

PSYCHOLOGY

Our Unconscious Mind

Unconscious impulses and desires impel
what we think and do in ways
Freud never dreamed of

By John A. Bargh





John A. Bargh is a professor of psychology at Yale University. His Automaticity in Cognition, Motivation, and Evaluation Lab at Yale researches unconscious influences on behavior and questions such as the extent to which free will really exists.



WHEN PSYCHOLOGISTS TRY TO UNDERSTAND

the way our mind works, they frequently come to a conclusion that may seem startling: people often make decisions without having given them much thought—or, more precisely, before they have thought about them *consciously*. When we decide how to vote, what to buy, where to go on vacation and myriad other things, unconscious thoughts that we are not even aware of typically play a big role. Research has recently brought to light just how profoundly our unconscious mind shapes our day-to-day interactions.

One of the best-known studies to illustrate the power of the unconscious focused on the process of deciding whether a candidate was fit to hold public office. A group of mock voters were given a split second to inspect portrait photographs from the Internet of U.S. gubernatorial and senate candidates from states other than where the voters lived. Then, based on their fleeting glimpses of each portrait, they were asked to judge the candidates. Remarkably, the straw poll served as an accurate proxy for the later choices of actual voters in those states. Competency ratings based on seeing the candidates' faces for less time than it takes to blink an eye predicted the outcome of two out of three elections.

For more than 100 years the role of unconscious influences on our thoughts and actions has preoccupied scientists who study the mind. Sigmund Freud's massive body of work emphasized the conscious as the locus of rational thought and emotion and the unconscious as the lair of the irrational, but contemporary cognitive psychologists have recast the Freudian worldview into a less polarized psychological dynamic. Both types of thought processes, it turns out, help us adapt to the protean demands of a species that survives by marshaling the mental firepower to hunt a Stone Age mastodon, face off in a Middle Ages joust or, in the new millennium, short Apple's stock.

IN BRIEF

Decision making often occurs without people giving much thought to how they vote, what they buy or where they go on vacation and to how they make a myriad of other minor and major choices.

Unconscious processes dictate the way we deliberate and plan our lives—and for good reason. Automatic judgments are essential for dodging an oncoming car or bus.

Behaviors governed by the unconscious go beyond looking both ways at the corner. Embedded attitudes below the level of awareness shape many of our attitudes toward others.

Sigmund Freud meditated on the meaning of the unconscious throughout his career. These newer studies provide a more pragmatic perspective on how we relate to a boss or spouse.

Post-Freudian psychology has set aside the id and ego for a more pragmatic take on what defines our unconscious self. Nobel Prize laureate Daniel Kahneman has described the modern distinction between the automatic and the controlled. In his best-selling book *Thinking Fast and Slow*, Kahneman characterized automatic thought processes as fast, efficient and typically outside the realm of conscious awareness, making them devoid of deliberation or planning. They require only a simple stimulus: the words on this page, for instance, connect effortlessly in your mind with their meaning. Controlled processes are the opposite. They require purposeful and relatively slow engagement of conscious thought—picture the labored effort that goes into doing your tax returns.

Similar to Freud's primal id and controlling ego, the automatic and controlled systems complement each other yet also, at times, conflict. You need to react without deliberation to dodge an oncoming bus but also need to check yourself from throwing a punch at the reckless bus driver.

Snap judgments—relatively automatic thought processes—abound in our daily life—and for good reason. Outside of the relatively small number of individuals any one of us knows really well, most people we interact with are strangers we might never see again—while standing in line at the bank, say—or others we come across in the course of their jobs—cashiers, taxi drivers, waiters, insurance agents, teachers, and so on. The default unconscious perception generates expectations about behavior and personalities based on minimal information. We expect waitresses to act a certain way, which is different from what we expect of librarians or truck drivers. These expectations come to us immediately and without our thinking about them, based only on a person's social place.

The unconscious way we perceive people during the course of the day is a reflexive reaction. We must exert willful, conscious effort to put aside the unexplained and sometimes unwarranted negative feelings that we may harbor toward others. The stronger the unconscious influence, the harder we have to work consciously to overcome it. In particular, this holds true for habitual behaviors. An alcoholic might come home in the evening and pour a drink; a person with a weight problem might reach for the potato chips—both easily casting aside the countervailing urge toward restraint.

Understanding the tug the unconscious exerts on us is essential so that we do not become overwhelmed by impulses that are hard to understand and control. The ability to regulate our own behavior—whether making friends, getting up to speed at a new job or overcoming a drinking problem—depends on more than genes, temperament and social support networks. It also hinges, in no small measure, on our capacity to identify and try to overcome the automatic impulses and emotions that influence every aspect of our waking life. To make our way in the world, we need to learn to come to terms with our unconscious self.

GUT REACTIONS

WHEN WE MEET SOMEONE NEW, we form a first impression even before striking up a conversation. We may observe the person's race, sex or age—features that, once perceived, automatically connect to our internalized stereotypes about how members of a particular group are apt to behave. These assumptions about the social group in question—hostile, lazy, pleasant, resourceful,



DISCONNECT: A slow response in naming the colors of words that indicate a different color tests for unconscious distractions.

and so on—are often incorrect for the particular individual from that group standing in front of us, someone who usually has done nothing to merit any of these impressions, bad or good.

These reflexive reactions often persist, even if they run counter to our conscious beliefs. Many people who say they have a positive attitude toward minority groups are astonished when social scientists reveal contradictions with a simple test. The Implicit Association Test, for instance, calls on test subjects to characterize objects on a computer screen according to qualities they possess—a puppy may be good, a spider bad. Afterward, the test taker sees a series of faces of people of different races and is asked to classify them as white, black, and so forth.

Here's the trick: the same buttons are used for the initial evaluation and the group classification tasks. The left button might be for making both *good* and *white* responses and the right one for both *bad* and *black*. In a later trial, the button labels are reversed so that the left button records good objects and black faces and the right corresponds to bad and white. A white respondent would reveal underlying prejudice if the task is easier—measured by a faster response—when the buttons are configured for *bad/black* than for the *good/black* condition. Many people who hold positive conscious attitudes toward minority groups and who think of themselves as being motivated to treat all people fairly and equally are nonetheless surprised by the greater difficulty indicated by a slower pressing of the *good/black* buttons.

Why Some Social Science Studies Fail

Reports have recently documented that some of the original studies demonstrating unconscious effects on social behavior—research, for instance, that showed that people walk more slowly after hearing words associated with the elderly (“Florida” and “bingo”)—could not be replicated when the procedures were repeated in new studies. The accounts, however, have generally neglected to mention that many other studies published over the past decade or so have successfully reproduced original findings on unconscious thought and behavior and have also extended this line of investigation in new directions.

These studies have confirmed that an unconscious gesture or a casual word—“priming” to a social psychologist—can change a person’s behavior. They provide evidence that subliminal motivations make use of the same mental processes—working memory and executive function—as used in conscious acts of self-control and that people often misunderstand the actual underlying reasons for their behavior when influenced by unconscious impulses.

Studies with replication failures have generally neglected to incorporate procedures, learned through earlier trials, that increase the likelihood of pinpointing an unconscious influence on a person’s behavior. In many of the original studies,

words and verbal material were used to prime a behavior. Studies that have avoided the use of verbal cues and instead brought to bear more natural and realistic stimuli that trigger a behavior, such as photographs of victorious athletes, have met with more success. These stimuli are the kinds that matter most for unconscious priming effects in our daily lives.

Further support for this area of social psychology has come from neuroscience studies of unconscious effects that use brain-imaging technology to replicate and confirm the impact of priming. The imaging research has added to our understanding of how unconscious effects occur when different brain regions are activated

when making judgments or undertaking certain behaviors. For example, brain areas that detect whether a surface is “rough” or “smooth” are highlighted in images when a person has difficulty or not—a rough or smooth time—interacting with someone else, and the same midbrain regions that respond to physical warmth are shown to also respond to the friendliness and generosity that characterize social warmth.

The question is not whether various unconscious effects on judgments and behaviors are real and can be replicated—because they are and often have been—but rather why some researchers reproduce these effects and others do not. This question is important to advancing our knowledge of how unconscious social influences operate, and it draws needed attention to the precise contexts and conditions needed to produce thoughts and behaviors from unconscious priming cues. More work remains. Still, the overall body of evidence collected so far clearly shows that unconscious influences on judgment, emotion, behavior and motivation are of practical importance both to society as a whole and to the everyday life of its members. —J.B.

These types of reactions complicate interpersonal relations and fair treatment in the courts, the workplace and schools precisely because they originate in the unconscious mind. Because we are not aware of them, these feelings tend to get mixed up in whatever we are consciously focusing on at the moment. Instead of recognizing an unacknowledged racial bias, we divert our attention to some negative feature or characteristic about the person before us. A college admissions officer might zero in on a less than stellar grade in an otherwise solid medical school application from a prospective minority student without realizing those same negative features are not weighted so heavily for the other applicants.

Although research on unconscious social perception has often focused on stereotypes and prejudice, in reality the scope of this line of inquiry is much broader. In general, people have a hard time untangling the sources of various positive and negative feelings and are prone to misunderstanding their true causes. In a classic demonstration of this effect, the current day’s weather affected how people being interviewed over the telephone rated how well their entire life had gone up to that point—they were more likely to characterize their entire life as sunny when the weather was nice. Conscious awareness of this

effect, moreover, brought about an immediate change. When the interviewers called attention to the weather outside, the feelings colored by the presence of either sun or clouds no longer had an effect.

OUT OF CONTROL

UNCONSCIOUS THOUGHTS and feelings influence not only the way we perceive ourselves and the world around us but also our everyday actions. The effect the unconscious has on behavior has provoked debate among psychologists for decades. For a good part of the 20th century, B. F. Skinner and the behaviorist school of psychology argued forcefully that our actions were entirely under the control of what we saw, heard and touched in our surroundings and that conscious intent played no role. This idea was embodied in the classic experiment in which a rat learns through trial and error that pressing a bar results each time in the animal receiving a food pellet. In the Skinnerian worldview, most of what we do translates into a more sophisticated variation on the theme of pressing the bar with one’s snout—we just need to press the equivalent of the correct bar—perhaps sliding the dollar bill in the candy machine—to get what we want.

Research in the 1960s debunked Skinner’s behaviorism. Yet

the opposite extreme, that behavior is always under intentional control and never directly triggered by environmental cues, is equally false. Merely watching or listening to someone else can make us behave in ways that we do not even realize.

People have a natural tendency to mimic and imitate the physical behavior of others—their emotional expressions, arm and hand gestures, their body postures. These impulses appear throughout the natural world in the fluid way that schools of fish, herds of antelope and flocks of birds coordinate group behavior so that they move almost as if they were a single organism. In humans, the tendency to spontaneously mimic and imitate what others around us are doing has been observed in very young infants and toddlers, and for nearly a century psychologists have argued that being a copycat helps us learn language and other behaviors from our parents.

Imitation, moreover, does not disappear with childhood. In what is known as the chameleon effect, you might find yourself taking on the posture and other physical behaviors of someone you have just engaged in conversation at a party—the crossed legs, the folded arms, the same head scratching. The mimicry carries on until you decide to refresh your drink and seek out a new interlocutor whose stance and gestures you then take up, like a chameleon blending in with its environment. Conforming to the same behaviors of others would seem to make adaptive sense, especially when you do not yet know what is the appropriate thing to do in a given social situation.

The advice “when in Rome, do as the Romans do” makes sense because others are unlikely, in general, to be engaging in unsafe or socially inappropriate behaviors. And as is shown in research by Paula Niedenthal, now at the University of Wisconsin–Madison, Robert Zajonc of the University of Michigan and their colleagues, a fascinating long-term effect of this propensity toward imitation turns up in couples coming to more closely resemble each other the longer they are together, presumably because on a daily basis they unconsciously assume the other person’s facial expressions and postures.

Imitation fosters a social mind-set without the need for providing an explicit road sign that instructs people in what to do next: waiting patiently in a long line encourages others to do the same; holding a door for a neighbor, curbing one’s dog and not littering put others in a frame of mind to do the right thing. Unconscious imitation fosters empathetic feelings toward others, a “social glue” that creates a sense of closeness even among total strangers. The strongest form of mimicry results when two or more people engage in the same activity at the same time: armies marching or churchgoers singing a hymn together. Research on behavioral synchrony has shown it has the effect of increasing cooperation even if the individuals involved have never met before.

Unfortunately, the natural tendency toward imitation cuts both ways. As psychologist Kees Keizer of the University of Groningen in the Netherlands and his colleagues found in their field of research, one misdeed leads to another. The researchers placed graffiti on an alley wall, which led to an increase in littering of pamphlets that were placed around the handlebars of bikes parked along the alley. Fighting graffiti and other small, nuisance infractions, it turns out, can have a large impact on improving the quality of urban life. This research supports the “broken windows” theory championed most famously by former New York City mayor Rudy Giuliani, who in the mid-1990s promoted the

strict enforcement of laws against minor infractions—littering, jaywalking and vandalism; the dramatic drop in crime during this period has been attributed, in part, to this policy.

A tendency to copy others often extends beyond the imitation of mere gestures and facial expressions to taking on facets of someone else’s personal identity. When we meet or are reminded of an acquaintance, an unconscious mental process may begin that “primes” us to initiate behaviors characteristic of that individual. Some studies have shown that college students exposed to descriptions associated with the elderly—“Florida”, “gray”, “bingo”, and so on—subsequently walk down the hall more slowly after the experiment is finished, in line with the stereotype of the elderly as slow and weak. Similarly, “priming” words or images related to the stereotypical idea of a nurse leads to greater helping behavior, and cuing stereotypes associated with politicians leads to more long-winded speeches. All these effects appear to occur unconsciously, without the participants being aware of how their behavior has been influenced.

Investigations into what social psychologists call stereotype threat have shown that merely bringing to mind a stereotype about, say, race or gender in a member of a group that is the target of such biases may affect performance in the school or workplace. Claude Steele of Stanford University has documented the negative impact on test performance when a minority student, before the exam begins, is asked to check off what racial or ethnic group the student belongs to. Nalini Ambady, now at Stanford, has demonstrated that even preschool girls at a Harvard University day care do worse on simple math tests if they are first subtly reminded of being female. Widely held positive stereotypes have the opposite effect. In the same study with preschool girls, Asian-Americans did better than average if they were reminded of their ethnic background but faltered if the priming exercise emphasized their gender instead.

Recently controversy has emerged over an inability to reproduce the results of some priming studies. The reasons that the studies could not be repeated are complex and depend heavily on the methods used to carry them out—subtleties explained further in the accompanying box on page 00.

Unconscious influences, in fact, are not always effective in motivating what we do. Many people are familiar with the idea of subliminal advertising in movie theaters—having the words “eat popcorn” flashing imperceptibly on the screen was once thought to cause concession stand sales to boom. Worries about subliminal advertising emerged in the 1950s with Vance Packard’s best seller *The Hidden Persuaders*. As it turned out, these reports were mostly bogus, but many people still wonder about the possibility of subliminal messages influencing consumer behavior. Recently, indeed, research has consistently shown that if a person is already motivated to take some action—quenching thirst, for instance—a subliminal message favoring one brand of beverage over others can be effective.

Regular advertisements, unencumbered by hidden messaging, are powerful influences in their own right. In one new study examining regular television ads, participants watched a five-minute segment of a popular comedy show and were given a bowl of Goldfish crackers. The presence of any food ads during commercial breaks substantially increased consumption of the snack by participants. The food ads primed snacking absent any subliminal subterfuge. The error we often make is to assume



that we can control the effects an ad has on our behavior just because we are fully aware of its content.

EMBODIED COGNITION

SOME OF THE RESEARCH on the unconscious and behavior focuses on the way the surrounding physical environment influences our psychological state of mind. In the 1980s a series of experiments by Fritz Strack, now at the University of Würzburg in Germany, and his colleagues showed that unconscious feedback from their own incidental facial expressions—smiles or frowns—sufficed to cause people to register the value judgment of liking or disliking an object that was in their field of view. Study participants held pencils either in their teeth—activating the smile muscles—or their lips—flexing frown muscles. The physical positioning of the facial muscles produced the corresponding psychological state.

More recent studies have shown that a host of physical actions and sensations trigger psychological states that are metaphorically related to those behaviors and feelings. Remembering a past incident in which you hurt someone emotionally may cause you to have a stronger desire to help and cooperate with others in a friendly way—a compensation for the bad deed. In one well-known study, after being prompted to recall a guilt-inducing behavior, participants had to wash their hands, ostensibly to help prevent the spread of the flu virus within the room where the experiment took place. The physical act of hand washing seemed to “wash away” guilt. Any lingering friendly or helpful tendencies vanished in the group that had gone through the scrubbing exercises compared with others who had not washed up—a phenomenon dubbed the “Macbeth effect,” after Lady Macbeth’s compulsive hand-washing rituals in the eponymous Shakespeare play.

In similar fashion, protecting against disease appears to satisfy abstract social or political needs. In one study, politically conservative participants just inoculated against the H1N1 flu virus reported more favorable attitudes toward immigrants compared with those who had not received a shot, as if protection from invasion of the flu virus carried over to a perception that newcomers were well-meaning and not somehow invading and despoiling their adoptive culture.

Metaphors carry over to the way we describe people we routinely encounter. Everyone knows the meaning of a “close” relationship or a “cold” father. One recent theory, conceptual scaffolding, asserts that we use these metaphors so readily because the abstract version of the mental concept is built on and strongly associated with the physical world we inhabit. In social science experiments, people who clutch a hot coffee cup for a brief time form impressions of others as being “warmer,” more friendly and more generous than if they hold, say, an iced coffee. Related studies on the way physical experiences unconsciously influence judgment and behavior in metaphorical ways have revealed that having participants sit on hard chairs during a negotiation causes them to take a “harder” line and compromise less than do those sitting on soft chairs. And when holding something rough, they judge an encounter as more awkward and not having gone smoothly.

We tend to unconsciously evaluate nearly everything we come into contact with in a crude one-or-the-other manner. The unconscious, automatic response even translates into our basic movements, our inclination to approach or avoid an object. Clinical psychologist Reinout Wiers of the University of Amsterdam recently developed a successful therapeutic intervention for alcoholism and substance abuse based on this insight. In treatment, patients had to respond to images that represented alcohol abuse in various ways by repeatedly pushing a lever away, without any further instructions about how to evaluate the meaning of the pictures. Compared with a control group of patients, those who responded by pushing away the lever showed markedly lower relapse rates a year later, as well as more reflexively negative attitudes toward alcohol. The unconscious connection between making muscle movements associated with avoidance caused the development both of negative psychological attitudes and of a visceral gut reaction that helped the patients forgo the temptation to imbibe away from the clinic.

FREUD REDUX

THE MOST RECENT EXPERIMENTAL WORK deals with unconscious motivations and goals—the basic question of “What do people want?”—which was, of course, a central theme of Freud’s long career. The modern theories about what drives behavior differ from the one put forward by the Austrian neurologist because this thinking derives from studies on groups of average people instead of case studies of abnormal individuals. They also point to a single psychological system that we all possess that can operate in both conscious or unconscious mode, unlike Freud’s unconscious, which plays by its own rules, wholly separate from those that drive conscious activity.

In fact, in the modern psychology of desire, researchers have found that whether or not we are conscious of a particular goal we have set for ourselves, the way we go about pursuing that goal is very similar. In research on this phenomenon by Mathias Pes-

siglione and Chris Frith, both then at the Wellcome Trust Center for Neuroimaging at University College London, study participants were asked to push a lever as fast as they could when prompted. Before each trial, they received either a conscious or subliminal cue about the reward they would receive. Higher incentives (British pounds versus pence) produced faster pushes, whether they were consciously perceived or not. Moreover, brain imaging revealed the same incentive-sensitive brain regions switch on in both the conscious and the subliminal reward trials. This and other studies suggest that an unconsciously perceived stimulus may suffice to cause someone to actually pursue a goal without any awareness of how it originated—no conscious deliberation or free will required.

Our unconscious mind may not only nudge us to choose a particular option, but it may help muster the necessary motivation to actually achieve it. Psychologists have long known that people given power in a social science experiment often exhibit selfish and corrupt behavior, putting personal interests first. The urge to exert power within a group often reveals itself through a series of subtle, physical cues of which we are unaware. Participants in one study randomly assigned to sit in a professor’s desk chair showed less concern with what other people thought of them and had less inhibition about expressing racist and other antisocial sentiments, compared with participants seated instead in a student’s chair in front of the desk.

Fortunately, many people’s goals are directed toward the welfare of others, as is the case for parents who put their child’s interests above their own. If power has the general effect of unconsciously activating important personal goals, these “communally” oriented individuals should react by being more likely to help others and less apt to focus on themselves. Indeed, studies have shown that power causes these individuals to assume more of an altruistic perspective and leave less for others to do, all again without any awareness of their motivations. These individuals also become more preoccupied with what others think of them and display less of a tendency to hold racial biases.

Freud spent countless thousands of words in providing explanations as to why our unfulfilled wishes express themselves in the imagery and stories that populate our nightly dreams. The latest research provides a more pragmatic perspective on how thought and emotion just below the surface of our awareness shape the way we relate to a boss, parent, spouse or child. That means we can set aside antiquated notions of Oedipus complexes and accept the reality that the unconscious asserts its presence in every moment of our lives, when fully awake as well as when absorbed in the depths of a dream. ■

MORE TO EXPLORE

Automaticity in Social-Cognitive Processes. John A. Bargh et al. in *Trends in Cognitive Sciences*, Vol. 16, No. 12, pages 593–605; December 2012.

The Selfish Goal: Autonomously Operating Motivational Structures as the Proximate Cause of Human Judgment and Behavior. Julie Y. Huang and John A. Bargh in *Behavioral and Brain Sciences* (in press).

FROM OUR ARCHIVES

Freud Returns. Mark Solms; May 2004.

The Political Brain. Michael Shermer; *Skeptic*, July 2006.

Armor against Prejudice. Ed Yong; June 2013.