, 1994). If one meets a librarian who rides a Harley-Davidson, smokes cigars, and has a pierced nose, one may be unlikely to assume that this person is just another typical librarian. These theoretical models predict that when fit is observed to be poor, individuation processes will ensue (Fiske, Neuberg, Beattie, & Milberg, 1987). Similar constraints are likely to hold in the context of other dual-process models. For example, in the persuasion model developed by Chaiken (1987), reliance on a simple heuristic such as "Experts can be trusted" might occur in many circumstances, but probably not when the expert is babbling incoherently or making patently absurd claims (e.g., "Toxic waste should be

dumped freely into the environment because it causes cancer and costs taxpayers billions of dollars"). In this case, the fit between the heuristic cue and the message cues is simply too discrepant.

The question of crucial importance is what kinds and amounts of stereotype-inconsistent information are necessary before perceivers note the poor fit and abandon their preconceptions. Also important is the question of whether stereotype-irrelevant information undermines perceptions of fit. It seems to be the case that perceivers are quite capable of overlooking aspects of the available information that are not stereotype-consistent, as well as of assimilating a wide range of essentially ambiguous information to their stereotypic expectations (e.g., Darley & Gross, 1983; Kunda & Sherman-Williams, 1993; for reviews, see Fiske, 1998; Hamilton & Sherman, 1994). However, when expectancies are clear-cut and the available information strongly and unambiguously contradicts them, such information will probably not be overlooked; indeed, it may be particularly likely to attract attention and be quite memorable (e.g., Hastie & Kumar, 1979; Sherman, Lee, Bessenoff, & Frost, 1998), as in the case of the biker/librarian.

Motivation

Stereotyping is usually characterized as a less effortful strategy for the pursuit of social perception goals. Individuation, which requires building a new impressional framework based on the novel feature conjunctions that are ascribed to the target person, is more effortful. The metaphor of the "cognitive miser" (Fiske & Taylor, 1984) emphasizes the idea that under many circumstances, social perceivers prefer not to engage in extensive mental effort. As such, the effortful process of individuation will be relatively unappealing, and perceivers will be content to rely on stereotypic preconceptions. This notion fits with Simon's (1957) famous characterization of humans as "satisficers" rather than optimizers. People want to do a good enough job to get by, but usually no more than that.

Of course, there are some circumstances in which the stakes are higher, and the potential costs of errors in social perception loom

large. Under such conditions, the extra motivation for accuracy may lead social perceivers to be more likely to avoid forming stereotypic impressions or relying on stereotypes as judgmental heuristics. Similar claims are offered in a host of dual-process models. Persons processing persuasive messages are more likely to rely on message cues than on peripheral cues when they are highly motivated (e.g., Petty & Cacioppo, 1979; see Petty & Wegener, Chapter 3, this volume). People are more likely to think carefully about the costs and benefits of various courses of action in a given situational context, rather than simply relying on a spontaneous assessment of the situation, when motivation levels are high (Fazio, 1990; see Fazio & Towles-Schwen, Chapter 5, this volume). And people are more likely to make adjustments to dispositional inferences, in recognition of the operation of situational constraints, when they are accuracy-motivated (see Gilbert & Malone, 1995). Thus, it would seem to be a general principle of social information processing that perceivers are likely to rely on relatively simple strategies for judgment, inference, and behavioral choice, unless the situation creates extra motivational energy for the effort required by more systematic forms of thinking (Chaiken et al., 1989).

In the realm of stereotyping, various motivational factors have been shown to be important in moderating the extent of perceivers' reliance on stereotypes in constructing the social world. Fiske and her colleagues have led the charge in investigating the role of various forms of social interdependence in motivating accurate, individuated social impressions (e.g., Erber & Fiske, 1984; Fiske, 1993; Fiske & Dépret, 1996; Ruscher & Fiske, 1990; for a review, see Fiske et al., Chapter 11, this volume). When people's outcomes are on the line, they are willing to take the trouble to form an individuated impression of others who might affect those outcomes. Accountability pressures (e.g., Tetlock, 1992; Tetlock & Lerner, Chapter 28, this volume) also promote more detailed, less globally stereotypic social judgments (Bodenhausen, Kramer, & Süsser, 1994; Nelson, Acker, & Manis, 1996; Pendry & Macrae, 1996). When people feel they must be able to defend their choices and judgments, they are more likely to at-

tend effortfully to a broader range of information, rather than rely on simple preconceptions. And the specific motivation to avoid stereotyping and prejudice can also promote less stereotypic responses, at least under some circumstances (see Bodenhausen & Macrae, 1998; Devine & Monteith, Chapter 17, this volume).

Conversely, certain situational and dispositional variables are associated with lowered motivation for systematic thinking. Kruglanski and Webster (1996) have shown that certain epistemic orientations are reliably linked to a preference for quick conclusions. In particular, the need for cognitive closure is an orientation (varying across both persons and situations) that is associated with a sense of urgency in the attainment of closure regarding a decision or judgment. When this need is high, stereotyping will be likely to prevail over individuation (e.g., Kruglanski & Freund, 1983). Variables such as time pressure, noise, and fatigue are examples of some antecedents of the need for cognitive closure.

Mood states have also been linked to perceivers' motivation for effortful thinking (e.g., Schwarz, 1990; see Bless & Schwarz, Chapter 21, this volume). Happiness is associated with feelings of contentment, which may undermine motivation for effortful thinking; instead, happy people may be content to rely on stereotypic preconceptions (Bodenhausen, Kramer, & Süsner, 1994). Sadness, on the other hand, may be associated with motivation to understand one's problematic environment better (e.g., Weary, 1990; Weary & Edwards, 1994), leading to greater attention to individuating information (Bless, Schwarz, & Wieland, 1996; Bodenhausen, Sheppard, & Kramer, 1994; Edwards & Weary, 1993) or to a greater likelihood of correcting initial stereotypic biases (Lambert, Khan, Lickel, & Fricke, 1997). Although some researchers have contended that these kinds of mood effects are not primarily motivational in origin (e.g., Mackie & Worth, 1989), the overall pattern of evidence suggests that motivation is playing at least some role in producing these effects (for reviews, see Bless, Schwarz, & Kimmelmeier, 1996; Bodenhausen, 1993). It thus appears that a variety of motivational factors can moderate the tendency to engage in stereotyping versus individuation.

Capacity

The third major moderator of stereotyping versus individuation is attentional capacity. Miller (1956) decreed that we humans can only manage to deal effectively with about 7 ± 2 chunks of information at a time. The "bottleneck" of attention (Simon, 1994) thus limits our very ability to engage in complex, individuated thinking. Crucially, whenever circumstances reduce our available capacity, they also reduce the possibility of our conducting a thorough, systematic assessment of social targets. Cognitive capacity is widely proposed as a moderator of systematic thinking in persuasion models (Chaiken et al., 1989; Petty & Cacioppo, 1986), attitude-behavior models (Fazio, 1990), and attribution models (Gilbert, Pelham, & Krull, 1988; Trope & Alfieri, 1997; for a review, see Trope & Gaunt, Chapter 8, this volume).

Numerous variables appear to promote stereotyping by reducing perceivers' capacity for engaging in more systematic assessments of others. Mental busyness and distraction are associated with greater use of activated stereotypes (Gilbert & Hixon, 1991; Macrae, Hewstone, & Griffiths, 1993). Similarly, when a judgment situation is especially demanding or difficult, or when judgment-relevant information is superabundant, people may fall back on simple strategies such as stereotype-based heuristics as a way of coping with this complexity (Bodenhausen & Lichtenstein, 1987; Pratto & Bargh, 1991). Attentional capacity also shows diurnal fluctuations, with some individuals having relatively greater capacity for cognitive tasks earlier in the day and others later (Broadbent, Broadbent, & Jones, 1989; May, Hasher, & Stoltzfus, 1993; Revelle, 1993). When circadian arousal levels are at their daily nadir and attentional resources are correspondingly scarce, people are more likely to rely on stereotypes in making judgments, if the stereotypes are descriptively relevant to the dimension of judgment (Bodenhausen, 1990). It is also the case that excessive amounts of arousal can disrupt focused attention, and high arousal levels have also been linked to heightened stereotyping (see Baron, Inman, Kao, & Logan, 1992; Kim & Baron, 1988; Stephan & Stephan, 1985; Wilder & Simon, 1996).

Overall, the research we have summarized supports the view that stereotyping is often the default process of social perception, and that it is only superseded by individuating strategies when there is sufficient motivation and attentional capacity. As such, both motivation and capacity can be regarded as necessary conditions for individuation. In other words, the extent of systematic thinking = $f(\text{motivation} \times \text{capacity})$. If either component is too low, stereotyping will be likely to prevail. For instance, even individuals who are highly motivated to form accurate, individuated impressions are unable to do so if their attentional capacity is constrained (Osborne & Gilbert, 1992; Pendry & Macrae, 1994). Similarly, one may have ample capacity, but lacking any motivation to think deeply about the social world, one will probably be content to rely on stereotypes. Stereotypic thinking is thus conceived of as the dominant tendency that is only overridden when circumstances are right (Fiske & Neuberg, 1990).

This view does not imply, however, that limitations of motivation or capacity are the principal or root cause of stereotyping (cf. Oakes & Turner, 1990). It simply specifies the conditions under which people are most likely to go beyond a merely stereotypic reaction. To be sure, there are numerous reasons why stereotyping occurs in the first place, and we have summarized a number of them elsewhere (Bodenhausen & Macrae, 1996). Undoubtedly, stereotypes are valuable in large part because they enrich people's representations of others via top-down inference processes (Bodenhausen, 1992; Medin, 1988). It is important to realize that this fact in no way contradicts the cognitive miser viewpoint, although it is sometimes presented as inconsistent with it. In fact, it is at the very heart of this metaphor. By relying on stereotypes to form impressions or judgments of others, people rely on precomputed, preorganized frameworks that provide a potentially rich set of knowledge at the cost of relatively little effort. Moreover, the cognitive capacity saved by relying upon stereotypes is available for facilitating other goals people may happen to be pursuing (Macrae, Milne, & Bodenhausen, 1994; Sherman et al., 1998). Stereotypes are efficient tools for social perception, and the dual-process approach has been a success in providing a theoretically co-

herent specification of some of the major determinants of their use.

CHALLENGES TO DUAL-PROCESS MODELS

Although dual-processing approaches to stereotyping have produced an impressive array of empirical findings, they are not without their critics. Both the theoretical underpinnings and the empirical support for dual-process models have been challenged. We now consider some of these challenges in detail.

Are Categories and Attributes Distinct Concepts?

Although the distinction between categories and personal attributes is intuitively compelling, it is problematic in practice. To say that "race" is a category, but "extravert" is not, is simply not justifiable (for evidence of the categorical nature of personality descriptors, see Hampson, John, & Goldberg, 1986; John, Hampson, & Goldberg, 1991). *Any* concept that we might think of as a personality attribute (e.g., "extraverted," "assertive," "optimistic") can also be used as the basis for defining a social category (e.g., "extraverts," "assertive people," "optimists," etc.). As such, the distinction between stereotypic and individuating information becomes difficult to maintain.

Nevertheless, there are important differences between social categories and trait-based categories. First, there is a wide disparity in the degree of consensuality with which people have accepted the two kinds of information as valid means of distinguishing between groups of people. It has been argued that the essential criteria for group membership are that individuals define themselves and are defined by others as members of some category (e.g., Tajfel & Turner, 1986). It is clear that people frequently define themselves as members of social categories (e.g., African Americans) that are distinct from other social categories (e.g., European Americans). It is also clear that people are less likely to define themselves as members of trait categories (assertive people) that are distinct from other trait categories (unassertive people). Rather,

we typically rely on trait knowledge to distinguish ourselves from other *individuals* who do not share our particular trait. Thus, whereas social categories are used to distinguish groups of people from one another, traits are used to distinguish individuals from one another.

The research of Andersen and Klatzky (1987; Klatzky & Andersen, 1988) suggests another important difference between social categories and trait categories. Whereas trait categories are typically descriptively unidimensional, stereotype categories are usually much richer and multifaceted. Therefore, trait categories distinguish between people along a single dimension, whereas stereotypes typically distinguish groups from one another on multiple dimensions. Relatedly, members of the same social categories are similar to one another along more dimensions than are members of the same trait categories. This difference has a number of important implications for social perception. For example, we might expect there to be greater inductive potential within social categories than trait categories. A person who knows something about one member of a stereotyped social group can infer that other members of the group may be the same way. The person may be less willing to make such assumptions about members of trait-based categories, particularly along dimensions that are unrelated to the central trait in question (Quattrone & Jones, 1980). These differences in inductive potential are clearly related to issues of perceived group variability, and thus will influence perceivers' willingness to infer attributes of an individual based on his or her group membership and attributes of a group based on any particular member (Park & Hastie, 1987). As a result, perceivers will be more likely to view stereotyped social categories than trait categories as "natural kinds" with underlying essences that are meaningful and unalterable (Rothbart & Taylor, 1992).

The disparity in between-group differences and within-group similarities between social and trait categories should also influence the usefulness and efficiency of the different types of categories during social perception. Categories that produce a stronger ratio of within-category similarity to between-category differences ought to be relied on more heavily (e.g., Turner, Hogg, Oakes,

Reicher, & Wetherell, 1987). In fact, Andersen, Klatzky, and Murray (1990) demonstrated a number of processing advantages associated with the application of social categories versus trait categories. This sort of evidence may go a long way in supporting the assumption of the dual-process models that so-called "individuating information" is indeed qualitatively distinguishable from stereotypic information.

Are Categorization and Individuation Distinct Processes?

Dual-process models argue not only that categories and attributes are distinct concepts, but that the applications of category-based and individuating information involve fundamentally distinct cognitive processes. However, both Smith and Zárate (1992) and Kunda and Thagard (1996) have questioned this assumption. Smith and Zárate's (1992) challenge comes in the form of an exemplar-based model of social judgment. According to this model, impressions of a target are based on the exemplars that are activated by the target. Exemplar activation is driven by the aspects of the target to which perceivers' attention is drawn. If attention is primarily focused on the "femaleness" of a target, other female exemplars will be activated, and these will direct the impressions formed of the target. In contrast, if the assertiveness of the target's behavior is the focus of attention, assertive behavioral exemplars will be retrieved and will guide impression formation. Thus, we might say that in the former case perceivers are relying on categorical information about the target's sex to judge her, whereas in the latter case they are relying on individuating information about her assertiveness. However, in both cases impressions are based on retrieved individual exemplars. In this view, there is no qualitative difference between the processes involved in forming category-based and individuated impressions.

Kunda and Thagard (1996) outline a similar model, which based on the activation of interconnecting nodes in a spreading-activation network. The medium of the mental representation is different than in Smith and Zárate's model, but many of the most important assumptions are the same. In particular, the extent to which impressions are based

on categorical or individuating information depends primarily on the amount of attention that is directed at each type of information. If both types of information receive attention, then the impression is determined by the way the networks pertaining to the categorical and individuating information interact and eventually settle on a stable pattern of activation. As in Smith and Zárate's model, the underlying cognitive processes involved in categorization and individuation are the same.

Despite the interesting claims of these models, we believe that there are legitimate bases for distinguishing between categorization and individuation processes. For one thing, when deciding (for example) that a man is unfriendly because he is a skinhead, the perceiver need do nothing more than rely on a simple, preexisting association in memory between the category and trait. In contrast, when deciding that a man is unfriendly because he pushed his way through a crowd, the perceiver engages in an active inference process that involves the creation of new knowledge. That is, the perceiver must (1) characterize the pushing behavior on some trait-relevant dimension, and (2) decide whether the identified characteristic reflects an enduring personality trait of the actor. This is true even if impressions are based on retrieved exemplars or parallel-constraint-satisfaction processes. For example, in an exemplar-based model, the trait meaning still must be extracted from the behavioral exemplars activated by the pushing incident in a way that is not necessary when "skinhead" exemplars are activated by the skinhead. In the latter case, there is still a simple association between the retrieved skinheads and unfriendliness. Thus there is a fundamental distinction between the kinds of associative processes inherent in stereotyping and the kinds of inference processes that occur during behavioral encoding (Sherman, 1996).

We do not wish to suggest that inference processes play no role in stereotype application. In the example above, the perceiver will still need to infer (at some level) that the man encountered is a skinhead before a stereotype can be applied. However, inferring the presence or absence of a categorical feature (particularly a perceptually available feature) is not equivalent to inferring the descriptive meaning and trait implications of a behav-

ioral act. Although inferring traits from behaviors may be a relatively spontaneous process (e.g., Carlston & Skowronski, 1994), it nevertheless may typically require more cognitive effort than categorizing and stereotyping. This is most clearly demonstrated by the fact that stereotypes become relatively more influential than individuating information in conditions of low motivation or cognitive capacity (as described above). One would not expect to find these effects if there were no differences in the difficulty of the processes involved in categorization and individuation.

Redefining Stereotyping and Individuation

Even if there were indeed no meaningful distinction to be drawn between categories and attributes, there are other bases for distinguishing between stereotyping and individuation. Rather than conceiving of the distinction between stereotyping and individuation in terms of qualitative differences in the types of informational input (i.e., categories vs. attributes), we may find it more defensible to think about differences in the *products* of impression formation that characterize stereotyping versus individuation. Specifically, we might say that stereotyping occurs when impressions are dominated by any particular preexisting mental category (which will most often, but perhaps not always, be one of the richer, more vivid sorts of categories identified as "stereotypes" by Andersen & Klatzky, 1987). In contrast, individuation occurs when impressions are not dominated by any particular category, but are based instead upon numerous distinct categories (Langer, Bashner, & Chanowitz, 1985). These various categories could include relatively unidimensional trait concepts (e.g., "gregarious," "athletic") as well as richer, more vivid social types (e.g., "female," "lawyer"). If one's impression of the gregarious, athletic, pizza-loving, female lawyer takes all of these facets into account, then individuation has occurred. However, if one responds to the hypothetical target primarily in terms of her gender or her occupation (or, for that matter, her athleticism) and constructs a mental image of her that relies primarily on default assumptions associated with this dominant category, then stereotyping can be said to have occurred.

From this standpoint, an individuated or personalized impression results from taking into account the unique conjunction of attributes (or categories) ascribed to the person, whereas a stereotypic impression results from using a single category as a framework for construing the person. In the latter case, the person is likely to be perceived as largely interchangeable with other members of the dominant category. The major differences, then, between stereotyping and individuation lie (1) in the number of organizing themes that are present; and (2) in whether the organizing framework is primarily a precomputed representation that is simply retrieved from memory (and to which other information is assimilated), or one that must be newly constructed in order to accommodate the novel constellation of qualities that constitute the content of the person's individual character.

Sometimes the dominant categorization guiding impression formation may be a subtype (e.g., "women lawyers"; see Macrae, Bodenhausen, & Milne, 1995). Although this sort of impression is more sensitive than simply judging the target in terms of her gender, for example, it is nevertheless an instance of stereotyping, because the target is still being construed by reference to membership in a particular category that includes multiple, substantially interchangeable exemplars (otherwise, there would be no subtype). An individuated impression should refer to other qualities that are not necessarily assumed to be shared by members of the subtype. From this perspective, the dominance of a single impression framework when many alternative categories are applicable is the characteristic feature of stereotyping. And dominance occurs not only when other information is simply neglected, but also when the other information is assimilated to the implications of the dominant category (e.g., Duncan, 1976; Kunda & Sherman-Williams, 1993; Sagar & Schofield, 1980) or is actively inhibited (e.g., Dijksterhuis & van Knippenberg, 1996; Macrae et al., 1995; see Bodenhausen & Macrae, 1998). We assume that certain types of categories are more likely to achieve impression dominance than others. Specifically, richer, more vivid social categories such as the ones studied by Andersen and Klatzky (1987) are much more likely to serve as the primary frameworks for our impres-

sions of others than are trait categories. In that sense, the continuum model's distinction between categorization and individuation is maintained in spirit, but the potential conceptual problems of distinguishing between an attribute and a category are circumvented.

Do Categories Dominate Individuating Information?

The formulation above maintains one critical distinction between categorization and individuation, even if we were to accept that there are otherwise no definitional or processing-based differences between attributes/individuation and categories/categorization. This distinction is that multidimensional social categories are more likely to dominate an impression than are unidimensional trait categories. However, even this assumption has recently been challenged by Kunda and Thagard (1996), who state that "we do not give stereotypes a special processing role but rather treat them as no different from other information about people such as their traits and behavior" (p. 286) and that "whenever stereotypes and individuating information are both observed, they will jointly influence impressions" (p. 300). Thus, rejecting the dominance of stereotype-based over individuating information, they propose instead a model in which all known information about a target is used to construct a mental impression. Whether it is membership in a social group, abstract trait information, or specific behaviors, each type of social information is assumed to be of equal *a priori* importance in the overall impression. The various pieces of information mutually constrain each other's meaning through a parallel-constraint-satisfaction process (e.g., Holyoak & Thagard, 1989). Specifically, through an iterative process, all concepts that are noticed in the stimulus input become activated, and activation (as well as inhibition) spreads both among the observed characteristics and to other concepts that are semantically linked to the observed characteristics. Eventually the activation pattern settles into a reasonably stable pattern, and this pattern of concepts, activated to various degrees, constitutes the mental impression of the target.

There can be no doubt that parallel-constraint-satisfaction models have provided

appealing accounts for a variety of phenomena, such as letter perception (McClelland & Rumelhart, 1981) and discourse comprehension (Kintsch, 1988). Whether they provide a better account for social impression formation and judgment than the dual-process approaches that we have summarized above is a question that warrants further consideration. Kunda and Thagard (1996) claim that their approach can account for all phenomena that the serial, dual-process models can account for, plus many others that the serial approaches cannot. Below we consider the strength of their case.

The most fundamental difference between the parallel-constraint-satisfaction model proposed by Kunda and Thagard and its rivals concerns the question of whether stereotypes really are likely to dominate social impressions. Kunda and Thagard say, unequivocally, "no." Several empirical findings are relevant to this issue, as well as some general theoretical and ecological observations. First we consider the often reported finding that stereotypes become impotent in the presence of specific individuating information (e.g., Locksley, Borgida, Brekke, & Hepburn, 1980; Nisbett, Zukier, & Lemley, 1981; see Kunda & Thagard, 1996, for a thorough review). These studies suggest that when individuating information is available, stereotypes have little if any influence on social judgments. This is especially true when the individuating information is highly diagnostic with respect to the judgment, but may also sometimes be true even when the information is nondiagnostic (see Hilton & Fein, 1989). Reporting the results of a meta-analysis, Kunda and Thagard note that in studies that orthogonally varied both stereotype and individuating information, the effect of the individuating information is substantially larger. From this perspective, the concern that people may often be judged not by their individual qualities, but rather by the color of their skin or other social stereotypes, seems misplaced. Kunda and Thagard conclude, "It is difficult to see how one can maintain the view that stereotypes dominate impressions in the face of such findings" (p. 303).

Methodological Issues

Several factors deserve further consideration before we accept the conclusion that stereo-

types become relatively impotent in the face of individuating information. First, some of the studies that show these effects investigated very weak stereotypes, such as "Engineering students have a higher tolerance for electric shock" (Nisbett et al., 1981). It is not hard to see that such stereotypes might be easily dominated by other information. Be that as it may, many other studies did in fact use stronger, better-established stereotypes (e.g., gender, sexual orientation, race, etc.). However, these stereotypes were often activated in relatively pallid ways. Beckett and Park (1995) noted that many studies documenting the absence of stereotyping effects in the presence of individuating information made use of vivid, salient manipulations of individuating information, but that the category information was not made salient. In an extension of earlier work by Locksley, Hepburn, and Ortiz (1982), Beckett and Park found that gender stereotypes exerted little effect on assertiveness judgments when gender was conveyed in the same pallid way it was manipulated by Locksley et al. However, when target gender was manipulated via photographs, gender clearly influenced assertiveness judgments. With salient visual cues to category membership (as is commonly the case in real-life interactions), stereotypic expectancies did influence social judgments substantially.

More generally, the experimental context in most of the studies reviewed by Kunda and Thagard produces a strong demand that research participants attend to and use the presented individuating information. Gricean norms of communication clearly imply that in conversation, one should only provide information if it is relevant (Grice, 1975). By extension, it is reasonable for experimental participants to assume that if the researcher has provided them with individuating information, they must be expected to use it (Schwarz, 1994; see also Leyens, Yzerbyt, & Schadron, 1994). Thus, it would not be too surprising that concrete information that is explicitly brought to participants' awareness with an implicit guarantee of relevance would have a notable impact on judgments. Finally, as Brown (1986) has argued, the lack of effects seen with many kinds of stereotypes can also plausibly be attributed to social desirability biases. Well-educated undergraduates may often be quite reluctant to furnish stereotypic reactions and may well be on their guard to

monitor such responses when their behavior is being monitored by a researcher.

Interpreting the Data

There is further reason to question whether the data summarized by Kunda and Thagard (1996) do support the conclusion that individuating information has dominated the use of stereotypes in this research literature. As a case in point, consider the influential research of Locksley et al. (1980). The Locksley et al. studies showed that a man was rated as more assertive than a woman was only when no diagnostic information was presented about the targets. When diagnostic behaviors were presented, the man and woman were viewed as equally assertive. Although this pattern is often taken as clear evidence for the relative impotence of stereotypes, such an interpretation is not universally accepted. The problem is that the null effect could very well represent a contrast effect, whereby the assertive act by the woman was seen as more assertive than the same act when performed by a man (in fact, this was true in the Locksley et al. study). In some cases, such contrasting processes may produce counterstereotypical judgments when combined with the trait implications of the stereotype (e.g., Biernat & Manis, 1994; Linville & Jones, 1980). However, in other cases, the contrast effect may simply cancel out the effects of the stereotype and produce null effects on target judgments (as in the case of Locksley et al., 1980). Thus, the application of stereotypes may indeed have occurred in many of the very studies that are commonly presented as demonstrating an absence of stereotyping effects.

The relevance of contrast effects to Kunda and Thagard's model could be questioned, given that in many cases, such effects may reflect the use of effortful causal reasoning on the part of perceivers. For example, perceivers may reason that in order to overcome socially accepted norms of passive behavior for women, a woman must be *especially* assertive. Kunda and Thagard regard relatively controlled thought processes of this sort as lying outside the explanatory reach of the parallel-constraint-satisfaction model. Although it is debatable whether most contrast effects do in fact involve conscious reasoning strategies,

for the generalizability of Kunda and Thagard's model. Specifically, it is not a trivial fact that contrast processes are more likely to occur in response to stereotype-inconsistent than to stereotype-consistent behaviors (see Kobryniewicz & Biernat, 1998). Perceivers are generally more likely to seek causal explanations for unexpected than for expected behaviors (e.g., Crocker, Hannah, & Weber, 1983; Hastie & Kumar, 1979), and they are more likely to make situational attributions for stereotype-inconsistent than for stereotype-consistent behaviors (e.g., Maass, Milesi, Zabbini, & Stahlberg, 1995). Stereotype-consistent behaviors tend to be attributed (if attributions are made at all) to the internal properties of the actor (Bodenhausen & Wyer, 1985; Yzerbyt, Rogier, & Fiske, 1998). These attributional biases diminish the trait implications of inconsistent behaviors and help to maintain the stereotype. Therefore, if the parallel-constraint-satisfaction model is limited to explaining relatively automatic, mindless processes of impression formation (as Kunda and Thagard themselves assert), then it will primarily be useful for predicting how stereotypes and stereotype-confirming information will be weighted. It may be of less use for understanding how inconsistent information is integrated into an overall impression, since this integration typically involves effortful rather than automatic processes.

Further Support for Stereotype Dominance

To focus on the relative weight given to stereotypes and individuating information as the sole indicator of stereotype dominance does not tell the whole story. Other relevant sources of data clearly demonstrate the dominance of stereotypes in impression formation. For example, Sherman (1996) showed that the availability of a stereotype reduced the extent to which perceivers retrieved previously encountered individuating information as they were making target judgments. Trope and Thompson (1997) further showed that perceivers with an available stereotype were less likely to seek out individuating information about a target. These studies demonstrate that stereotypes provide people with a sense of informational validity that decreases their interest in available individuating information.

on what people can remember about a target, stereotypes may be particularly likely to predominate. For a variety of reasons, stereotype-consistent individuating information is more easily retrieved from memory than is stereotype-inconsistent and irrelevant information (e.g., Dijksterhuis & van Knippenberg, 1996; Rothbart, Sriram, & Davis-Stitt, 1996; Sherman et al., 1998; van Knippenberg & Dijksterhuis, 1996). In this case, stereotypes dominate judgments by influencing the subset of individuating information that is most available in memory.

Finally, as noted above, an extensive research literature has developed from within the framework of a dual-process conceptualization of stereotyping versus individuation. The hallmark of this literature is the demonstration that stereotypes are particularly likely to dominate impressions and judgments under conditions of low capacity and/or motivation. The parallel-constraint-satisfaction model is hard pressed to account for this pattern of findings. Consequently, Kunda and Thagard (1996) attempt to dismiss the evidence as equivocal. Conceding that the available studies indeed do show that "reduction in cognitive resources increases reliance on stereotypes" (p. 302), they argue that it may well be the case that these resource constraints increase reliance upon individuating information also. It is certainly a counter-intuitive notion to claim that information-processing constraints will increase the use of all types of impression-relevant information. But even if this assertion were correct, it still cannot explain why judgments should shift more in the direction of the stereotype under conditions of resource constraint. Thus, it seems that the parallel-constraint-satisfaction model cannot account for one of the principal empirical patterns through which the dual-process models are substantiated. Stereotypes *do* dominate social impressions and judgments, and they do so under the conditions specified by the dual-process models.

As for phenomena that the parallel-constraint-satisfaction model can explain but the dual-process, serial models cannot, Kunda and Thagard emphasize evidence showing that the effects of stereotypes depend on the nature of the judgment task (Kunda, Sinclair, & Griffin, 1997). Specifically, they note that "individuating information undermines the

effects of stereotypes on ratings of the target's traits but does not undermine the effects of stereotypes on predictions about the same target's future trait-related behavior" (pp. 300-301). In actuality, exactly this pattern has been offered as support for the dual-process approach (Bodenhausen & Lichtenstein, 1987; Bodenhausen & Wyer, 1985). Because of the relative simplicity of trait ratings, given clear evidence bearing on them, Bodenhausen and Lichtenstein argued that it takes relatively little motivation or capacity to make evidence-based trait judgments. As previously noted, trait inferences have been shown to occur relatively spontaneously in a wide range of experiments (e.g., Carlston & Skowronski, 1994; Lupfer, Clark, & Hutcherson, 1990; Newman, 1991; Uleman, Hon, Roman, & Moskowitz, 1996). More complicated or effortful forms of inference, such as predictions of future behavior or judgments of guilt, may be much more likely to recruit stereotypes as judgmental heuristics, in the absence of sufficient motivation and/or processing capacity. It remains debatable whether there are significant empirical phenomena that are better explained by Kunda and Thagard's model than by dual-process models.

Ecological Issues: On the Seriality of Impression Formation

A broader problem with the parallel-constraint-satisfaction model is that in proposing simultaneous, mutual constraint of stereotypes and individuating information, the model seemingly overlooks the largely serial fashion in which social information is acquired in everyday life. As Brewer (1988) has emphasized, stereotypic categories such as ethnicity, age, gender, or occupation are often readily apparent upon one's first encountering a person. The stereotypes associated with these features can be activated very quickly and automatically (e.g., Banaji & Greenwald, 1995; Bargh, 1997 and Chapter 18, this volume; Devine, 1989; Macrae, Bodenhausen, Milne, Thorn, & Castelli, 1997), setting up expectations that can bias and constrain interpretations of subsequently encountered information (e.g., Dunning & Sherman, 1997; Kunda & Sherman-Williams, 1993; Sagar & Schofield, 1980) and leading to the preferential search

for stereotype-confirming information (e.g., Johnston & Macrae, 1994; Snyder & Cantor, 1979; Trope & Thompson, 1997). In contrast, we have already argued that forming individuated impressions of others based on their behaviors requires a more demanding inference process. Moreover, first encounters are often relatively superficial, providing minimal individuating information in any case. Thus, the possibility of *mutual* constraint is undermined by the typical sequence of *serial* information acquisition. Often it is only with more time that perceivers can observe a range of individuating behaviors and draw trait inferences, and by then their impressions may have already been colored by stereotypic beliefs.

The parallel-constraint-satisfaction model does assume that the first information that one encounters is likely to have greater influence than subsequent information. In fact, it explains Asch's (1946) classic demonstration of primacy effects in impression formation in this fashion. However, participants in Asch's studies actually did receive trait descriptors in virtually immediate succession, so if there were ever a situation where mutual parallel constraint of impressions should occur, it should be in this sort of context. Yet Kunda and Thagard suggest that the activation network settles after each trait is encountered, thereby giving greater weight to initial information by biasing the "start values" for activation levels on subsequent iterations. This assumption, of course, introduces a substantial serial component to their model. It is a sort of escape hatch for explaining stereotype dominance when it occurs, but stereotype dominance is nevertheless regarded as exceptional rather than typical. We disagree, given the temporal priority that stereotypes have under a wide array of natural information acquisition conditions and the importance they have in providing a rich, precomputed model of the individuals we encounter. As Medin (1988, p. 124) has noted, "some properties may not be simply more salient than others, but also more *central*" (emphasis in original; see also Asch, 1946; Asch & Zukier, 1984). These central properties are much more likely to constrain the interpretation of the other information than vice versa. As Andersen and Klatzky (1987) have demonstrated social

stereotypes are much more likely, in the typical case, to provide a rich central theme for thinking of others than are personality trait concepts (and, we would add, individual behaviors). All person information is not equal. To deny this reality may add simplicity to the parallel-constraint-satisfaction model, but it results in conclusions that are markedly at odds with the experiences of members of stigmatized groups, who routinely report being judged "by the color of their skin" or other stigma markers, rather than by their individual character.

Kunda and Thagard's model is of course not without virtues. It may be a rather accurate model of the processes that occur when people read concise, verbally presented person descriptions provided by researchers under a variety of circumstances. But what it is modeling may be more akin to text comprehension (Kintsch, 1988) than to social impression formation and judgment, which come packaged with abundant motivations to use and preserve stereotypic preconceptions of social groups. We believe that the dual-process, serial models do a better job of accounting for this reality than the parallel-constraint-satisfaction model that they have proposed.

FURTHER DUALITIES OF SOCIAL STEREOTYPING

In addition to distinguishing between stereotyping and individuation, it is useful to make further distinctions when considering the nature of stereotyping and its avoidance. Specifically, within the domain of stereotyping, it may be important to distinguish between *implicit* and *explicit* forms of stereotype activation and use (cf. Greenwald & Banaji, 1995). Similarly, stereotype avoidance may be subdivided into two subtypes: (1) the motivated thoroughness of individuation that we have focused on above, and (2) stereotype inhibition and correction (Bodenhausen & Macrae, 1998). In this section, we consider this latter distinction in some detail.

The Goal of Control: Alternative Pathways to Stereotype Avoidance

As we have already noted, dual-process models of person perception (Brewer, 1988; Fiske

& Neuberg, 1990) have provided some valuable insights into the motivational and cognitive determinants of stereotyping. The route to stereotype avoidance in these models is quite straightforward: Individuated (i.e., nonstereotypic) evaluations and impressions can be promoted through the allocation of attention to a person's idiosyncratic constellation of attributes and behaviors. However, various other approaches can be employed in the service of this goal. One favored tactic, for example, involves trying to expunge stereotypic thoughts and recollections from mind, thereby denying them the possibility of free behavioral expression. This mental exorcism is realized through the operation of cognitive inhibition—a process that has recently attracted considerable attention from researchers (e.g., Devine, 1989; Bodenhausen & Macrae, 1998; Wegner, 1994). Of relevance in the present context is the observation that dual-process models of cognitive functioning provide valuable insight into how inhibitory mechanisms can moderate the expression versus repression of social stereotypes.

It is only perhaps within the last 10 years or so that researchers have explicitly explored how inhibitory mechanisms can inform our understanding of aspects of the stereotyping process (see Bodenhausen & Macrae, 1996, 1998; Bodenhausen, Macrae, & Milne, 1998; Devine, 1989; Dijksterhuis & van Knippenberg, 1996; Macrae, Bodenhausen, Milne, & Ford, 1997; Macrae, Bodenhausen, Milne, & Jetten, 1994; Macrae, Bodenhausen, Milne, & Wheeler, 1996; Monteith, 1993). The impetus for much of this work was undoubtedly Devine's (1989) seminal article on the cognitive dynamics of prejudice. Devine's theoretical argument is an important one, implicating as it does the dual operation of automatic and controlled processes in stereotyping (see Devine & Monteith, Chapter 17, this volume). Following the (automatic) activation of stereotypic material in memory, egalitarian perceivers are believed to sanitize their outputs (e.g., behaviors, utterances) by inhibiting the unwanted contents of consciousness. That is, to prevent stereotypic thoughts from turning into prejudiced actions, low-prejudice perceivers are believed to remove unwanted items from mind through the operation of inhibitory processes (i.e., mind control). Once these items are banished from consciousness,

it is assumed that they can no longer exert an untoward influence on behavioral outputs (but see Macrae, Bodenhausen, et al., 1994; Macrae et al., 1996). For Devine (1989), then, prejudice can best be understood by analyzing the dual components of the stereotyping process: namely, the *automatic* activation and *controlled* inhibition of stereotypic thoughts (see also Monteith, 1993).

Inhibiting stereotypic thoughts, feelings, and reactions is quite a distinct goal from individuating a social target. To explain exactly how perceivers can attain the goal of mind control, it is relatively commonplace for researchers to propose dual-process models of cognitive functioning. One of the most prominent and influential examples of this type, for instance, is Wegner's (1994) "ironic-process" theory of mental control. According to this model, mind control is realized through the simultaneous operation of two cognitive processes: an *automatic* (ironic) monitoring process; and a *controlled* operating process. Following the onset of a conscious intention not to think about a particular topic (e.g., the belief that blondes are dumb), an automatic monitoring process is believed to scan consciousness, searching for any failures or lapses in mental control. When such a failure is detected, a controlled operating process (i.e., cognitive inhibition) is then instigated, the task of which is to remove the errant thought from mind. Mental tranquility is restored when the unwanted item (e.g., "Blondes are dumb") is replaced by a more palatable alternative (e.g., "That apple pie smells nice").

Closer inspection of Wegner's (1994) model reveals how the availability of attentional resources modulates the efficiency of the dual processes that drive mind control. Whereas the ironic monitoring process runs in a largely effortless manner, the controlled operating process, in contrast, makes more notable demands on perceivers' attentional resources. In other words, whereas detecting failures in mental control is a relatively easy affair, doing something about them is a considerably more troublesome task. When attentional resources are in plentiful supply, there is little to worry about. Unwanted items are replaced in consciousness by suitable distractors, and everything in the (mental) garden is rosy. However, when attentional re-

sources are depleted, the process of mental control is seriously impaired. Indeed, under these conditions, thought control can backfire, prompting the rather paradoxical effect that perceivers become preoccupied with the very items they are trying to dismiss. Rebound effects of this sort have been documented for an impressive variety of mental contents, ranging from lost loves to obsessive ruminations to thoughts of white bears (see Wegner, 1994). Importantly, comparable effects have also emerged in person perception, with stereotypic thoughts reappearing in mind following the cessation of a period of intentional mind control (Macrae, Bodenhausen, et al., 1994; Macrae et al., 1996).

The utility of dual-process models of cognitive functioning resides in their ability to identify factors that moderate the expression of social stereotypes, including factors regulating stereotype suppression. Whether perceivers subvert stereotyping by focusing on a target's unique constellation of attributes (i.e., individuation), or by suppressing stereotypic thoughts and recollections in consciousness, attentional resources are required in each case to fuel the relevant cognitive routines. Avoiding the expression of stereotypes, it would seem, is an attentional-demanding affair.

If stereotyping can be circumvented via either individuation or suppression, when do perceivers implement these competing processing strategies? One potentially important factor is the strength of an activated stereotype. When an activated stereotype is strong (e.g., "skinhead"), and the associated categorical information (e.g., "dangerous") is deemed to be highly diagnostic, it may be futile to try to prevent stereotyping by focusing attention on a target's personalized attributes (e.g., "This skinhead has a pet canary"). Under these circumstances, the insistent stereotype-based material in memory may prevail and continue to color one's target-based judgments. To avoid stereotyping, a better strategy may be to attempt to remove the unwanted stereotypic material from mind through the process of intentional suppression, or to adjust one's judgments and reactions directly, in order to correct for stereotypic biases (e.g., Wilson & Brekke, 1994). For weak stereotypes (e.g., "golfers"), however, the opposite

ciates (e.g., "wears tartan pants") are unlikely to have an overwhelming influence on judgmental outcomes, one's attentional resources may be spent more profitably in inspecting the target's unique attributes and qualities (e.g., "This golfer plays the banjo"). How attention is cognitively deployed, then, may be influenced by the strength of an activated stereotype and the judgmental potency of the available associates. For strong stereotypes, suppression may be the antidote to categorical thinking; for weak stereotypes, discrimination may be prevented by instead focusing attention on a target's personalized behaviors. Although speculative, these predictions can readily be derived from extant dual-process models of person perception, thereby revealing the empirical value of these approaches. Having provided a theoretical framework for informing our understanding of when people stereotype others, we believe that these models can also furnish insight into the equally important question of how stereotyping can be avoided. One task for future research on person perception will be to explore the largely uncharted waters that surround this topic.

CONCLUSIONS

The dual-process approach to stereotyping in impression formation and social judgment has yielded systematic insights into the fundamental nature of these phenomena, especially regarding the moderating variables that determine whether or not stereotypes exert a noteworthy influence on our reactions to others. The idea at the heart of the dual-process approaches—namely, that stereotyping represents a form of social information processing that is conceptually distinct from and inherently less demanding than individuation—has been the target of interesting recent theoretical challenges. On balance, however, we regard these challenges as less than convincing. We have attempted to document the success of the dual-process approaches in generating a rich set of predictions (and supporting evidence) concerning the determinants of stereotyping by reference to a parsimonious set of underlying assumptions. This body of evidence strongly sug-

portant insights to offer us in our attempts to understand the nature of stereotyping and stereotype-based discrimination.

The value of this analysis is also enhanced by recognizing that its underlying principles cohere with theoretical models designed to address a disparate variety of phenomena in other domains of social psychology. Indeed, the present volume is a testament to the fruitfulness of dual-process models and to the core insights that they share in attempting to understand the cognitive underpinnings of social behavior.

REFERENCES

- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Andersen, S. M., & Klatzky, R. L. (1987). Traits and social stereotypes: Levels of categorization in person perception. *Journal of Personality and Social Psychology*, 53, 235-246.
- Andersen, S. M., Klatzky, R. L., & Murray, J. (1990). Traits and social stereotypes: Efficiency differences in social information processing. *Journal of Personality and Social Psychology*, 59, 192-201.
- Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, 41, 303-314.
- Asch, S. E., & Zukier, H. (1984). Thinking about persons. *Journal of Personality and Social Psychology*, 46, 1230-1240.
- Banaji, M. R., & Greenwald, A. G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology*, 68, 181-198.
- Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition: Vol. 10. The automaticity of everyday life* (pp. 1-61). Mahwah, NJ: Erlbaum.
- Baron, R. S., Inman, M. L., Kao, C. F., & Logan, H. (1992). Negative emotion and superficial social processing. *Motivation and Emotion*, 16, 323-346.
- Beckett, N. E., & Park, B. (1995). Use of category versus individuating information: Making base rates salient. *Personality and Social Psychology Bulletin*, 21, 21-31.
- Biernat, M., & Manis, M. (1994). Shifting standards and stereotype-based judgments. *Journal of Personality and Social Psychology*, 66, 5-20.
- Bless, H., Schwarz, N., & Kimmelmeier, M. (1996). Mood and stereotyping: Affective states and the use of general knowledge structures. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 7, pp. 63-93). Chichester, England: Wiley.
- Bless, H., Schwarz, N., & Wieland, R. (1996). Mood and the impact of category membership and individuating information. *European Journal of Social Psychology*, 26, 935-960.
- Bodenhausen, G. V. (1988). Stereotypic biases in social decision making and memory: Testing process models of stereotype use. *Journal of Personality and Social Psychology*, 55, 726-737.
- Bodenhausen, G. V. (1990). Stereotypes as judgmental heuristics: Evidence of circadian variations in discrimination. *Psychological Science*, 1, 319-322.
- Bodenhausen, G. V. (1992). Information-processing functions of generic knowledge structures and their role in context effects in social judgment. In N. Schwarz & S. Sudman (Eds.), *Context effects in social and psychological research* (pp. 267-277). New York: Springer-Verlag.
- Bodenhausen, G. V. (1993). Emotion, arousal, and stereotypic judgments: A heuristic model of affect and stereotyping. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 13-37). San Diego, CA: Academic Press.
- Bodenhausen, G. V., Kramer, G. P., & Süsser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology*, 66, 621-632.
- Bodenhausen, G. V., & Lichtenstein, M. (1987). Social stereotypes and information-processing strategies: The impact of task complexity. *Journal of Personality and Social Psychology*, 52, 871-880.
- Bodenhausen, G. V., & Macrae, C. N. (1996). The self-regulation of intergroup perception: Mechanisms and consequences of stereotype suppression. In C. N. Macrae, C. Stangor, & M. Hewstone (Eds.), *Stereotypes and stereotyping* (pp. 227-253). New York: Guilford Press.
- Bodenhausen, G. V., & Macrae, C. N. (1998). Stereotype activation and inhibition. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition: Vol. 11. Stereotype activation and inhibition* (pp. 1-52). Mahwah, NJ: Erlbaum.
- Bodenhausen, G. V., Macrae, C. N., & Milne, A. B. (1998). Disregarding social stereotypes: Implications for judgment, memory, and behavior. In J. M. Golding & C. M. MacLeod (Eds.), *Directed forgetting: Interdisciplinary perspectives* (pp. 349-368). Mahwah, NJ: Erlbaum.
- Bodenhausen, G. V., Sheppard, L., & Kramer, G. P. (1994). Negative affect and social judgment: The differential impact of anger and sadness. *European Journal of Social Psychology*, 24, 45-62.
- Bodenhausen, G. V., & Wyer, R. S., Jr. (1985). Effects of stereotypes on decision making and information-processing strategies. *Journal of Personality and Social Psychology*, 48, 267-282.
- Brewer, M. B. (1988). A dual-process model of impression formation. In T. K. Srull & R. S. Wyer, Jr. (Eds.), *Advances in social cognition: Vol. 1. A dual-process model of impression formation* (pp. 1-36). Hillsdale, NJ: Erlbaum.
- Broadbent, D. E., Broadbent, M. H. P., & Jones, J. L. (1989). Time of day as an instrument for the analysis of attention. *European Journal of Cognitive Psychology*, 1, 69-94.
- Brown, R. (1986). *Social psychology* (2nd ed.). New York: Free Press.
- Bruner, J. (1951). Personality dynamics and the process of perceiving. In R. R. Blake & G. V. Ramsey (Eds.), *Perception: An approach to personality* (pp. 121-147). New York: Ronald Press.
- Bruner, J. (1957). On perceptual readiness. *Psychological Review*, 64, 123-152.
- Carlston, D. E., & Skowronski, J. J. (1994). Savings in relearning of trait information as evidence for sponta-

- neous inference generation. *Journal of Personality and Social Psychology*, 66, 840-856.
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, 39, 752-766.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario Symposium* (Vol. 5, pp. 3-39). Hillsdale, NJ: Erlbaum.
- Chaiken, S., Giner-Sorolla, R., & Chen, S. (1996). Beyond accuracy: Defense and impression motives in heuristic and systematic information processing. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 553-578). New York: Guilford Press.
- Chaiken, S., Liberman, A., & Eagly, A. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212-252). New York: Guilford Press.
- Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task performance on attitude judgment. *Journal of Personality and Social Psychology*, 66, 460-473.
- Crocker, J., Hannah, D. B., & Weber, R. (1983). Person memory and causal attributions. *Journal of Personality and Social Psychology*, 44, 55-66.
- Darley, J. M., & Gross, P. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, 44, 20-33.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56, 5-18.
- Dijksterhuis, A., & van Knippenberg, A. (1996). The knife that cuts both ways: Facilitated and inhibited access to traits as a result of stereotype activation. *Journal of Experimental Social Psychology*, 32, 271-288.
- Duncan, B. L. (1976). Differential social perception and attribution of intergroup violence: Testing the lower limits of stereotyping of blacks. *Journal of Personality and Social Psychology*, 34, 590-598.
- Dunning, D., & Sherman, D. A. (1997). Stereotypes and tacit inference. *Journal of Personality and Social Psychology*, 73, 459-471.
- Edwards, J. A., & Weary, G. (1993). Depression and the impression-formation continuum: Piecemeal processing despite the availability of category information. *Journal of Personality and Social Psychology*, 64, 636-645.
- Erber, R., & Fiske, S. T. (1984). Outcome dependency and attention to inconsistent information. *Journal of Personality and Social Psychology*, 47, 709-726.
- Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 75-109). San Diego, CA: Academic Press.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, 48, 621-628.
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed.). New York: Guilford Press.
- Fiske, S. T., & Dépret, E. (1996). Control, interdependence, and power: Understanding social cognition in its social context. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 7, pp. 31-61). Chichester, England: Wiley.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 1-74). San Diego, CA: Academic Press.
- Fiske, S. T., Neuberg, S. L., Beattie, A., & Milberg, S. (1987). Category-based and attribute-based reactions to others: Some informational conditions of stereotyping and individuating processes. *Journal of Experimental Social Psychology*, 23, 399-427.
- Fiske, S. T., & Taylor, S. E. (1984). *Social cognition* (1st ed.). New York: McGraw-Hill.
- Gilbert, D. T., & Hixon, J. G. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology*, 60, 509-517.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, 117, 21-30.
- Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology*, 54, 733-740.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4-27.
- Grice, H. P. (1975). Logic in conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics* (Vol. 3, pp. 41-58). New York: Academic Press.
- Hamilton, D. L., & Sherman, J. W. (1994). Stereotypes. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. 2, pp. 1-68). Hillsdale, NJ: Erlbaum.
- Hampson, S. E., John, O. P., & Goldberg, L. R. (1986). Category breadth and hierarchical structure in personality: Studies of asymmetries in judgments of trait implications. *Journal of Personality and Social Psychology*, 51, 37-54.
- 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.
- Hilton, J. L., & Fein, S. (1989). The role of typical diagnosticity in stereotype-based judgments. *Journal of Personality and Social Psychology*, 57, 201-211.
- Holyoak, K. J., & Thagard, P. (1989). Analogical mapping by constraint satisfaction. *Cognitive Science*, 13, 295-355.
- John, O. P., Hampson, S. E., & Goldberg, L. R. (1991). The basic level in personality-trait hierarchies: Studies of trait use and accessibility in different contexts. *Journal of Personality and Social Psychology*, 60, 348-361.
- Johnston, L. C., & Macrae, C. N. (1994). Changing social stereotypes: The case of the information seeker. *European Journal of Social Psychology*, 24, 581-592.
- Kahneman, D., Slovic, P., & Tversky, A. (Eds.). (1982). *Judgment under uncertainty: Heuristics and biases*. Cambridge, England: Cambridge University Press.
- Kim, H.-S., & Baron, R. S. (1988). Exercise and illusory correlation: Does arousal heighten stereotypic process-

- ing? *Journal of Experimental Social Psychology*, 24, 366-380.
- Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review*, 95, 163-182.
- Klatzky, R. L., & Andersen, S. M. (1988). Category-specificity effects in social typing and personalization. In T. K. Srull & R. S. Wyer, Jr. (Eds.), *Advances in social cognition: Vol. 1. A dual-process model of impression formation* (pp. 91-101). Hillsdale, NJ: Erlbaum.
- Kobryniewicz, D., & Biernat, M. (1998). Considering correctness, contrast, and categorization in stereotyping phenomena. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition: Vol. 11. Stereotype activation and inhibition* (pp. 109-126). Mahwah, NJ: Erlbaum.
- Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay-inferences: Effects on impression primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology*, 19, 448-468.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, 103, 263-283.
- Kunda, Z., & Sherman-Williams, B. (1993). Stereotypes and the construal of individuating information. *Personality and Social Psychology Bulletin*, 19, 90-99.
- Kunda, Z., Sinclair, L., & Griffin, D. (1997). Equal ratings but separate meanings: Stereotypes and the construal of traits. *Journal of Personality and Social Psychology*, 72, 720-734.
- Kunda, Z., & Thagard, P. (1996). Forming impressions from stereotypes, traits, and behaviors: A parallel-constraint-satisfaction theory. *Psychological Review*, 103, 284-308.
- Lambert, A. J., Khan, S., Lickel, B., & Fricke, K. (1997). Mood and the correction of positive versus negative stereotypes. *Journal of Personality and Social Psychology*, 72, 1002-1016.
- Langer, E., Bashner, R., & Chanowitz, B. (1985). Decreasing prejudice by increasing discrimination. *Journal of Personality and Social Psychology*, 49, 113-120.
- Leyens, J.-P., Yzerbyt, V., & Schadron, G. (1994). *Stereotypes and social cognition*. London: Sage.
- Linville, P., & Jones, E. E. (1980). Polarized appraisals of out-group members. *Journal of Personality and Social Psychology*, 38, 689-703.
- Locksley, A., Borgida, E., Brekke, N., & Hepburn, C. (1980). Sex stereotypes and social judgment. *Journal of Personality and Social Psychology*, 39, 821-831.
- Locksley, A., Hepburn, C., & Ortiz, V. (1982). Social stereotypes and judgments of individuals: An instance of the base-rate fallacy. *Journal of Experimental Social Psychology*, 18, 23-42.
- Lupfer, M. B., Clark, L. F., & Hutcherson, H. W. (1990). Impact of context on spontaneous trait and situational attributions. *Journal of Personality and Social Psychology*, 58, 239-249.
- Maass, A., Milesi, A., Zabbini, S., & Stahlberg, D. (1995). Linguistic intergroup bias: Differential expectancies or in-group protection? *Journal of Personality and Social Psychology*, 68, 116-126.
- Mackie, D. M., & Worth, L. T. (1989). Processing deficits and the mediation of positive affect in persuasion. *Journal of Personality and Social Psychology*, 57, 27-40.
- Macrae, C. N., Bodenhausen, G. V., & Milne, A. B. (1995). The dissection of selection in person perception: Inhibitory processes in social stereotyping. *Journal of Personality and Social Psychology*, 69, 397-407.
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Ford, R. (1997). On the regulation of recollection: The intentional forgetting of stereotypical memories. *Journal of Personality and Social Psychology*, 72, 709-719.
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology*, 67, 808-817.
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Wheeler, V. (1996). On resisting the temptation for simplification: Counterintentional consequences of stereotype suppression on social memory. *Social Cognition*, 14, 1-20.
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., Thorn, T. M. J., & Castelli, L. (1997). On the activation of social stereotypes: The moderating role of processing objectives. *Journal of Experimental Social Psychology*, 33, 471-489.
- Macrae, C. N., Hewstone, M., & Griffiths, R. J. (1993). Processing load and memory for stereotype-based information. *European Journal of Social Psychology*, 23, 77-87.
- Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology*, 66, 37-47.
- May, C. P., Hasher, L., & Stoltzfus, E. R. (1993). Optimal time of day and the magnitude of age differences in memory. *Psychological Science*, 4, 326-330.
- McCauley, C. (1988). The content of awareness and top-down versus bottom-up processes. In T. K. Srull & R. S. Wyer, Jr. (Eds.), *Advances in social cognition: Vol. 1. A dual process model of impression formation* (pp. 111-118). Hillsdale, NJ: Erlbaum.
- McClelland, J. L., & Rumelhart, D. E. (1981). An interactive activation model of context effects in letter perception: Part I. An account of basic findings. *Psychological Review*, 88, 375-407.
- Medin, D. L. (1988). Social categorization: Structures, processes, and purposes. In T. K. Srull & R. S. Wyer, Jr. (Eds.), *Advances in social cognition: Vol. 1. A dual-process model of impression formation* (pp. 119-126). Hillsdale, NJ: Erlbaum.
- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63, 81-97.
- Monteith, M. J. (1993). Self-regulation of prejudiced responses: Implications for progress in prejudice-reduction efforts. *Journal of Personality and Social Psychology*, 65, 469-485.
- Murphy, G. L., & Medin, D. L. (1985). The role of theories in conceptual coherence. *Psychological Review*, 92, 289-316.
- Neisser, U. (1976). *Cognition and reality: Principles and implications of cognitive psychology*. San Francisco: W. H. Freeman.
- Nelson, T. E., Acker, M., & Manis, M. (1996). Irrepressible stereotypes. *Journal of Experimental Social Psychology*, 32, 13-38.

- Newell, A., & Simon, H. A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.
- Newman, L. S. (1991). Why are traits inferred spontaneously?: A developmental approach. *Social Cognition*, 9, 221-253.
- Nisbett, R. E., Zukier, H., & Lemley, R. E. (1981). The dilution effect: Nondiagnostic information weakens the implications of diagnostic information. *Cognitive Psychology*, 13, 248-277.
- Oakes, P., Haslam, S. A., & Turner, J. C. (1994). *Stereotyping and social reality*. Oxford: Blackwell.
- Oakes, P., & Turner, J. C. (1990). Is limited information processing capacity the cause of social stereotyping? In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 1, pp. 111-135). Chichester, England: Wiley.
- Osborne, R. E., & Gilbert, D. T. (1992). The preoccupational hazards of social life. *Journal of Personality and Social Psychology*, 62, 219-228.
- Palmer, S. E. (1975). Visual perception and world knowledge. In D. A. Norman, D. E. Rumelhart, & the LNR Research Group (Eds.), *Explorations in cognition*. San Francisco: Freeman.
- Park, B., & Hastie, R. (1987). Perception of variability in category development: Instance- versus abstraction-based stereotypes. *Journal of Personality and Social Psychology*, 53, 621-635.
- Pendry, L. F., & Macrae, C. N. (1994). Stereotypes and mental life: The case of the motivated but thwarted tactician. *Journal of Experimental Social Psychology*, 30, 303-325.
- Pendry, L. F., & Macrae, C. N. (1996). What the disinterested perceiver overlooks: Goal-directed social categorization. *Personality and Social Psychology Bulletin*, 22, 249-256.
- Petty, R. E., & Cacioppo, J. T. (1979). Issue involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, 37, 1915-1926.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123-205). Orlando, FL: Academic Press.
- Pratto, F., & Bargh, J. A. (1991). Stereotyping based on apparently individuating information: Trait and global components of sex stereotypes under attention overload. *Journal of Experimental Social Psychology*, 27, 26-47.
- Quattrone, G. A., & Jones, E. E. (1980). The perception of variability within in-groups and out-groups: Implications for the law of small numbers. *Journal of Personality and Social Psychology*, 38, 141-152.
- Revelle, W. (1993). Individual differences in personality and motivation: "Non-cognitive" determinants of cognitive performance. In A. Baddeley & L. Weiskrantz (Eds.), *Attention: Selection, awareness, and control* (pp. 346-373). Oxford: Oxford University Press.
- Rothbart, M., Sriram, N., & Davis-Stitt, C. (1996). The retrieval of typical and atypical category members. *Journal of Experimental Social Psychology*, 32, 309-336.
- Rothbart, M., & Taylor, M. (1992). Category labels and social reality: Do we view social categories as natural kinds? In G. R. Semin & K. Fiedler (Eds.), *Language, interaction, and social cognition* (pp. 11-36). London: Sage.
- Ruscher, J. B., & Fiske, S. T. (1990). Interpersonal competition can cause individuating impression formation. *Journal of Personality and Social Psychology*, 58, 832-842.
- Sagar, H. A., & Schofield, J. W. (1980). Racial and behavioral cues in black and white children's perceptions of ambiguously aggressive acts. *Journal of Personality and Social Psychology*, 39, 590-598.
- Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527-561). New York: Guilford Press.
- Schwarz, N. (1994). Judgment in a social context: Biases, shortcomings, and the logic of conversation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 26, pp. 123-162). San Diego, CA: Academic Press.
- Sherman, J. W. (1996). Development and mental representation of stereotypes. *Journal of Personality and Social Psychology*, 70, 1126-1141.
- Sherman, J. W., Lee, A. Y., Bessenoff, G. R., & Frost, L. A. (1998). Stereotype efficiency reconsidered: Encoding flexibility under cognitive load. *Journal of Personality and Social Psychology*, 75, 589-606.
- Simon, H. A. (1957). *Models of man*. New York: Garland Press.
- Simon, H. A. (1994). The bottleneck of attention: Connecting thought with motivation. In W. D. Spaulding (Ed.), *Nebraska Symposium on motivation: Vol. 41. Integrative views of motivation, cognition, and emotion* (pp. 1-21). Lincoln: University of Nebraska Press.
- Smith, E. R., & Zárate, M. A. (1992). Exemplar-based model of social judgment. *Psychological Review*, 99, 3-21.
- Snyder, M., & Cantor, N. (1979). Testing hypotheses about other people: The use of historical knowledge. *Journal of Experimental Social Psychology*, 15, 330-342.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41(3), 157-175.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago: Nelson-Hall.
- Tetlock, P. E. (1992). The impact of accountability on judgment and choice: Toward a social contingency model. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 331-376). San Diego, CA: Academic Press.
- Trope, Y., & Alfieri, T. (1997). Effortfulness and flexibility of dispositional inference processes. *Journal of Personality and Social Psychology*, 73, 662-674.
- Trope, Y., & Thompson, E. P. (1997). Looking for truth in all the wrong places: Asymmetric search of individuating information about stereotyped group members. *Journal of Personality and Social Psychology*, 73, 229-241.
- Turner, J. C., Hogg, M., Oakes, P. J., Reicher, S., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell.
- Uleman, J. S., Hon, A., Roman, R. J., & Moskowitz, G. B. (1996). On-line evidence for spontaneous trait in-

- ferences at encoding. *Personality and Social Psychology Bulletin*, 22, 377-394.
- van Knippenberg, A., & Dijksterhuis, A. (1996). A posteriori stereotype activation: The preservation of stereotypes through memory distortion. *Social Cognition*, 14, 21-153.
- Weary, G. (1990). Depression and sensitivity to social information. In B. S. Moore & A. M. Isen (Eds.), *Affect and social behavior* (pp. 207-230). Cambridge, England: Cambridge University Press.
- Weary, G., & Edwards, J. (1994). Social cognition and clinical psychology: Anxiety, depression, and the processing of social information. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed., Vol. 2, pp. 289-338). Hillsdale, NJ: Erlbaum.
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, 101, 34-52.
- Wilder, D. A., & Simon, A. F. (1996). Incidental and integral affect as triggers of stereotyping. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Vol. 3. The interpersonal context* (pp. 397-419). New York: Guilford Press.
- Wilson, T. D., & Brekke, N. (1994). Mental contamination and mental correction: Unwanted influences on judgments and evaluations. *Psychological Bulletin*, 116, 117-142.
- Yates, J. (1985). The content of awareness is a model of the world. *Psychological Review*, 92, 249-284.
- Yzerbyt, V. Y., Rogier, A., & Fiske, S. T. (in press). Social attribution and subjective essentialism: On translating situational constraints into stereotypes. *Personality and Social Psychology Bulletin*.

©1999 The Guilford Press
A Division of Guilford Publications, Inc.
72 Spring Street, New York, NY 10012
<http://www.guilford.com>

All rights reserved

No part of this book may be reproduced, translated, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording, or otherwise, without written permission from the Publisher.

Printed in the United States of America

This book is printed on acid-free paper.

Last digit is print number: 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Dual-process theories in social psychology / edited by Shelly Chaiken,
Yaacov Trope.

p. cm.

Includes bibliographic references and index.

ISBN 1-57230-421-9

1. Social psychology. I. Chaiken, Shelly. II. Trope, Yaacov.

HM291.D76 1999

302—dc21

98-54248

CIP