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DÉJÀ VU: LET'S CELEBRATE THE UNCONSCIOUS

Before You Know It: The Unconscious Reasons We Do What We Do

By John Bargh. New York, NY: Touchstone, 2017. 352 pp. Hardcover, $11.16.

The book *Before You Know It: The Unconscious Reasons We Do What We Do,* by John Bargh, is a personal, engaging, and purposeful discourse about the unconscious reasons we do what we do. In my reading, the book deserves the praise it has received. The author competes effortlessly with Malcolm Gladwell (who endorsed the book), Steven Pinker, Daniel Gilbert (who also endorsed the book), and other of our popular behavioral science writers. My handicap in reviewing the book is my inability to not treat it as a piece of scholarship for a refereed journal rather than simply accepting it as a layperson's introduction to the magic of the unconscious. The author has paid his dues to the scholarship society, authenticating the requisite number of refereed publications, named professorship at Yale University, and director of a prestigious research group. The book guides the audience through many potential unconscious past and present influences on our thoughts and behaviors and offers advice on the proper manner in which to accommodate this new knowledge. My review acknowledges these positive contributions but finds it necessary to correct Bargh's history of the study of the unconscious and also confront issues with the validity of the research findings central to the book.

Discovering the Unconscious

Before reviewing the content of the book, it is worthwhile to evaluate Bargh's claim of somehow awakening to unconscious influences on behavior, as well as reminding readers of the role of the unconscious and how it has been studied in psychological inquiry. I am defining unconscious as not conscious, the part of the mind that is inaccessible to the conscious mind but that affects behavior, thought, and emotions. This definition is not tainted by assuming homunculus, spiritual, or Freudian overtones. Because he was trained as a psychologist by one of the seminal figures of our field, Robert Zajonc, it is surprising that Bargh's tale could be so erroneous and misleading. He puts himself at center stage for discovering that "unconscious effects being reported could occur without needing extensive prior conscious experience, or even any relevant experience at all, for that matter" (p. 32). Other investigators have affirmed similar claims about putative limitations of the cognitive psychology framework. Alex Cleeremans (2014, p. 1288) states, "In Cleeremans (1997) and also in Cleeremans and Jimenez (2002), I suggest that the central reason why dissociations between conscious awareness and behavior remain so controversial, even today, is fundamentally a conceptual one—namely that the phenomena of implicit cognition cannot be reconciled with classical perspectives on information processing."

All generations of cognitive scientists would be alarmed at Bargh's statement, "Cognitive psychology, on the other hand, championed the role of conscious thought and assumed it was necessary for nearly all human choices and behavior. Nothing happened, according to this view, without you consciously and intentionally causing it to happen" (pp. 29–30). I do not know where he acquired this impression of cognitive psychology, but certainly one cannot find it in the classic texts of Neisser (1967) and Norman (1969). It is true that Neisser did not take a revelatory stand on this issue; for example, conscious and unconscious are not indexed. But nowhere does he imply that "information is what is transformed, and the structured pattern of its transformation is what we want to understand"(p. 8) as a conscious process. His computer program analogy of information processing cemented the issue for me on the side of the unconscious. Norman's brief discussion of consciousness and memory address only the rehearsal aspect of the output of information processing.

Early in the book, Bargh attempts to convince the reader of his great unconscious insight about what

else but that the unconscious comes first. His incredibly detailed dream of walking in the Everglades in view of an alligator whose belly moved forward ahead of him somehow told him that the unconscious comes first. A dream expert gave a highly skeptical evaluation of his account. "I don't believe it, and think it is made up. . . . Dream reports rarely have such detailed scenery accounts, and it's made-up ones and fairy tales that start the way that one does." As Domhoff and Schneider (2018) show, when an animal appears in a dream, the most likely context is that there will be an aggression.

It is difficult to accept that someone mentored by Robert Zajonc, who documented implicit influences of mere word exposures as well as social facilitation, believes that our field assumed that influences on behavior must be consciously processed (Moreland & Zajonc, 1977; Zajonc, 1980). Is it necessary to catalog the history of psychological inquiry to convince him that psychology has always adhered to his putatively "discovered" principle, whether Gestalt, behaviorist, or cognitive psychology was the guiding theoretical framework? Since at least the time of Helmholtz, behavioral science has always been grounded in studying unconscious influences on behavior. The traditional arsenal of cognitive psychology has provided valid dependent measures of measuring implicit influences on behavior and dissociations between conscious awareness and behavior.

Consider a now classic experiment by Benjamin Libet (1985), who studied the (non)role of conscious intention in controlling action. Participants reported their impressions about the exact time when they decided to act and when they actually acted. While brain activity was being recorded, participants viewed a clock and introspectively reported the times shown on the clock corresponding to their choice and their action. The motor area of the brain produced electrical activity in the form of a readiness potential to move about 250 ms earlier than the participant's report that they decided to move. This result from 1985 reinforced current thinking that our conscious experience of a decision has already been anticipated by preconscious brain activity. This result is not too surprising, however, because our conscious experience of the world around us necessarily follows a great deal of unconscious processing. In explaining Sternberg's (1966) seminal results on memory search, for example, the estimated search time of about 40 ms per item was at least implicitly assumed to be not conscious. We cannot describe how we quickly recognized the redwood tree outside our window, only our experience of seeing it along with a post hoc conjecture of what characteristics might have been important. The literature and our experience dictate that much of what makes us is unconscious, but we maintain that we are in control of our actions. Given that our values, motivations, and goals contribute to our thoughts and behavior, we trust that we have control of our destinies. As rationalized by Nobel laureate writer I. B. Singer, "You have to believe in free will; you have no choice."

Controversial Results

The author neglects to inform the reader of how controversial most of his results are because there have been many failures of replication. One review by Schimmack (2017) actually quantifies the replication possibilities for the many studies cited in the book. Thus the nonspecialist reader can be easily misled in believing that the results he describes are robust. The only time the author addresses replication issues is when he giddily cites a meta-analysis that verified his results on affective priming. To the author's credit, on the other hand, he weaves his own experiments into existing empirical and theoretical contexts that make them more credible.

Notwithstanding the issues with replicability, some of the results are informative in the same manner that good literature has informed psychological understanding. In Anna Karenina (Part 8, Chapter 12), Levin's putative mind-changing insight is "that he could only live by virtue of the beliefs in which he had been brought up." This might serve as a linchpin for many of the hidden influences brought into the social scientist's laboratory.

Admittedly, I am now less enamored of replication than I was in my review of the *Seven Deadly Sins of Psychology* (Massaro, 2018). I wholeheartedly endorse good experimental procedure but realized (not by awakening from a dream) that my theoretical framework actually anticipates that it would be difficult to replicate many results from one-shot experiments. Variation in the observed results occurs because people are always influenced by multiple sources of information (Massaro, 1998), and people can differ dramatically in terms of what sources are influential and how much influence a given source of information will have. Participants, geographic location, time of day, and experimenters differ, but these are not the only differences. There will necessarily be other influences outside the experimenter's control, and these influences will necessarily differ in every replication. Thus it is only natural to expect

somewhat different results in what appear to be fairly identical experimental conditions.

Perhaps what is most misleading to not only laypersons but also to overly enthusiastic scientists is overgeneralizing statistically significant results. As observed by Ellis (2013), some of our more prominent science communicators misinterpret positive experimental results as applying to everyone. However, we all know that statistically significant results occur even when a significant number of participants do not show the effect or even show the opposite effect. Seldom does the researcher divulge how many participants did not conform to the conclusion portrayed in the research report, however.

Suppose you were convinced by Bem's (2011) controversial results on the possibility of predicting the outcome of a completely unknown event. Students were accurate 53% of the time in predicting which of two possible locations contained an erotic picture. If we assume a normal distribution of performance across the participants, it means a *z* score of about 0.08, or about 8% of a standard deviation. This means that many participants showed no prediction advantage, and many also predicted poorer than chance. It is difficult to imagine how this result, even if true, would give anyone some noticeable advantage in predicting the future in the real world. (It is true that the size of this advantage for the house keeps gambling doors open in Las Vegas and other venues, but I do not see how this would be functional in day-to-day living.)

Before the reader worries about my slighting replication, I do want science to progress in a natural way and one that is correct and informative (Massaro, 2018). Ideally we should not be simply cataloging results and whether they are replicated but in addition finding regularities in behavior that shine through the diverse set of experiments and results accumulating at an accelerated pace. Factorial designs and single-subject analyses might overcome some of the limitations of between-subject manipulations, but this method has not been used in most of the controversial experiments. A counterargument might be that a particular manipulation of interest can be carried out only once for a given subject. This would preclude both repeated measures and single-subject analyses. However, certainly some of these research questions can be implemented in factorial designs and single-subject analyses. For example, this experimental paradigm can be used in affective priming studies in which multiple tests can be presented to a single participant. For the more challenging questions, perhaps experimenters simply have to think more laterally about how to apply them in the laboratory.

To illustrate the power of single-subject analyses, I retrieved an old unpublished study on how much our computer-animated talking head, Baldi, contributed to speech intelligibility. Noisy auditory speech utterances were presented with and without Baldi's animated visible speech. As can be seen in Figure 1, Baldi improved the intelligibility of each of the 71 participants. The results also show that some par-

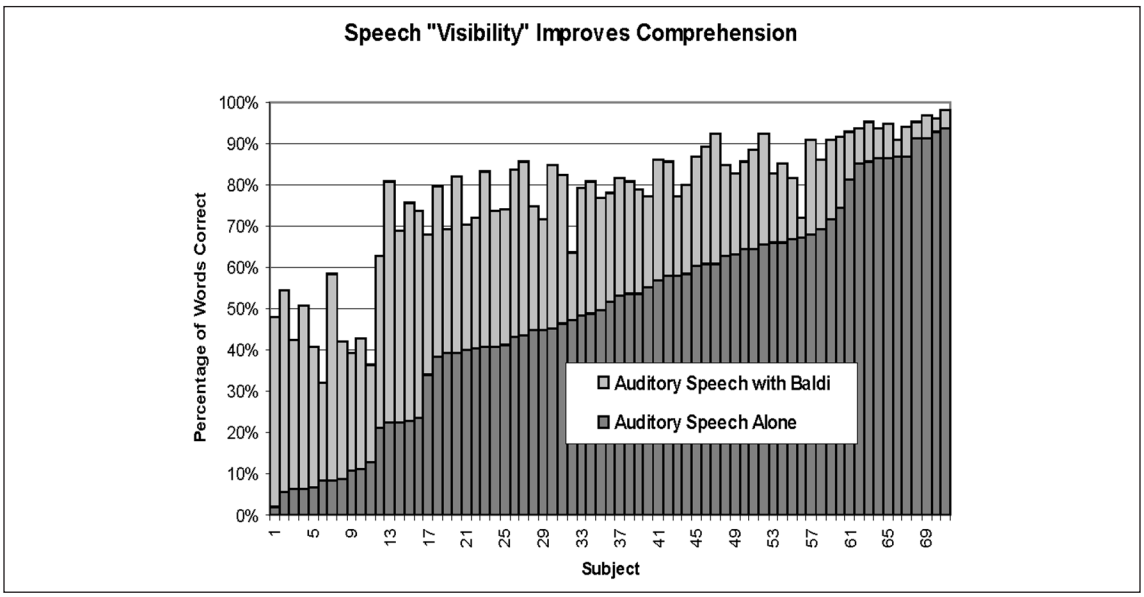

FIGURE 1. Percentage of words identified correctly for each of 71 participants for auditory speech alone or with auditory speech aligned with a computer animated talking face, Baldi

ticipants were aided more than others. Participants performing similarly with just auditory speech differed substantially in terms of the advantage provided by having Baldi accompany the speech. Additional research revealed that a participant's advantage is a direct function of how well he or she could lipread or, more appropriately, speechread. One other important difference seen in the figure is that the size of a person's advantage is related to the intelligibility of the auditory speech. Baldi provides a more substantial advantage when there is poorer-quality auditory speech. Would it be unreasonable to set a gold standard of research inquiry that entails single-subject analyses? Perhaps this is also a call for recruiting members to a diminishing vocation of personality psychology or at least individual differences.

Experimental Findings

What research findings of the author and colleagues warrant the book's thesis that the unconscious motivates what we do? In Chapter 2, Bargh introduces the idea that there is a fundamental connection between physical sensations and social relationships. "Today we still speak so easily of a warm friend, or a cold father. We always will. Because the connection between physical and social warmth, and between physical and social coldness, is hardwired into the human brain" (p. 66). The author describes an experiment asking whether a warm or cold physical experience could influence the likeableness of a person. Participants read a description of a person after holding an iced or hot coffee. The participants who briefly held a warm coffee liked the person more than those who held the iced coffee. Although unmentioned by the author, this study has generated more than enough controversy about its reliability (Lynott et al., 2014).

Two experiments were inspired by a study revealing that children at age 4 who showed greater fear and inhibition were more likely to hold conservative attitudes two decades later (Block & Block, 2006). Bargh et al. either used an imagination exercise to instill physical safety in their participants or used a control imagination condition unrelated to physical safety. Measuring their social attitudes after the exercise, they found that conservative participants had become more liberal with the imagination of physical safety, whereas liberals were not influenced.

Chartrand and Bargh (1999) carried out an early experiment on the chameleon effect. They paired a participant with a confederate in a joint task of evaluating Rorschach images. The confederate performed a set of behaviors during the interaction, and, as predicted, the participants tended to mimic the actions of the confederate. Supporting the unconscious influence explanation, participants did not divulge any awareness of their mimicry. Similar results have been shown in virtual reality situations, using avatars that mimic or not mimic a participant's behavior (Bailenson & Yee, 2007). The author applies these results to situations such as everyday interpersonal interactions, effective interrogation methods using imitation, the influence of social media and Internet "friends," advertising influences, and even the reduction of crime in New York City before the turn of the twenty-first century. All of these reinforce a long-standing social psychology dictum that the social situation is the primary determinant of behavior. If you want to change behavior, change the situations in which people are living. Individually, we have the ability to shape our surroundings to support living out our values.

The author describes an experiment from his lab illustrating implicit approach–avoidance. Participants played a video-like game in which they had to push a lever toward them or pull the lever away from them to remove a word that occurred on a screen. They were faster at pulling "good" words towards them and pushing "bad" words away from them than their speed in the opposite conditions. Other researchers found similar results with faces when the trustworthiness of faces was varied. The task of making a response toward oneself versus away from oneself might be a simpler measure than the one currently being used in studies of the Implicit Association Test.

The author's research has pushed affective priming results in "more challenging" directions. When participants were required to make good–bad judgments, previous research illustrated that priming with "good" words such as *butterfly* speeded up decisions to "good" words such as *wonderful* relative to priming with "bad" words such as *cockroach*. In an extension of this study, the researchers waited several days between the affective priming and the test and still were able to achieve the expected priming results. In addition, they found an effect even when the participants simply named the test items aloud.

The author also devotes about four pages discussing a priming experiment concerning the possible influence of the Protestant work ethic and Puritan ethics on American values. Americans but not people of other nationalities supposedly could be primed to endorse both the Protestant work ethic and Puritan ethics. No apparent citation is given for this putatively unpublished experiment. He describes the experi-

ment in great detail but does not admit that it is an unpublished study. The only reference in the notes has to do with a methods chapter written by him and a coauthor. Perhaps the author can justify this strategy because the book is meant to be a book for laypersons, but should they not have the benefit of full disclosure? Although he does not miss an opportunity to cite a meta-analysis to support his results on priming, he does not acknowledge the controversy and failures to replicate other results from his research.

In the discussion of these and other studies the author talks about an influence of a particular variable on performance, but he does not usually give quantitative results in terms of allowing the reader to understand the magnitude of the effect. And in many examples, the effects are small and have been difficult to replicate consistently (e.g., Pashler, Harris, & Coburn, 2011; Pashler, Coburn & Harris, 2012).

Schimmack (2017) published a quantitative analysis of the experiments presented in Bargh's book. In a heroic performance, he found 168 usable original articles that reported a total of 400 studies. Of course, most of these studies were significant because this is a criterion for publication. Schimmack then computed a *z* curve (Schimmack & Brunner, 2017) to estimate replicability of the results. Based on this metric, less than 50% of the studies would produce a statistically significant result again if all 400 studies were replicated exactly. Given this result, there is plenty of argument for emphasizing either the donut or the hole. Given the disparity across the many studies, can we make sense of which findings seem to have substantial reliability and which are clearly suspect? So maybe "the issue may not be so much one of emphasizing the donut or the hole, but is this even a donut?" (Rowe, personal communication, September 3, 2018).

Three findings seem to hold up in a variety of studies spanning a fairly large spectrum: mimicking another's behavior unconsciously and unintentionally, unintentional and unconscious evaluation of the things in one's surroundings as good or bad, and movement toward and away from good and bad things, respectively. Two more suspicious findings include priming words influencing behavior and whether a physical warmth experience can affect a social warmth behavior. The priming results appear to hold up in a meta-analysis of roughly 300 experiments (Weingarten et al., 2016), whereas more recent studies continue to either replicate or fail to replicate the results. We might say the final warmth issue is yet unsolved, but who is going to question whether our physical experience in some context has cognitive and social consequences? Ask anyone over age 50 or so how they feel and behave in a noisy restaurant relative to a similar dinner in quiet. I wonder now why beer has been so central to my discussions and debates with colleagues and friends about how the mind works.

Notwithstanding the controversial influence of physiological temperature influencing behavioral tendencies, I found the issue relevant in evaluating a possible car purchase. I had just test driven a cozy 2018 Toyota Camry (that had been parked in the sun) and switched to a shaded cold Avalon. I was immediately turned off the Avalon, but having just read about this possible influence, I thought slow rather than fast and considered whether my reaction might be influenced by the car's temperature rather than the different designs of their interiors. However, in my mind the design advantages of the Camry still held up even though car temperature might have been a possible influence.

A Note on Citations

Although citations of the research literature in popular books might become outdated, I have to take issue with the author's formatting of citations throughout the text. No footnotes or other indications of the citations are given in the main body of the text. The *Notes* section simply lists a few words or phrases from the text for a citation. So the reader of the main text does not know when any of its propositions in the text has a citation. The connection between the text and *Notes* is also not linked in the electronic version of the book, although it could have been very easily. To track down a possible citation, the readers must go to the *Notes,* find the page number and phrase listed for that page, and then find the phrase in the main text on that page, which is not easy. For example, he discusses the important influence of children's culture and language on the first page of Chapter 3, "Prime Time" (p. 73). So reading page 73, looking for documentation, one goes to the *Notes* section and learns that the only citation is to Pinker (1974) associated with the phrase *in the first place*. The reader must now return to page 73 and find this phrase in order to discern what proposition is being cited. As far as I can tell, tracking the citations would be even more tedious in the electronic version. I do not think that this reflects the author's reluctance to document exactly the evidence for his conjectures, because this format is being used in other books. *Thinking Machines* by Luke Dormehl (2017) is even more egregious

because the notes point back to the page only, not any specific proposition on that page.

Concluding Remarks

Should we recommend this book to colleagues and students? It is an engaging overview of a controversial area of inquiry that might be dubbed as "yet another unconscious influence." The reader will learn about the extremes social scientists will take to reveal some hidden demon influencing our behavior. However, the author weaves a reasonable case for the influences being studied. Other scientists might wish that the spirit of Senator Proxmire would return to bury these studies with Golden Fleece awards. As citizens of the scientific community, we should applaud a public debate on controversial results. A positive outcome would be if this book brings this debate to the foreground.

In the third section of the book, the author offers the thesis that we are sensitive to goal-related information, which touches on what is now popularly called predictive coding (Clark, 2003). Thankfully, he did not also claim the process was Bayesian. I appreciated the reminder that Jerome Bruner (1957) actually anticipated this concept when he originated the concept of perceptual readiness.

One guiding principle Bargh offers is that certain goals can easily override our professed values. Even seminary students will bypass a sick person to avoid being late for a lecture on the Good Samaritan.

Most importantly, for the layperson, Bargh's last chapter offers sound advice on how to tame unconscious influences. Answers to audience questions in his Google talk (Bargh, 2017) also provide some concrete suggestions. Manage your environment to help support your conscious goals. Similar to the advice from Scott Adams (2013), make it a habit to put on your exercise clothes even if you are currently ambivalent about exercising. Once you are dressed for the part, it is going to be much easier to see it through.

NOTE

This review profited immensely from discussions with Bill Rowe and his responsive readings of several drafts of this review.

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THE RETURN OF THE DEATH INSTINCT

Natural Causes: An Epidemic of Wellness, the Certainty of Dying, and Killing Ourselves to Live Longer

By Barbara Ehrenreich. New York, NY: Grand Central Publishing, 2018. 256 pp. Hardcover, $27.00.

> ***"The older I get, the more everyone can kiss my ass."***
> ***Folk humor***
>
> ***"I gradually came to realize that I was* old enough to die*."***
> ***B. Ehrenreich (p. 2)***

Barbara Ehrenreich's 23rd book, *Natural Causes,* is about death and dying, but it is not another treatise on the horrors of disease and decease and how to deny them; it is an attempt to reshape our entire frame of perception. A superficial reading of her book might give the impression that Ehrenreich simply conveys the obvious: "Death is certain! Deal with it!" But this impression would be false. Ehrenreich reaches deep into cultural history and social assumptions, the science of cell biology, and her own lived experience to resurrect a paradigm long thought dead: vitalism (Bechtel & Williamson, 1998). She calls for nothing less than a reconsideration of our most fundamental concepts, such as life, death, agency and free will, the self, and the universe. Perhaps it is a bit much for 200 sparsely lettered pages, but then again, *Natural Causes* is not an academic treatise but a polemic or *Streitschrift,* designed to provoke and to stimulate thought and perceptual experimentation. In this sense, *Natural Causes* is itself a psychological event. It is not a mere platform for the presentation of material to be processed, but rather, it subverts the nature of that processing itself.

Three Lines of Attack

What makes this book powerful is that it comes at the educated reader on three levels. The first level is a set of critiques of familiar fads, fashions, abuses, and idiocies. Audience consent is expected and probably received. Movements and cults surrounding diets, exercise, yoga, positive psychology, and alternative medicine have already been roundly criticized for not working better than science-based routines and interventions or better than placebos. Still, Ehrenreich gives a fresh perspective by tracing their popularity to cultural patterns ingrained in post-Reformation Western individualism. For all the rhetoric of har-