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Chapter 2

Environments and Unconscious Processes

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Even today, the strongest position in psychology advocating the supremacy of environments in determining behavior remains that of B. F. Skinner. Half a century after the cognitive revolution and a full rejection of Skinner's antimentalism, his bold optimism that human behavior is lawful and determined, that the sources of predictive power lie in the organism's environment, and that identifying them is the only certain path to a technology of behavior is ironically inspirational to a social psychologist working on fundamental questions regarding mental processes. John Bargh is a product of late 20th century social psychology, a field that passed its infancy with fortunate obliviousness of both the antimentalism of behaviorism and the inattention to environments that characterizes the inward-looking stance of modern cognitive psychology. From a historical point of view, it should occasion no surprise that a person born of this tradition need not be burdened by shame or conflict in using a dead, anticognitive philosophy's insistence on the power of environments while speaking with ease about the power of automatic mental processes.

In this target chapter, Bargh describes extensive programs of research on automatic social processes, which when viewed as a collection, offer an impressive view of how these processes operate in everyday social life. Our own position is compatible with the one advocated in the first chapter, and our comments will reaffirm and add to selected issues. Our main concern lies with the need for theories of the

meaning and properties of transient and persisting environments and how they produce their influence on social processes (cognitive, evaluative, and behavioral). We conclude that the research on unconscious social processes reviewed by Bargh not only provides new evidence about social perception, but also addresses deeper questions about human nature. In our view, this research favors a new environmental determinism in understanding the causes of social behavior—one that is necessarily informed by several decades of research on social cognition.

From at least one perspective, the most important discoveries in social psychology are those that show the power of situational forces in determining behavior, with the two shining examples even 30 years later being experiments on obedience to authority (Milgram, 1963) and on bystander nonintervention (Latané & Darley, 1968). These experiments (along with lesser known but equally impressive ones) ought to be recognized as landmarks in the history of science, for in them we have the very first experimental evidence for an unpopular view of human nature. In contrast to the perspective from other fields, and certainly in opposition to lay thinking, these studies provided the first experimental demonstrations that humans do not and more accurately, cannot, choose their actions as freely as they or their observers expect. Rather, forces in the situation, of which they may be little aware, can have a determining influence on their actions, even those actions that have immense consequences for the well-being and survival of themselves and their fellow beings. The view of human nature revealed by these early experiments continues to be a difficult one to endorse, perhaps especially by Western minds, because it suggests that the will to freely choose a course of action may be illusory. Such a view is additionally problematic because it pointedly raises the question of whether reward for benevolent actions or retribution for heinous ones should legitimately be assigned to the actor who performs them.

The profundity of these implications and the staying power of these demonstrations in our textbooks notwithstanding, it is the simple truth that these programs of research did not propagate. After a few years' worth of laboratory and field iterations of each basic finding, they ceased to inspire new work commensurate with their impact or to produce advances on the scale of other theoretical orientations in psychology such as psychoanalysis, behaviorism, or information processing. Why was this the case? Why were such stunning experimental discoveries not the basis of a full-fledged and more influential perspective on social behavior? There are many explanations to offer, but one that the target chapter suggests to us is that these accounts lacked grounding in a theoretical system capable of explaining the mechanisms that link environmental effects to social processes. As Bargh's research exemplifies, the availability of theories and methods to analyze automatic processes offers a way out of some explanatory darkness.

We focus on two issues. First, we discuss the problem of accuracy, or more to the point, inaccuracy in perceiving the sources of influence on judgment and behavior. In particular, when causes are removed in time or space from the effects they produce, namely, when causal action occurs at a distance, the relationship between the two may most naturally lie outside awareness. This point allows a connection to be drawn between many classic findings in social psychology showing inaccuracies

in assigning appropriate causes for behavior and the automatic processes that underlie them. Second, we point out the value of construing the individual's environment in more microscopic terms to include vast numbers of potential causes of thought, feeling, and action that may lie outside conscious awareness. The target chapter offers many elegant examples of this, and we add some from research on the implicit and automatic use of knowledge and feelings about social groups.

PERCEIVING ACTION AT A DISTANCE

Multiple strands of research in social psychology have verified that perceiving the cause of actions as emanating from the actor rather than the environment is a robust human characteristic. This point was not only made in the obedience and helping research mentioned earlier, but more directly by research on the attribution of causality, now commonly referred to as the *fundamental attribution error* (Ross, 1977) or the *correspondence bias* (Jones & Gerard, 1967). We use a physical metaphor here, for it nicely suggests that this bias may be part of a more general human inability to accurately perceive "action at a distance," with the term *action* referring to causal action.

Until Newton's discovery, scientists, like their lay colleagues, incorrectly believed that color resided in the colored object. Even 300 years after this discovery, it is only through formal education and not intuition that we know, for example, that "brownness" is not a "property" of skin and that "brownness" does not "reside in" the skin. Rather, as Newton (1671) reported, "For as sound, in a bell or musical string or other sounding body, is nothing but a trembling motion, and in the air nothing but that motion propagated from the object, ... so colors in the object are nothing but a disposition to reflect this or that sort of ray more copiously than the rest ... " Writing to Oldenburg in 1672, he described with great excitement the experiments showing that light consists of rays of unequal "refrangibility," and concluded, "These things being so, it can be no longer disputed, whether there be colours in the dark, nor whether they be the qualities of the objects we see ... " (p. 179).

We now know that a complex interaction of light as well as properties of the object itself determine color as it is ultimately perceived. The role of the object in "causing" us to perceive color is easy to grasp, whereas genius was needed to discover that light, a source operating at a distance from the perceived object and with no perceivable physical link to the object played the crucial role it did. The perception of the causes of social behavior as residing in the actor arise from a similar underlying inability to see action at a distance. When asked for an explanation of the cause of X's behavior, the response is likely to involve properties of X rather than Y, if Y (an animate or inanimate cause) issues an influence that is physically and psychologically invisible. And just as surely as with optics, a correct interpretation of the causes of behavior must include both properties of the subject (which are intuitively

accessible) and properties of the environment (which are intuitively less accessible). The reason for the relative difficulty of the latter in both cases, optics as well as social perception, is that causes lie in places that are unfamiliar or distant and perhaps not easily available to conscious cognition.

Examining the operation of automatic processes on social behavior takes the bull by its horns. There is clear recognition in these newer accounts of social behavior that sources of influence that may not be within the grasp of the actor may determine perceptions and beliefs, preferences, and actions. Although this idea has been a necessary part of much social psychological research, it is only with the explicit study of processes that lie outside conscious awareness and control that the full range of their impact can be determined. The unique emphasis that Bargh offers in the early section of the target chapter is that such sources of influence lie in the environment of the actor. To enable a fuller account of the cycle of interaction between environment and mind, we must identify causative properties of the social environment, generate meaningful taxonomies of them, and test the nature of their influences on social thought, feeling and behavior. Such an approach allows more fruitful encounters with sources of causal action that lie at a distance from the effects they produce.

MICROENVIRONMENTS AND MICROBEHAVIORS

All psychological activity occurs in some space, and we follow an old tradition in broadly referring to that space and its contents as *environment*, although our focus will necessarily be restricted to socially meaningful ones. We introduce the term *microenvironments* to capture a class of environmental influences that are pervasive and influential even though they are not easily perceived or comprehended because of their "smallness," and the term *microbehaviors* to capture the responses they evoke. Attention to these features is new to social psychology, but is well illustrated in Bargh's focus on automatic social processes.

Yet again, an analogy from the physical sciences may be handy. We know that knowledge of the physical world changed dramatically with the transition from examining gross structures available to the naked eye to particle level structures unavailable to the naked eye. Likewise, there lie potential layers of social psychological structures that may only be available by peering at levels that are below those of consciously accessible cognition. Shifts in the level of analysis in any field are a complex result of advances in theory and the availability of methods and tools (for example, the invention of the electron microscope). The shift in social psychology occurred most dramatically, as it did in other fields, through the use of (micro) computers in research, which make it possible to create controlled, high-speed representations of the environment and obtain stable, high-speed responses to the environment. Entire layers of behavior previously unavailable and unrecognized as even existing are becoming tractable and reliably reproducible, especially those requiring stimulus presentation outside conscious awareness and measurement

without the respondent's awareness or control.[1] Investigations such as the ones captured by Bargh's research show the gains resulting when attending to the microscopic features of the environment and measuring its influence at the level of multiple single judgments or microbehaviors.

The implications of such a focus are not trivial. We use a comment made by a colleague, a developmental psychologist, to illustrate the point. Pointing to his 2-year-old daughter's preference for feminine objects such as a purse, he expressed surprise that she liked feminine things even though her parents had never encouraged such choices. The example was generated by him to convey the idea that such choices and preferences cannot therefore be said to be learned or acquired, but rather rooted in a more inherent preference of females for feminine objects and conversely of males for masculine objects. The colleague is a fellow of respectable intelligence, so the question is really one for us social psychologists: Why have we failed to communicate a theory of the ways in which environments produce their influence so that a contemporary psychologist, let alone a layperson, can be properly informed about the mechanisms by which environments can influence behavior?

We think that for too long social psychology remained at the level of gross descriptions of environments. Such a level is not inappropriate, and it gave us many of the findings of which we are proud, such as the effects of direct threat by authority figures, the influence of the sheer numbers of others, and so on. It is simply that environments at levels that are far too microscopic to be visible can and do influence behavior and being unaware of them can lead to causal errors of the sort captured by our colleague's statement. Attention to microenvironments means attending to the subtle and ongoing influences that shape preferences and desires, knowledge and beliefs, motives toward or away from other social objects. Their influences, can be powerful because they are not available to conscious awareness. The lack of access to conscious awareness can be the basis of faulty theories of self and others. The remarkable findings in social cognition over the past 20 years have revealed with much greater explanatory force than previously available the manner in which errors in social perception not only occur, but are protected from correction. If the influence of microenvironments is not detected, explanations for the actual cause may proceed unhindered. As experiments by Lewicki and Hill (1987) showed, learning the association between a physical feature such as the shape of a face and a social attribute can occur with a single exposure and without awareness, show generalization to other similarly structured faces, and reveal incorrect explanations on the part of subjects regarding the cause of their judgment.

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[1]Although new technologies allow such processes to be captured and recorded in an unprecedented manner, we offer two caveats. First, the study of automatic social processes, as Bargh describes, has several facets, some of which are best captured by the type of high-speed presentation and data collection available through computerized techniques. However, other aspects of unconscious social behavior, ones we referred to as *implicit social cognition* (Greenwald & Banaji, 1995) can be studied in a variety of ways, not the least of which are simple paper and pencil measures, nonverbal physiological and behavioral measures, and so on. Second, reducing phenomena from one level of analysis to a lower level is not a mark of preference for the lower level. Rather, the assumption is that understandings across levels should be logically consistent.

Social psychologists are not alone in having ignored microenvironments. In other areas of psychology, similar gross characterizations of environment abound. The best example is perhaps the continuing assumption that environments are more similar for children sharing the same family than those that are not, and this thinking has been the basis of a large and well-established literature on intelligence in which children with varying genetic concordance within the same family are compared with children raised in different families. The notion that two individuals may share the same gross environment (e.g., family) but not the same microenvironments (e.g., variations in treatment within family), and that similarity in such microenvironments may be a powerful predictor of behavior remains a foreign notion. However, the thesis and evidence in the target chapter show just how microenvironments can provide levels of analysis that were previously denied and a level of prediction that may eventually be superior. Here, we are in full agreement with Bargh's optimism about the greater potential predictive power offered by understanding environments and situations. We add that such evidence will emerge from studying automatic social processes because these processes allow examination of microenvironments and microbehaviors. There is some resistance to this idea, even among those who are quick to acknowledge the importance of environmental triggers more generally. For example, Jones (1990) wavered in his conviction regarding the influence of what we would call microenvironments: "Perhaps it is the case that such hidden determinants are actually quite rare, that most of the time our actions follow directly from our perceptions of the situation" (p. 117).

ACTION AT A DISTANCE IN SOCIAL MICROENVIRONMENTS: EXAMPLES FROM STEREOTYPING AND PREJUDICE

In the context of Bargh's work on the automaticity of everyday life, there are numerous reasons to focus attention on the phenomena of stereotyping and prejudice. First, and most self-servingly, they are useful illustrations of the notion of action at a distance, introduced earlier to capture the difficulty in perceiving causes that are physically and psychologically removed from their effects. Furthermore, there is special relevance of stereotyping and prejudice to the automaticity of everyday life. We assume that the title of the target chapter was not an accidental variation of Freud's (1901/1965) book, The Psychopathology of Everyday Life. Freud's intention in that book was to extend the principles of psychoanalysis from rare forms of psychopathology to everyday ones, and the focus on stereotyping and prejudice provides a similar extension in modern social psychology. Such beliefs and attitudes are no longer believed to be present merely in a special class of individuals who consciously affirm stereotypes and prejudices, but in the everyday actions, beliefs, and preferences of ordinary people. Finally, a focus on stereotyping and prejudice provides a way to look at the consequences of automatic social perception in a domain that has implications for interpersonal and intergroup relations, a social problem confronting every society.

People are universally influenced by sociocultural norms that engender stereotyping of and prejudice toward members of social groups. Often, such norms operate invisibly, partly because causal action occurs at a distance and because the triggers may be socially microscopic, shaping social cognition without awareness and acknowledgment. Social knowledge structures form through the operation of perfectly ordinary processes of attention, perception, and memory, and there is much research that we do not review showing the contents of stereotypes and prejudices and the processes by which they operate. From our own recent research and related work of others, a new understanding of the role of automatic processes in stereotyping and prejudice has emerged. Here, we discuss a few of the studies that were not considered in the target article to highlight their implications for the automaticity of everyday life.

To illustrate the automaticity of social perception and beliefs, Bargh mentions research on stereotyping, focusing heavily on Devine's (1989) experiments on automatic stereotyping and its relation to controlled expressions of prejudice. Although this work is influential and relevant, it might better serve as a point of departure for discussions of implicit and automatic stereotyping.[2] There has been considerable research on automatic and implicit stereotyping and prejudice since 1989 that serves to both elucidate and complicate the issues.

We present selective research in three sections to illustrate (a) general demonstrations of implicit and automatic stereotyping and prejudice, (b) qualifications of implicit and automatic stereotyping and prejudice, and (c) dissociations between explicit and implicit or automatic and controlled stereotyping and prejudice.

Demonstrations of Implicit–Automatic Stereotyping and Prejudice

Several demonstrations of the automatic activation and application of beliefs and attitudes about social groups have appeared in recent years that convincingly establish the existence of automaticity in this domain of everyday life. Banaji and Greenwald (1995) showed that social category (gender) is implicitly used in judgments of fame, such that familiar male names are more likely judged to be famous than equally familiar female names. This research went further in locating the source of the implicit bias in the strictness of the criterion that subjects used in judgment—for equally familiarized male and female names, subjects set a lower criterion for judging male than female fame. Banaji, Hardin, and Rothman (1993) likewise showed that prior exposure to stereotype content (sentences about depend-

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[2]There are many nuances in terminology that serve both to clarify and complicate the processes that were referred to as conscious–unconscious, direct–indirect, explicit–implicit, and controlled–automatic. We choose to use the label implicit to refer to research whose main purpose is to understand effects that are produced when the source of influence on behavior lies outside subjects' conscious awareness, and may only occur if the cause is thus hidden from awareness. We choose to use the label automatic to refer to those effects that more naturally fall into Bargh's category of responses over which the subject may have little control (even if there is awareness regarding the source of influence on behavior).

ence or aggressiveness) moderated the well-known category accessibility effect such that only targets whose social category fit the previously activated stereotype (i.e., female targets in the case of dependence priming and male targets in the case of aggressiveness priming) were judged more harshly.

What is remarkable is the smallness of the familiarizing experience an environment must offer (in this case, passing exposure with a name or stereotype knowledge) to show an effect on judgment. Such findings give support to Bargh's claim in the title of the target chapter that automaticity is a pervasive feature of everyday life, and is consistent with proposals made by those who study unconscious forms of memory regarding the pervasiveness of implicit memory (Jacoby & Kelley, 1987). Additionally, studies of this type show the problem with perceiving action at a distance. We continue with the appropriation of Skinner (1971) to point out the subtle power of environments:

> ... the role of the environment is by no means clear. The history of the theory of evolution illustrates the problem. Before the nineteenth century, the environment was thought of simply as a passive setting in which many different kinds of organisms were born, reproduced themselves, and died. No one saw that the environment was responsible for the fact that there were many different kinds (and that fact, significantly enough, was attributed to a creative Mind). The trouble was that the environment acts in an inconspicuous way: it does not push or pull, it selects. For thousands of years in the history of human thought the process of natural selection went unseen in spite of its extraordinary importance. When it was eventually discovered, it became, of course, the key to evolutionary theory.

> The effect of environment on behavior remained obscure for an even longer time. We can see what organisms do to the world around them, as they take from it what they need and ward off its dangers, but it is much harder to see what the world does to them. (p. 14)

Implicit stereotyping effects of the sort described fall into the category labeled by Bargh as postconscious. Such effects, he says, "depend on more than the mere presentation of environmental objects or events ... postconsciously automatic processes do require recent use or activation and do not occur without it." (chap. 1, p. 3). However, research also supports Bargh's main focus of interest in the target chapter, namely preconscious automatic processes. This form of automaticity "is completely unconditional in terms of a prepared or receptively tuned cognitive state" (p. 3). Early work by Gaertner and McLaughlin (1983) and Dovidio, Evans, and Tyler (1986) set the stage for later studies that more conclusively demonstrated the automatic activation of social category knowledge in information whose primary meaning may and more importantly, may not denote the social category. Thus, Banaji and Hardin (1996) showed that words like mother and father, which denote gender, but also words like nurse and mechanic, which connote gender, facilitate the subsequent speeded judgment of gender congruent male and female pronouns. Blair and Banaji (1996a) further expanded the set of primes to include gender stereotypical traits (e.g., emotional, aggressive) and nontrait attributes (e.g., laundry, cigar) and showed facilitation on name judgment (e.g., Jane, John). However, more complex

relationships between preconscious and postconscious effects may exist than are currently recognized. Automatic effects of the sort we have reported (Banaji & Hardin, 1996), which appear at first glance to be preconscious (in that they are not conditional on cognitive preparedness) may turn out not to be so. Blair and Banaji (1996a), for example, showed that such automatic effects are susceptible to preparedness in the form of expecting to be confronted with counterstereotypes.

Studies such as these point to the power of social category knowledge in automatic judgment. Just as the denotative meaning of a word is automatically activated on presentation, as shown by the vast amount of research on semantic priming (Neely, 1991; Ratcliff & McKoon, 1988), and just as the evaluative component of information is automatically activated on encountering an attitude object (Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Bargh, Chaiken, Govender, & Pratto, 1992), the social category meaning of ordinary information whose primary (denotative) meaning does not refer to social categories (e.g., veteran, ballet, basketball, colonial) is automatically activated on exposure. As Blair and Banaji (1996a) noted, these findings are "disturbing because such processes reveal the potential to perpetuate prejudice and discrimination independent of more controlled and intentional forms of stereotyping ... because people may be either unaware of the automatic influences on their behavior or believe that they have adequately adjusted for those influences, they may misattribute their (stereotypic) response to more obvious or seemingly justifiable causes, such as attributes of the target" (p. 26). The importance of these findings is underscored by other findings that do not show the automatic effects of seemingly plausible variables of automatic influence such as word potency (see Bargh, chap. 1).

Moderators of Implicit–Automatic Stereotyping and Prejudice Effects

Perhaps the most interesting feature of recent research on automatic social category effects is its complexity. Although unconscious effects may be pervasive they are neither unpredictable, a point Bargh makes about this entire category of effects, nor inevitable, as our data show. In each program of research, we demonstrated conditions under which implicit or automatic effects may or may not occur, and it is these interaction effects that provide an understanding of just how environments activate and provide the basis for application of social category knowledge. In the studies that tap what Bargh calls postconscious effects, we showed that stereotyping is crucially dependent on activation or fluency triggered by the environment. In the fame judgment experiments, subjects without prior exposure to names did not show differential use of the criterion to judge male versus female fame (Banaji & Greenwald, 1995). Likewise, Banaji et al. (1993) showed that in the absence of environmental triggers of abstract stereotypic knowledge, subjects did not judge a male and female target to vary along stereotypic dimensions. In both cases, some specific form of activation was necessary to produce the effect. However, the potency of the stimulus required may be quite mild, and the ease with which such triggers are available in everyday environments leads us back to the point made in

the previous section regarding the pervasiveness of the everyday microenvironments that are ripe for producing social category effects.

In the preconscious effects of social category knowledge, too, qualifications of the automatic activation of stereotypes are evident. Blair and Banaji (1996a) showed that consciously imposed expectancies or intentions can moderate the occurrence of automatic stereotype priming, especially when cognitive resources are available to do so. Variations in these factors (intention, availability of cognitive resources) can produce anywhere from a reduction of the automatic stereotype priming effect to a complete reversal of it. Environments can provide many levels of influence on intentions and cognitive resources. Direct and even coercive strategies may be used to both encourage and suppress the use of social category knowledge. But, along the lines suggested by Skinner, that environments select courses of action, we expect that environmental triggers that encourage and reduce the use of social category knowledge may occur without the conscious operation of intentions and goals. New evidence showing that environments may select counterstereotypic information leading to reduced automatic stereotype priming is available in Blair and Banaji (1996b).

Dissociations Between Automatic and Controlled Processes

Among the provocative findings reported in Devine's (1989) report, one that caught the imagination of many social psychologists was the finding that variation in explicitly expressed prejudice did not predict implicit stereotyping. The finding has both theoretical and practical implications, and here we focus on the theoretical aspects. In the research performed since that study was published, there were several reports of similar findings. In our own research, we showed that subjects' explicit gender stereotypes do not predict the extent of the false fame bias (Banaji & Greenwald, 1995), and that attitudes toward language reform and gender egalitarianism not predict the automatic activation of gender stereotypes (Banaji & Hardin, 1996). These findings, as Greenwald and Banaji (1995) discussed, may parallel findings in research on memory showing the dissociation between explicit and implicit forms. Such findings inevitably lead to discussions of the "separateness" of conscious and unconscious systems, with even the term *systems* connoting a fundamental segregation of these modes of thought. There is reason to be cautious in endorsing separate systems, in spite of the early evidence showing dissociations between explicit and implicit modes. First, as with other seeming dissociations in social psychology (e.g., that attitude and behavior were not related), more appropriate comparisons between explicit and implicit measures may reveal greater concordance across measures (see, e.g., Fazio, Jackson, Dunton, & Williams, 1995).

As with research on implicit and explicit memory, the debate will need to be more focused on the properties of the new measures that are being developed to capture automatic and implicit processes and revisions of older measures of controlled and explicit processes. Bargh's claims of separate evaluative, cognitive, and motivational systems will need greater precision in definition and more convincing

empirical evidence that it is indeed meaningful to speak of three separate systems. In particular, the proposal for a separate motivational system, in part because it has received the least empirical attention, needs greater scrutiny. At present, the effects reported as support for it may more parsimoniously be accommodated within the cognitive system.

CONCLUSION

> Freedom and dignity ... are the possessions of the autonomous man of traditional theory, and they are essential to practices in which a person is held responsible for his conduct and given credit for his achievements. A scientific analysis shifts both the responsibility and the achievement to the environment.
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> (Skinner, 1971, p. 22–23)

Causal action at a distance is difficult to perceive and identify. However, attention to automatic social processes allows theoretical mechanisms to be specified that show the link between features of the environment and internal mental processes. Microlevel social environments reveal entirely new layers of social processes for study, and here, attention to automatic social processes provide unprecedented theoretical advantages in understanding social behavior, in part due to the methodological and technological advances that accompany it. Bargh has provided social psychology with some of the best examples of these advances.

Our own work focuses on how knowledge about social groups and feelings toward them can play an implicit and automatic role in judgments of individual members. Because the causes of such judgments and behavior reside at some remove from conscious awareness and control, they can lead perceivers to be blind to their use of such knowledge and targets to be blind to such knowledge being used in their favor or against them (Banaji & Greenwald, 1994). Skinner was entirely wrong in equating explanations involving mental processes with explanations using divine intervention, and he was also wrong in transferring all achievement and responsibility from the individual actor to the environment. We now know that complex interactions between actors and their environments, when understood, can explain when and how much of achievement and responsibility emanates from one and the other. It is an exciting moment in social psychology to be able to examine the role of fundamental transducers of social action, the social groups of which we must be members. However distant their action and microscopic their influence, they play a ubiquitous role in the magnitude of the responsibilities we have and the ease with which we procure our achievements.

ACKNOWLEDGMENTS

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Chapter 3

Consciousness, Free Choice, and Automaticity

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The increased understanding of automatic processes fundamentally influenced and altered social psychology's view of human nature since 1985. In John Bargh's target chapter, he shows why he is a leader in illuminating these processes. His elegant reasoning and innovative experiments shed considerable light on how motivational and cognitive processes alter people's behavior with often little or no conscious awareness that they are being affected.

Although we have no quarrel with Bargh's procedures, data, or specific interpretations of research findings, we do wish to question one overarching theme of his work. Parts of his chapter, particularly the beginning and end, suggest that the understanding of automatic processes may eventually take over psychology to the extent that conscious processes and deliberative choice become outdated, superfluous concepts. In his words, "it may well be that there ultimately is no future for conscious processing in accounts of the mind, in the sense of free will and choice" (chap. 1, p. 52). In our view, such a conclusion requires a drastic leap of faith that goes far beyond what the data warrant. Beyond that, we want to propose a different understanding of the role of conscious processes in human behavior. Bargh may have trouble finding evidence of the effects of consciousness because he is looking in the wrong place.

Specifically, we propose that the role of consciousness is to override automatic, habitual, or standard responses on the infrequent occasions when such intervention is needed. Consciousness thus undermines the lawful, predictable nature of human behavior and produces a situation of relative indeterminacy. Such an approach allows us to treat Bargh's contributions as vital keys for achieving a new, expanded view of human nature and mental functioning—but nonetheless a slightly different view than the one he suggests in his chapter.