Chapter 8

Automaticity and Social Behavior: A Model, a Marriage, and a Merger

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The field of social cognition arguably represents the most influential marriage to date of any two disciplines in psychology. Although little more than 10 years old, this coupling provided us with a wealth of new constructs, paradigms, and perspectives with which to explore the underpinnings of social behavior. Nowhere has this marriage been more fruitful than in the distinction between automatic and controlled processing in social behavior. The construct of automaticity leant new understanding across a variety of domains—being powerfully applied to the exploration of stereotyping, attitudes, and attribution, to name but a few. In this volume, John Bargh presents a provocative argument that everyday social behavior is driven by automatic processes rather than controlled or conscious choices. He outlines three routes (perceptual, evaluative, and motivational) through which aspects of the environment can "automatically and nonconsciously produce social behavior" (chap. 1, p. 19).

Bargh deserves credit for the evidence presented, and for the synthesis of findings across domains and disciplines that this chapter represents. We applaud Bargh's challenge to social psychology to look beyond people's intuitive explanations of their own behavior; indeed, much of our own work has also dealt with the exploration of social processes that are hidden from verbal reports and overt actions (Cacioppo, Gardner, & Berntson, 1996; Crites, Cacioppo, Gardner, & Berntson, 1995). Kudos aside, we do have a few quibbles with the current chapter, namely the equating of social phenomena invariably with automatic phenomena, and we begin our response addressing this point. Then, we explore an additional, complementary perspective that includes biological as well as cognitive phenomena in exploring the psychological underpinnings of everyday life.

ARE SOCIAL PHENOMENA INVARIABLY AUTOMATIC?

Throughout the chapter, Bargh argues that social processes are implemented largely by automatic rather than conscious or controlled processes. His argument seems to rest on two lines of reasoning. First, the study of social psychology and the study of automaticity are presented as equivalent because they both share the specification of if–then relations between the environment and behavior:

> Thus, research and theory in both domains, social psychology and automaticity, have at the core the specification of if–then relations between situational events and circumstances on the one hand, and cognitive, emotional and behavioral effects on the other... My thesis is that because social psychology, like automaticity theory and research, is also concerned with phenomena that occur whenever certain situational features or factors are in place, social psychological phenomena are essentially automatic.(chap. 1, pp. 4–5)

Although it is true that research programs concerned with both social psychology and automaticity share the goal of specifying causal (if–then) relations between events, this feature is common to most empirical sciences. Scientific endeavors generally rest upon the assumption of lawful and determined relations between events—otherwise empirical study would be pointless. Thus, we disagree with the tenet that causality and automaticity are synonymous, as Bargh seems to argue in this quote:

> If the situation activates the same goal in nearly everyone so that it is an effect that generalizes across individuals, and can be produced with random assignment of experimental participants to conditions, the only preconditions for the effect are those situational features (p. 6).

If the defining feature of an automatic effect is that it can produce a statistically significant difference between randomly assigned experimental groups, then empirical social psychology would essentially be the study of automaticity. But if this were the case, the value of the distinction between automatic and controlled processes would be lost. After all, controlled and conscious responses may also be related in a causal fashion to preceding events. Consider the case of persuasion. One robust finding in the literature is that greater attitude change is found when participants are exposed to strong rather than weak persuasive arguments and also possess both the motivation and the ability to process these messages (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986). The amount of persuasion is thus causally related to the quality of the message, but only through the mediation of effortful and deliberative processing. When participants are distracted (traditionally thought to affect controlled rather than automatic processes) no difference between strong and weak messages on attitude change is found (Petty & Cacioppo, 1986). Dual process models of persuasion represent one instance in social psychology in which the distinction between more and less effortful processing was fruitful. However,

they also demonstrate causal relations between antecedents (message quality) and consequences (attitude change) that are mediated by nonautomatic effects. We suppose that Bargh could apply a similar argument for automatic processes mediating the effects of message quality in the elaborative or systematic condition as he did for explaining conscious mediators of Latané and Darley's (1970) diffusion of responsibility effects:

> ... if these conscious processes do mediate the situational effect, then they must themselves be tied to those situations in an if–then relation ... For the effect to occur with regularity across individuals, the feeling of less responsibility and the decision not to help, and so on, are also automatic reactions to the situational information across different individuals. (p. 6)

However, we argue that this diminishes the value of the automatic versus controlled distinction. If the attitude change occurring in response to peripheral cues in the distraction condition is automatic (because it requires neither intention nor elaboration to occur), then to argue that the effect of message quality that replaces the effect of peripheral cues in the effortful processing condition is also automatic because it can be determined in a causal fashion obfuscates the distinction between the two routes of persuasion.

Another example also suggests the value of retaining the distinction between automatic and controlled processing. Individuals who differ in need for cognition were shown to exhibit chronic motivational differences in the effortful processing of information (Cacioppo & Petty, 1982; Cacioppo, Petty, Feinstein & Jarvis, 1996). The auto-motive model suggests that these differences stem from an automatic trigger between environmental cues and a goal, a suggestion that the extant literature supports (see review by Cacioppo et al., 1996). High need for cognition individuals do not necessarily choose to process the information they are given effortfully. Rather, the presentation of new information may automatically trigger thoughtful processing as a strategy, because this strategy was used repeatedly by the individual similar situations. Despite the probable automaticity of this initial trigger, however, the subsequent processing and the outcomes of such processes (i.e., judgments concerning the information) are nonautomatic in nature, although they are determined, at least in part, by differences in information quality. Once again, a definition for automatic processing that demands that the initial trigger between the presentation of new information and the motivation to think in high need for cognition individuals be called automatic but also demands that the link between these individuals' judgments and information quality (mediated by thoughtful, effortful processing) be called automatic, is problematic.

Bargh's first argument for the equivalence of social phenomena and automatic phenomena is largely a semantic one, with the conclusion depending on the way in which automaticity is defined. One might argue about what the critical attributes of automatic and controlled processes should be (Bargh, 1994; Posner & Snyder, 1975; Shiffrin & Schneider, 1977), and our point is not to favor one or another set of such attributes. Instead, our point ~~instead~~ is that the presence of if–then relations or determinism alone should not be a critical defining attribute of automatic versus

controlled processes. The distinction between automatic and controlled process in empirical inquiries is valuable in social psychology—defining automaticity in such a way that makes all processes automatic does not seem to serve the field well.

Semantics play less of a role in Bargh's second line of reasoning for the similarity of social psychological phenomena and automatic phenomena. Bargh uses the inevitability of continued findings of automaticity as evidence that social phenomena are indeed automatic. Bargh points to research programs that progressively showed more of an influence of automatic processes in domains in which thoughtful processes used to be dominant (e.g., attribution, attitudes). His own work persuasively demonstrates the role of automatic processes even in the case of strategic and goal-driven processing.

What the research programs reviewed in Bargh's chapter demonstrate, however, is that many social psychological phenomena can be driven by primarily automatic processes, not that they are driven primarily by them in everyday life. The task remaining for social psychologists interested in this area is to determine when these processes are relatively more automatic or controlled, and how the way in which the processes are mediated change the outcomes in terms of social behavior. This specification of the antecedents and consequences of automatic and controlled social processes was nicely demonstrated in Devine's (1989) model of stereotype activation and in Gilbert's (1989) model of attributional processes. Both of these models showed the sufficiency of automatic processes in producing certain social outcomes (e.g., racial prejudice, dispositional attributions), but also demonstrated the correction of these outcomes when people possess the motivation and the ability to engage in controlled and deliberative processing.

There will always be a place in social psychology for the study of controlled processes, because they are often precursors of automatization in the first place. Bargh uses the wonderfully descriptive metaphor of automatic processes as mental servants, likening the automatic activation of mental constructs to the behavior of a well-trained English butler who knows precisely what you want and when you might want it. Let us not forget who trained the butler. Jeeves may bring the Queen Mother tea with cream (rather than with lemon) at precisely 3:15 (rather than 4:00), because this is what she initially made the effort to ask for at the beginning of his employ. Likewise, an automatic interpretation of "self-discipline" to explain the behavior of a thin and stylish colleague who forgoes dessert (rather than interpreting the behavior as a dislike of sweets) is a result of initially conscious deliberation of the motivations of similar others in similar situations. As Bargh states:

> ... if an individual makes the same categorization ... of a given act ... consistently over time ... if an individual makes the same evaluation ... of a given object consistently over time ... if an individual has the same goal and intention within a social situation repeatedly over time ... then that goal representation ... will become active automatically ... (chap. 1, p. 12).

The precursors of automaticity in social processes are often controlled processes and conscious decisions; this is sufficient to ensure that the study of social psychological phenomena should not be reduced to the study of automatic processes.

At the same time, Bargh's questioning of the prevailing assumption of conscious mediation in social behavior is clearly warranted. By pointing out areas of social psychology in which the discovery of automatic processes called into question the omnipresence of controlled processes, he argues that the assumption that thoughtful processes mediate social behavior "should be treated with the same scientific scrutiny as the assumption of automaticity" (chap. 1, p. 8). We ardently agree—the burden of proof should rest equally on those who assume automaticity and those who assume conscious deliberation. However, we argue that continued findings of automatic processes occurring in what was thought to be the domain of controlled processes do not obliterate the value of the study of those controlled processes. After all, as psychologists continue to break down any controlled process, additional subprocesses will inevitably be identified—many of which will be automatic. This does not diminish ~~neither~~ the impact of the controlled process ~~nor~~ the importance of understanding the controlled process; it merely represents an additional level of analysis, a complementary but not exclusive perspective. As a concrete example, consider eating behavior, or more specifically, the phenomena of dieting. An understanding of the psychology of dieting may be approached from a variety of perspectives. One focus might be the identification of relevant neural processes, such as the role of hypothalamic functioning in the regulation of appetite. Another could be the exploration of automatic cognitive processes evoked in response to either environmental or internal hunger cues. Both of these represent powerful determinants of dieting behavior; but knowledge at neither of these levels of analysis diminishes the value of understanding the behavior at the level of psychological experience—the investigation of the conscious, controlled, and effortful strategies of the dieter.

The investigation of automatic processes provides a valuable perspective on social phenomena. Indeed, it is yet another example of how our field has been vitalized by the marriage between social and cognitive perspectives. Bargh's review of the evidence that social phenomena are largely automatic is one testament to the value of multiple levels of analysis. He clearly demonstrates how much more of social behavior can be understood when the unconscious and automatic cognitive underpinnings of behavior are considered in addition to the level of conscious experience—we would like to encourage an even further expansion.

A MULTILEVEL PERSPECTIVE ON THE PSYCHOLOGY OF EVERYDAY LIFE

Just as the understanding of automatic cognitive processes brought much to bear to the explanation of social phenomena, we believe that a multilevel social neuroscience perspective (e.g., including an understanding of biological processes) would likewise enrich the field. Bargh's work shows that research at no single level of analysis may sufficiently describe social psychological phenomena—neither an understanding of the conscious processes alone nor a sole dependence upon

unconscious processes captures the richness of social experience, nor predicts the vagaries of social behavior. Similarly, a biological perspective in isolation could never hope to explain the complexities of everyday psychological phenomena. However, as an addition to the understanding of both the unconscious automatic and consciously controlled cognitive processes, consideration of the neural underpinnings of these processes may have much to offer (cf. Cacioppo & Berntson, 1992).

Bargh opens the door to this type of multilevel integrative analysis when describing the neurophysiological evidence in support of the automaticity of evaluation. Because of the fundamental and adaptive nature of the approach–avoidance distinction across species, the ability to evaluate quickly stimuli would be predicted to be hardwired into the biological system (Berntson, Boysen, & Cacioppo, 1993; Lang, Bradley, & Cuthbert, 1990; Zajonc, 1980). Bargh reviews provocative research that provides evidence this may be so and demonstrates how preconscious evaluation may then impact behavior.

In explaining the possible operation of unconscious motivations, Bargh draws support from research observing neuropsychological populations. For example, when a split-brain patient complies with the command issued to the isolated (and nonverbal) right hemisphere, the verbal left hemisphere will almost immediately rationalize the action taken. Just as the field of social psychology gained from an understanding of the fundamentals of cognitive psychology, many advances in cognitive psychology were spurred by research and theory in neuroscience. The understanding of unconscious perception, implicit memory, and similar cognitive phenomena were significantly advanced since the 1970s by insight gained from the neuropsychological literature. The observation of "blindsight" in functionally blind patients, the startling procedural learning capacities of the amnesiac H. M., and the "unconscious" abilities of the isolated right hemisphere in split-brain patients made essential contributions to the field of cognition (Squire, 1987).

Likewise, a recognition of the capabilities and constraints of the neural systems underlying both conscious and unconscious mentation can benefit theory in social cognition. As an example, consider two metatheoretical underpinnings of the model Bargh proposes: (a) the assumption of parallel rather than serial processing and (b) independent but interacting processing modules. Bargh states:

> My implicit adherence to the stage model nearly led me to conclude that the extent of direct automatic influences of the environment on social cognition was limited to perceptual interpretation ... it was the metaview of serial processing stages that made the notion that motivations could be directly activated by the current environmental information difficult for me to see. (chap. 1, p. 84)

Bargh further outlines the pervasiveness of the serial stage conceptualizations of cognition that were proposed in the 1960s in the thought and theories of modern social cognition researchers. He offers a plausible reason for the continued adherence to serial models: Our own consciousness is serial in nature and thus a serial model of cognition is intuitively appealing. Bargh's chapter argues for going beyond our intuitive understanding of the motivators of social behavior. One way in which

we may be guided in this task is through observation and appreciation of the underlying neural system. The workings of the neural system may provide valuable information in addition, and sometimes in opposition to the conclusions toward which common sense deduction often urges us. For instance, the assumption of serial processing may be based on our own conscious experience; that this experience is overlaid upon a nonserial set of processing is evident from research on the neural underpinnings of this experience (Kolb & Whishaw, 1996; Thompson, 1993). Thus, models such as Bargh's, in which many mental operations are carried out simultaneously rather than in serial may provide better explanation of psychological phenomena, and are more realistic from a purely neurophysiological point of view.

The second metatheoretical view Bargh's model adheres to—that of independent but interactive processing modules—is also supported by the neuroscientific literature. Research by LeDoux and colleagues (LeDoux, Iwata, Chichetti, & Reiss, 1988) aptly demonstrated that the acquisition and representation of affective memories can operate at multiple, interrelated levels within the brain. Conceptual extensions of this work also made their way into social psychology. For instance, Cacioppo, Marshall-Goodell, Tassinary, and Petty (1992) discussed how racial attitudes can be acquired at higher and lower levels of the nervous system and how each may operate (sometimes in conflict) to produce both intentional and unintentional stereotypic behavior. Finally, recent data implying that the brain areas involved in nonevaluative judgments point to overlapping but different neural structures than those involved in nonevaluative judgments (Cacioppo, Crites, & Gardner, in press) and the finding that discrete neural areas are implicated in the experience of positive and negative affect (George et al., 1995) provide further illustrations of interacting but separate neural systems underlying socially relevant processes. Thus, research in neuroscience is consistent with the independent but interactive processing modules Bargh suggests. Bargh draws on the neuroscientific literature (Gazzaniga, 1985; LeDoux, 1989) to support his model of simultaneously active, separate, and interacting processing modules, and in so doing takes the first step toward the integrative analysis necessary to understand the psychology of everyday life.

A social neuroscience perspective may also offer new challenges to the field of social cognition. The neuropsychological example of commisurotomy (split-brains) is a fascinating one because it provides further support for the notion that motives can operate outside of conscious awareness, and because it questions the very notion of what the field has termed "conscious" process. Is consciousness simply the ability to report our experience? If so, then research with split-brain patients illustrates that "unconscious" processes can also behave in what appears to be a controlled and deliberative fashion. For example, reports of "cross-cueing" in split brains exist, wherein the left hand (right hemisphere) will "act out" a word to which it was exposed in a one-handed game of charades, attempting to communicate the word to the left hemisphere. This behavior appears deliberative, despite the fact that it is nonverbal. Currently, the social psychological literature equates "unconscious" with "nonverbalizable." The inability of a research participant to report

stimuli, motives, or processes is the operational definition of unconsciousness prevalent in the field. The neuroscientific literature calls into question the sufficiency of using the inability to verbally report experience as either a definition or an operationalization of unconsciousness. Questions concerning the nature and function of consciousness exemplify the type of research that must be answered by integrating a variety of perspectives, from biological to social.

CONCLUSION

Bargh presents a provocative view of the power and omnipresence of automatic processes in social behavior. He provides abundant evidence for the impact of automaticity in everyday life, and a model that aptly describes the ways in which automatic processes can mediate the situation–behavior relationship—even in domains such as goals and strategy selection, which intuitively seem conscious and controlled. One of the few aspects we found with which to argue is the sentiment that all social phenomena are essentially and invariably automatic phenomena. Bargh argues forcefully for the pervasiveness of automaticity in social psychology in order to overcome "dominant assumptions to the contrary" (chap.1, p. 82). We wholeheartedly endorse the importance of existing and future research in this domain, but with the reminder that, however informative it proves to be, the study of automatic processes is a complement to existing perspectives, not a substitute. What Bargh's chapter does well is to exemplify the value of nontraditional perspectives on social phenomena. The appeal of this type of synthesis is clear in the breadth of psychological effects Bargh is able to explain. A complete understanding of the psychology of everyday life, of course, will require looking across levels—from basic genetic and neural processes, to unconscious and automatic cognition, to conscious and deliberate thought and action to contextual and cultural determinants. By describing the contribution of automatic cognitive processes in goal-directed action and other social phenomena, Bargh fires an early salvo for a multilevel integrative analysis of social behavior. Indeed, research on the automaticity of social behavior might best represent the benefits of the marriage between social and cognitive psychology. It would be regrettable if in the enthusiasm to include this level of analysis, other levels of analysis were ignored or defined to be irrelevant. Just as the marriage of two people should neither obliterate the separate identity of either one nor exclude interpersonal relationships with others, the marriage between social and cognitive psychology should have synergistic effects on both fields while allowing mergers with other fields and levels of analysis.

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