

Essay 5.1

The Unconscious Sources of Motivation and Goals

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Can we control our motivations? We believe the answer is yes, even for those motivations that operate unconsciously—once we become aware of them of course. Indeed, we consider it part of our public responsibility as researchers in motivation science to inform the general public as much as possible about these unconsciously operating motivations, as otherwise they would not know about them and be able to control them if they wish. It takes science to go beyond common sense and the superficial appearances of life.

Common sense is a useless guide when it comes to invisible, unheard, and unfelt phenomena. Common sense tells us the earth is flat and that the sun orbits around the earth. The same issue applies to unconscious mental processes. As an analogy, consider that we are consciously aware of only a small fraction of the complete electromagnetic spectrum, and so our modern knowledge of the existence of gamma rays, x-rays, microwaves, and radio waves came *only* from scientific investigation. It took science to discover what was not readily available to our senses, and so, too, must we, as researchers in *motivation science*, look beyond the superficial, the information readily available to everyone else, and objectively test for the less obvious unconscious processes as well.

In this essay, we discuss the nature and operation of unconscious motivations and goal pursuit, and then, in a companion essay (Essay 5.2 in this volume, by Gollwitzer and Bargh), we deal more directly with how people can control both their consciously and their unconsciously operating goal pursuits.

On logical grounds, it must be the case that our goals and motives operate unconsciously more often than we realize. Because our autobiographical memory contains only our conscious experiences, our memory banks are filled with the times we consciously intended to get something done and not at all with the times when unconscious goals guided our judgments and behavior. Thus, when we use the availability heuristic to estimate how much of our motivations operate consciously versus unconsciously, the former will be vastly more available to us than the latter. As a consequence, our intuitions and “common sense” regarding this question will be far off the mark.

How Do Unconscious Influences Operate on Motivation and Goal Pursuit?

Over the past 30 years, researchers of both conscious (e.g., Locke & Latham, 2002) and unconscious (e.g., Bargh & Gollwitzer, 1994) goal pursuits have come to the same conclusions. Namely, not only do goals and motives operate in both conscious and unconscious modes, they also do so in the same way, using the same underlying brain regions, and producing the same distinctive behavioral phenomena (Bargh et al., 2001; Chartrand & Bargh, 2002; Chen et al., 2020). Like consciously pursued goals, unconscious goals use working memory capacity and so can distract attention away from the person's focal task (Marien et al., 2012). When active, they change the evaluation of everything, even who we consider our best friends, depending on how that object or event helps or hinders the goal attainment (Ferguson & Bargh, 2004; Fitzsimons & Shah, 2008). Reward cues such as money or an attractive other person activate reward centers of the brain whether the individual is aware of the presence of that cue or not (see review in Bargh, 2021).

And recently, and remarkably, the same detailed set of motivational principles developed out of decades of research on exclusively conscious goal pursuit (*goal setting theory*; Locke & Latham, 2002) in real-life organizational settings, has now all been found to occur in unconscious goal pursuits as well (Chen et al., 2020). These principles include higher performance after an achievement prompt, the greater effect of setting concrete versus abstract goals, and the higher probability of activating a person's important versus less important goals, and they extend beyond individual performance to the improvement of teamwork and collaborations as well. So, too, with the set of signature qualities of motivational states first identified by Kurt Lewin, such as perseverance in the face of obstacles and resumption of incomplete goal pursuits (Bargh et al., 2001; Chartrand & Bargh, 2002). The overwhelming similarity between conscious and unconscious goal pursuits uncovered by psychological science, and more recently by neuroscience, has emphatically disproved the Freudian notion of a separate and secret unconscious mind playing by its own rules.

There are two main ways in which unconscious influences on our intentions and goals operate. One is through unconscious, unfelt influences on our conscious choices about what to do. These unconscious influences are often *misattributed* to whatever the person is consciously focusing on at the time. An early, and still one of the best examples of this is the classic “wobbly bridge” study by Dutton and Aron (1974). Male hikers halfway across a rickety bridge hanging over a deep canyon answered some survey questions from a young female researcher; they were more likely to call her back later to get the results of the survey than were hikers on a different, less scary bridge. Dutton and Aron had predicted that the greater arousal (anxiety) caused by the rickety bridge would be misunderstood by the male hikers as arousal caused by their evident attraction to the female researcher.

Even important, consequential decisions are subject to these unconscious influences. In an ambitious study of 26 major stock markets around the world, and over a 15-year period, Hirschleifer and Shumway (2003) showed that stock prices go up on sunny days and down on cloudy days. How could this happen? Once again, the positive mood from the nice weather and the negative mood from the poor weather were misunderstood by the financial analysts as caused by reactions to the stocks they are consciously focusing on that morning. Consciously produced intentions to buy or sell stocks involving billions of dollars were pushed one way or the other by unconscious influences.

Of course, not being aware of the actual causes and influences on our behavior does not stop us from making perfect sense of that behavior. The stockbrokers firmly believe their buy and sell decisions are based on sober calculations of a company's value and expected future performance; the hikers firmly believe their attraction toward the researcher is all about her personality and looks. The constant operation of unconscious motivations behind the scenes leaves us in an explanatory vacuum, and the confabulations we come up with, while incorrect, still have important consequences for our self-understanding, our preferences, and our choice of activities moving forward (see Parks-Stamm et al., 2010). What is more, at the same time these motivations are operating unconsciously in us, their active state makes them more likely to be used (i.e., accessible) in the perception and interpretation of the behavior and goals of others—resulting in *projection* onto other people of the very motives we are blind to in ourselves (Kawada et al., 2004).

The second way that motivations can operate unconsciously is if the goal itself is activated by features of and events in the outside world (via our perception of those events) instead of by internally generated intentions (Bargh, 1990). Without the involvement of the conscious act of intention formation in this process, the individual has no idea that this particular motivation is guiding them. How can our goals and motives be activated without a conscious intention? This happens in the same way that other mental representations become active by relevant external events and objects in the course of our ongoing perception of the outside world. We know immediately something is a tree, a book, a friend, without having to deliberately figure it out based merely on the sensation of the relevant external information. However, more abstract and inclusive representations than trees and books, such as those for types of social groups, also come to be directly activated by the mere perception of their corresponding features. Decades of social psychological research has shown, for example, that stereotypes and unconscious biases are triggered by the mere perception of the person's race, ethnicity, age, gender, and so on. Through repeated cultural association of certain (usually minority) social groups with derogatory personality characteristics, conveyed often subtly but relentlessly from media, peers, and even political leaders and authority figures, these group features (racial, gender, or age related, for example) become automatically associated with the cultural stereotype—and this happens as young as 4 or 5 years of age (see Bargh, 2017).

The natural and effortless perception of the person's physical features is enough to activate the rich internal stereotype about that person's social group, which goes far beyond the physical features (face, skin color) to generate assumptions and behavioral tendencies (such as hostility) toward that individual. What happens then is that this unconsciously generated input, which seems as natural as any other form of direct sensory perception, is used as the basis for our conscious goals and choices regarding the individual. We may well react with greater hostility or mistrust to an outgroup member and interpret ambiguous behavior or expressions in a more negative than positive manner (e.g., Bargh et al., 1996, experiment 3). Consciously, we are doing what we always do: base our choices and behaviors on our construal and interpretation of the current situation (Wilson, 2002) but without realizing the bias and contamination of our construal by these unconscious stereotypic influences.

In the same way, rich and complex goal representations can also be activated by external information directly relevant to that goal—such as words that are synonyms of the goal (Bargh et al., 2001) and photographs depicting the achievement of a specific goal (such as a woman triumphantly crossing the finish line of a marathon). In the years since our original goal-priming studies (Bargh & Gollwitzer, 1994), more than 350 (verbal) goal priming studies involving many thousands of participants have been conducted, and a recent meta-analysis of these studies (Weingarten et al. 2016) concluded that the activation (priming) and subsequent unconscious operation of task goals is a robust and reliable effect. A separate meta-analysis of hundreds of studies of religious priming on prosocial and moral behavior also revealed a strong and reliable effect (Shariff et al., 2016). Moreover, a rigorous series of experiments with more than 1,000 participants involving subliminal primes of risky behavior demonstrated significant effects on gambling behavior in a blackjack game (Payne et al., 2016).

In the course of their meta-analysis, Weingarten et al. (2016) discovered that the effects of the unconsciously activated goal were significantly stronger the more important the primed goal was to the participant (e.g., doing well on an ostensible intelligence test vs. counting backwards accurately). That same finding was reported in a new meta-analysis of unconscious goal priming effects in real-life organizations (Chen et al., 2020). A key aspect of these field studies is that the primes are often part of the normal day-to-day activity of the organization—for example, the CEO of a large southwestern US customer service firm, in his regular Monday morning email to his employees, embedded words related to high performance and achievement to some workers but not others, and the primed group significantly outperformed the control group over the next 5 days. Other kinds of motives, such as cooperation and learning, have also been successfully primed to influence employee behavior, with outcomes such as improved teamwork, creative solutions to problems, and higher customer satisfaction in real-life business operations.

We emphasize two key insights from the large meta-analyses of the laboratory and the field goal priming research. One is that in the translational research

conducted outside of the laboratory, the goal priming effects lasted up to a full week—in the CEO Monday morning email study, for example, and the “marathon winner” achievement priming effect in an earlier study of charity fundraising by telemarketers. It is not the case that goal priming effects are necessarily short-lived, especially when the prime itself is present in the person’s environment on a daily basis. The prior laboratory research may have given this impression, but this is because the ethics of experimentation on human participants requires that they leave the study no different than they arrived.

The second important insight is that the more important or “everyday-life” the goal being activated, the stronger the goal priming effects. Chen et al.’s (2020) meta-analysis found that goal priming in real-life settings produced stronger effects than in laboratory studies. Assuming that employees’ actual work- and performance-related goals are more important to them than the tasks assigned to them in psychology experiments, this finding converges with that of the Weingarten et al.’s (2016) meta-analysis of verbal goal priming in laboratory studies, which also found that the priming effects were stronger the more important the goal was to the participant. If anything, then, laboratory findings of unconscious motivation *underestimate* the strength of those effects in real-life situations.

The Two Sources of Unconscious Motivations Within the Individual

The idea of unconscious motivations should not seem mysterious given all of the work in our companion fields of evolutionary biology and evolutionary psychology, which have shown extensively that unconscious motivations exist across all animal species (Mayr, 1976): even single-celled paramecia have basic approach and avoidance motivations (Schneirla, 1959). So, too, humans possess several basic evolved unconscious motivations such as primary ones for survival and safety, disease avoidance, and reproduction (attraction and mating). Evolution and natural selection is one source—and cognitive psychology has identified another by demonstrating how complex attentional and response goals gradually recede into the “subconscious” over time (Jastrow, 1906) given frequent and consistent use of those goals in the same contexts (Schneider & Fisk, 1984). This seems a highly adaptive arrangement because, given the limits on how much information we can keep in our conscious awareness (short-term memory) at any given time, it is important to spare our conscious attention as much of the burden of daily operations as we can—as William James (1890/1950) stated, consciousness drops out of any process where it is not needed.

How, then, do these motivations become able to operate unconsciously? One way is through considerable practice and experience. The component subgoals of any complex skill, such as driving a car, are initially difficult and attention-consuming but with considerable practice they require less and less conscious

attention and guidance (Schneider & Fisk, 1984). Eventually they all operate relatively automatically and unconsciously with minimal conscious monitoring and guidance. We perform so many of these complex skills on an everyday basis that we take them for granted. George Miller, one of the founders of cognitive science, once remarked that if our motor skills did *not* operate unconsciously and efficiently we wouldn't even be able to get out of bed in the morning (Miller et al., 1960) And the sine qua non of these unconscious skills is language production—try this out for yourself, just be self-aware the next time you are having a conversation with someone, especially a heated or excited discussion, and you will marvel at the unconscious way your thoughts are instantly converted into words coming out of your mouth, with no planning or strategy or sometimes even any foreknowledge of what you are going to say next. One of the great cognitive science papers of the past 40 years is Gary Dell's (1986) model of exactly how this miracle occurs.

Another and quite important source of unconscious motivations is our long human evolutionary history. These are our deep human primary motivations, such as for safety and survival, food and shelter, and disease avoidance and disgust. Recent research has demonstrated that these basic, innate motivations underlie much of our everyday life to a surprising extent, such as our attitudes, behavioral choices, and consumer behaviors. Political attitudes such as conservatism and liberalism are found to shift back and forth depending on whether the person feels threatened versus safe. Studies with widely different methodologies—brain imaging, physiological responses, longitudinal studies of preschool children into their 20s—all converge on the conclusion that conservatives have a heightened concern with physical safety than do liberals (see Bargh, 2017, pp. 34–39). Adult conservatives had stronger fear responses to startle stimuli at age 4 and larger amygdala (roughly, the fear-processing region of the brain) than do liberals, and the average person changes their social and political attitudes in the conservative direction when threatened.

Interestingly, the complementary effect occurs when conservatives are made to temporarily feel physically safe via a guided imagination exercise (the superpower of invulnerability to physical harm, as when bullets bounce off Superman's chest). After this thought induction, conservative participants' attitudes toward social issues such as legalization of marijuana and same-sex marriage, and toward social change in general, become indistinguishable from the liberal participants (Napier et al., 2018).

Other evolved primary motivations influence our goals, attitudes, and behavior in similar, unconscious ways. Hungry people buy and take more of everything, not just food (Xu et al., 2015) because the underlying motive of resource acquisition triggered by hunger unconsciously guides behavior in our modern world with easy one-click purchasing on Amazon and everything we'd ever need in a single store (Walmart). The underlying evolved need or motive influences our desire and want for these items to acquire, and then we act accordingly. Just

as hunger underlies modern resource acquisition, the primary motive of disease avoidance influences our political attitudes toward immigrants—the deep concerns about viruses entering our body partially underlies our conscious attitudes toward immigrants coming into our country—when we have a flu shot or wash our hands (and thus feel safer from the flu) so, too, do we feel safer and more positive toward immigration (Huang et al., 2011). The worry about disease causes us to worry about immigration because the basic circuit or system involved in disease avoidance has been coopted by the metaphorically related immigration (into our body politic) threat and so generates the same feelings of unease and anxiety, producing a more negative “reasoned” attitude toward immigrants.

Innate social motivations to cooperate with others also shape our behavior in unconscious ways. We know these are innate because toddlers as young as 18 months are primed by photos of friendly dolls to cooperate with and help the experimenter at three times the rate that other toddlers do who have not first seen the friendly dolls (Over & Carpenter, 2009).

Why Do We Underestimate Our Unconscious Motivations?

Given the pervasive influence of these primary (evolved) and derived (from extensive, consistent use) unconscious motivations in everyday life, why do we underestimate their role? This happens, we believe, for two reasons: first, because we are so good at generating plausible reasons to explain our actions when we do not have access to the true causes (Gantman et al., 2017; Parks-Stamm et al., 2010) and, second, because these unconscious guides operate so effectively and in the background, outside of the need for our conscious choice and guidance. But they are present and vigilant all the same. It is when they conflict and overrule our conscious intentions that we are best able to appreciate that they are the power behind the throne of our conscious lives. When we have our friends or important guests over for dinner, and we are carrying the hot dish from the oven to the table, our very strong conscious intention is to not drop the dish and make a fool of ourselves. But no matter how much we want to impress and not embarrass ourselves in front of our guests, we will nevertheless drop that dish and spill the dinner all over the floor if we do not use a thick enough mitt and the burning pain (tissue damage) becomes too great (Morsella, 2005).

The next time you travel to a scientific conference, ask the audience at your talk or your colleagues in the halls what they think was your most important goal on the trip. Nearly all will say something like “to give a good talk,” “to see colleagues and friends,” etc. In our experience, no one has yet answered “to come home safely to your family.” But when you mention this as the truly most important goal, trumping all others, there is an instant flash of recognition and instant and complete agreement from your audience. Ironically, perhaps, these goals are indeed the most important goals of all, yet not typically part of our conscious experience. Why so? It is

precisely because we are constantly pursuing them unconsciously and effortlessly—and so do not *need* to pursue them, under most circumstances, consciously and deliberately. That they are mainly, and constantly, *unconsciously* pursued does not change in the least the fact that they are the most important, constant, and powerful motivational guides of our everyday lives.