

In Search of the Prize: Is Conscious Awareness a Good Thing?

A review of



The New Unconscious

Edited by R. R. Hassin, J. S. Uleman, & J. A. Bargh

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Robert D. Mather

Jerri C. Jones

University of Central Oklahoma

University of Central Oklahoma

Why do we do things? As humans, we are uniquely equipped to reflect upon our own existence. We constantly strive to understand why others behave as they behave as well as to understand how our own actions bring about actions of others (Heider, 1958). We commonly make decisions and do so with the widespread belief that more awareness and more thought lead to better decisions (Dijksterhuis & Nordgren, 2006). It is intuitive among humans—if you want to make a good decision, you must think really hard. Otherwise, people would get married on first dates and never make it to a second real estate showing. If we took awareness from decisions, we'd be left with a society in which people close-mindedly evaluated each potential mate, each house, each decision as “yes/no” rather than comparing options, for how can we compare options without awareness? Humans would be like other animals—breeding and feeding without thought to the consequence. Awareness *must* be what separates us from other animals, which means awareness *must* be a “good thing,” right?

Too Much of a “Good Thing”

As Wegner (Chapter 1 of *The New Unconscious*) noted, that “good thing” (awareness) is really a homunculus. Ask a person if they have free will and control over their behaviors and most people will say that they do. Ask a child why they did something if they knew that it was wrong and we suspect you'll get a blank stare. Why did you choose to make that offensive comment? Why did you metaphorically try to grab the words as they came out of your mouth, knowing they were not what you truly meant to say and understanding that consequences would follow?

The New Unconscious, a collection of chapters written by social cognition researchers in the field of social automaticity, addresses this “good thing” by making the argument that awareness is not necessary for social functioning and that it is both helpful and harmful, depending on the circumstance. We believe that control and consequences are inherent to this argument.

Compensatory Automaticity

Glaser and Kihlstrom (Chapter 7: “Compensatory Automaticity”) discuss fascinating research findings called “reverse priming,” in which automatic correction for bias occurs, and argue that such an effect is different from similar contrast effects, distinguished by the underlying mechanism. This will help researchers in the future to examine findings that were seemingly contrary to traditional theory.

Beginning with automaticity (Bargh, Chaiken, Raymond, & Hymes, 1996), stereotype bias and reverse priming (Glaser & Banaji, 1999), and the role of egalitarianism in the inhibition of automatic activated stereotyping (Moskowitz, Gollwitzer, Wasel, & Schaal, 1999), Glaser and Kihlstrom provide a new view of how the unconscious might work. They suggest another role for unconscious automatic processes; whether the discussion is stereotype bias or the use of generic primes, the ability to strategically compensate for “unintended thoughts, feeling, or behaviors” (p. 171). Compensatory automaticity is defined as the unconscious (or multi-level) processing of goals, such as, accuracy and egalitarianism that the authors believe work to reduce the level of bias in automatic responses. This hypothesis was drawn from the unintended consequences of the Glaser and Banaji (1999) experiments to measure implicit racial prejudice. The authors suggest that “reverse priming effects” discovered by Glaser and Banaji provide evidence that people not only unconsciously make decisions and judgments but are at the same time automatically and unconsciously watchful for bias and making corrections to control for these unintended thoughts.

To bolster their view of “unconscious volition” they discuss the effect of egalitarianism on the automatic

Robert D. Mather and Jerri C. Jones, University of Central Oklahoma This article is a non-peer-reviewed editorial for the *Journal of Scientific Psychology*. Correspondence regarding this review should be directed to Robert Mather, Editor, *Journal of Scientific Psychology*. rmather@psycencelab.com

activation of stereotypes found in the experiments of Moskowitz et al. (1999). This set of experiments demonstrated the inhibition of unconscious gender bias effects of those with high chronic egalitarianism and the lack of control over gender bias in those with low chronic egalitarianism. While the authors agree with findings of Moskowitz et al., they do go on to suggest that some research, such as Wasel and Gollwitzer's (1997) study of supraliminal and subliminally priming, demonstrates that we have yet to determine if the goal of egalitarianism is not being motivated or pushed consciously by the fact that bias is being measured. However, there are several other experiments that suggest that explicit instructions have minimal or no effect on the judgment of subjects in these experiments. These findings have allowed the authors to conclude (against traditional views) that not only is unconscious volition not an "oxymoron" but is instead, "paradoxically aware" (p. 190). While this is provocative, it is one direction for future research to follow in revealing the intricate workings of our automatic unconscious processes.

Implicit Working Memory

Hassin (Chapter 8: "Nonconscious Control and Implicit Working Memory") makes the argument that "control" should not be thought of as the opposite of "automatic," but rather that researchers adopt a functional definition of control that allows for controlled process to occur without awareness. Hassin uses research from working memory to support his assertion that control can occur without conscious awareness.

Initially, Hassin discusses the origins of working memory and how it operates from simple cognitive processes like memorization to more intricate overlapping processes like solving problems and the comprehension processes of language and reading. He then introduced two models of working memory. In the "starting point or classic model" of working memory (Baddeley & Hitch, 1974), Baddeley and colleagues hypothesized a central executive and two lower systems. The central executive works as the regulator and the two lower systems (the phonological loop and visuospatial sketchpad) maintain the verbal, visual, and spatial information encoded into working memory. The second model (Cohen, Dunbar, & McClelland, 1990; O'Reilly, Braver, & Cohen, 1999) is biologically based with the prefrontal cortex as the controller that maintains and updates information, the hippocampus which helps with rapid learning, and the posterior and motor cortex that help with long-term learning. These models function in a similar manner, as both provide cognitive control and regulate complex processes.

Hassin also discusses several experiments that measure working memory (e.g., N-back task) and provides an overview of the characteristics (e.g., maintenance and updating of information) of working memory. He uses these models and characteristics to

illustrate the interwoven nature of working memory and consciousness (as posited by experts in the field) while setting the groundwork for his hypothesis that working memory can operate outside of conscious awareness. The research discussed by Hassin investigated insights (described in the text as the "aha experience") and suggested that while they are considered conscious, the processes that provide these "aha" moments are nonconsciously formed and suddenly "pop up in awareness" (p. 204).

Other research by Hassin created a new paradigm (by using a set of four experiments) to examine implicit insights that take place in working memory. In all four experiments, participants viewed a computer screen and were asked to indicate whether the presentation of five small round disks appeared either empty or full. After providing their response, the disks disappear and the next set appears on the screen with a fixation point between each set. The three conditions being examined were yoked broken rule sets, control sets, and scrambled sets. Being able to determine the location was not pertinent in whether the disks were full or empty, but helped the participants to predict the location of the last disk in the set. The dependent measure was whether there was an increase or decrease in reaction time in finding the location of the last disk. Hassin asserted that the mental operations needed for the four experiments on implicit insights (new working memory paradigm) were similar to the models and characteristics that have been used by the previous conscious working memory paradigms.

The first experiment provided evidence that participants were able to extract the rules and react faster in the rule sets, they were slower in the control sets, and the broken rules sets showed the slowest reaction times. In the second experiment, the participants were tested for awareness by asking them to reconstruct the randomly selected last set presented using a specified matrix. Only one participant of 20 was able to reconstruct the last set which indicated that the one participant was aware but the other 19 were not. In the third experiment, half of the participants were instructed to search for the set that followed rules and the others followed the same procedures as the first two experiments. Intentions as well as awareness were being examined with the acknowledgment that previous research indicated that sometimes intention and awareness interfere with being able to extract the rules. As Hassin hypothesized, participants in the noninstructed condition formed insights, whereas the participants in the instructed condition did not, indicating interference. The final experiment used the scrambled rule sets to examine whether the items were coded into working memory in an ordered list and whether implicit insights follow the same pattern. This provided evidence that implicit insights do follow the same pattern with the reaction times to rule sets taking less time than the reaction times to the scrambled rule sets.

Hassin's findings suggest that while the participants were aware of the disks they were not aware that they kept the ordered locations in their working memory, or that they used the location of the last disk to extract rules. Participants were also not aware that the rules corresponded to their anticipations and affected their behavior. These experiments indicate that some of the components of working memory can sometimes occur without awareness.

Finally, Hassin discussed the motivational aspects (goal pursuit) of working memory. Hassin discussed previous research in which the Wisconsin Card Sorting Test (WCST) was used to examine nonconscious priming of goal pursuits. As noted in the research, priming with an achievement goal significantly reduces mistakes and helps participants to adapt to changes in "the rules that govern the environment" (p. 214). This indicates that working memory can nonconsciously guide behavior motivated by priming of achievement goals. This research provides evidence that while controlled processes and working memory are indeed interwoven, we can (as demonstrated by Hassin) unravel them in order to view the nonconscious aspects involved in implicit insights and the motivational aspects of working memory, effectively looking at the paradox of what the author labeled "nonconscious control" (p. 215). Thus, our working memory can sometimes operate without the "good thing" (awareness).

Attitudes and Accessibility

Payne, Jacoby, and Lambert (Chapter 15: "Attitudes as Accessibility Bias") challenged the traditionally conceived two stage model in which automatic activation of a stereotype occurs and is overridden by a controlled process when sufficient motivation and ability are both present, which they refer to as an inhibition model. They suggest that an accessibility bias model is better, where accessibility bias only influences a person's response in the absence of an adequate controlled process.

Payne, Jacoby, and Lambert begin the chapter with an event in which police shot and killed a man because they thought he was pulling out a weapon (which turned out to be his wallet). The underlying detail is that this man was of West African descent. Automatic and controlled behavioral processes have a major function in our ability to make snap judgments and whether these judgments are biased. The authors separately reviewed the contributions made by automatic and controlled behavioral processes during such instances as the one described above (e.g., the presence of a gun) and then discussed accessibility bias as an automatic, implicit attitude. They also discussed the function of identifying the cognitive control within a goal, such as, the ability to distinguish between a gun and a wallet. Payne, Jacoby, and Lambert suggest a method, based on their own research that can be used in a general manner to analyze accessibility effects found in social psychology.

The authors began with a brief summary of automatic and controlled processes and category based knowledge found in the contemporary social psychology literature. Then they provided background concerning how these two processes have been found in memory research to function in a dissociated manner (e.g., amnesiacs with neurological damage). This is important for understanding the possibility of separating these two processes when examining accessibility bias. They discussed how the use of several direct and indirect memory measures have given researchers a framework to examine stereotyping and prejudice that has successfully gained theoretical footing within social psychology. Some of these methods were discussed in other chapters in *The New Unconscious* (e.g., priming tasks, word completions, and implicit association tasks which are indirect measures, and self-report tasks that are direct measures).

To understand what Payne and his colleagues are attempting to do in regards to "teasing apart" automatic and controlled processes we need to understand their definition of accessibility bias as it refers to performing a task. Based on research regarding "guessing as a measure of implicit attitudes" by Hammond (1948), they describe the process as "measuring automaticity as a systematic bias in the way people respond" and "We treat bias or guessing as reflecting attitudes" (p. 397). Interestingly, Hammond's research was initially based on searching for another indirect measure of attitudes because he felt that the projective tests (e.g., Rorschach Inkblot) were so subjective in nature that they did not measure what they were designed to measure. In his "error-choice" experiment, he used "facts" (in this instance, Russia and organized labor) as the method to indirectly measure participants underlying attitudes towards Communism. Payne et al. used Hammond's experiment to demonstrate "how distinct bases for responding" (p. 399) can effectively measure attitudes within a task.

First, Payne and his colleagues point out that Hammond failed to account for people who could correctly answer the questions about the subject matter (which would influence their responding). This created problems with separating the participant's knowledge from their attitudes, which lead them to expand on Hammond's ideas. This set the stage for the experiments necessary for their method of analysis of accessibility bias beginning with them performing a hypothetical test using Hammond's variables from before. The findings suggested that the participant's attitudes showed bias whether or not they differed in their knowledge of the subject matter.

Step two of their method discussed the involvement of automaticity (of which they provide a general operational definition) and distinguishing between automatic and controlled process as it relates to tasks. The authors acknowledge previous arguments (Bargh, 1989; Logan & Cowan, 1984) that tasks "do not meet the criteria of automaticity" (p. 401). Here they make the case

that some processes (those necessary for tasks to be accomplished) are automatic and that they have provided a method to dissociate between them.

In the two next sections, Payne et al. reviewed the role of perception in discriminability and accessibility bias and in stereotyped inferences. They discuss the findings of an experiment by McGinnis (1949) that measured perceptual defense against “noxious” stimuli (e.g., obscene language). When words were flashed in front of the participant it took longer for them to detect the obscene words. Then they explain the findings of Jacoby (Jacoby, McElree, & Trainham, 1999) that examined perception used during the training of participants and providing them with context cues in which they were to complete word fragments. The results provided evidence that flash duration did affect perception but did not influence the process of “guessing” (e.g., accessibility bias).

A discussion of stereotypes and expectations is important to the method that Payne et al. describes when accessibility bias is involved. Here they use the example given at the beginning to illustrate how the split second judgment by the officers (as to whether the man had a weapon versus a wallet) was influenced by the social categorization of the West African man (stereotyping of African Americans as more violent than White Americans). Payne (2001) conducted a study that also demonstrated this phenomenon. He paired a Black face and then a White face with objects (e.g., tools and guns) and found that a Black face would bias participants to misclassify objects as guns over tools. This provided evidence that “stereotypes and habits create an accessibility bias” (p. 405-406) and that the “constructs” of habits and dominant responses correspond well with the “constructs” of attitudes.

The next topic discussed by Payne et al. is the differences in their (dual-process) model in comparison to Banaji and Greenwald’s (1995) signal-detection theory assessment (SDT) of bias (a single-process model). SDT defines bias based on the quantity of the information received to make decisions, whereas, the dual-process model uses not only the information but also the type of information received to make judgments (e.g., between a tool and a gun). The authors follow up their discussion with a comparison between their Accessibility Model and the Inhibition Model (as discussed in Lindsay & Jacoby, 1994) comparing the relationships between controlled and automatic processes.

Finally, in the second experiment by Payne (2001) both models were tested. The data generated by the Accessibility Bias Model fit well within the process dissociation estimates they found in the first experiment as compared to the Inhibition Model. This experiment provided a basis for which the authors concluded that the decisions of the officers were not only being directed by race in determining between the “actual objects” (e.g.,

the gun versus the wallet scenario) but by a combination of both the objects and race as separate processes leading to the decision, with Payne et al. arguing that this is what took place in the beginning. It is the intent of Payne et al. to use their research as a more general model that will lead to interventions in how people are affected by accessibility bias.

Implementation Intentions

Gollwitzer, Bayer, and McCulloch (Chapter 17: “The Control of the Unwanted”) discuss research that demonstrates that implementation intentions, which are intentions to perform a plan, are somewhat resistant to both ego depletion and rebound effects. Gollwitzer et al. provide solid evidence that “implementation intentions” or if/then plans can change more labored conscious goal directed behavior to more automatic action controlled behavior. Gollwitzer et al. briefly discuss the researchers who have provided needed insight and knowledge of how intentions can first be used to begin goal-directed action. It is important to note the difference between goal intentions and implementation intentions. Gollwitzer et al. describe both as “acts of will” with the difference being that goal intentions “specify the goal” while implementation intentions are “an intention to perform a plan” (p. 487).

The authors provide experimental evidence denoting how situational cues must be specified in order for the implementation intention to be relegated to an automatic rather than conscious process. In their discussion of implementation intention determinants on wanted behavior, they point to five potential moderators that are advantageous to the strength of the effects. These moderators are: difficulty versus easy goals, strength of commitment to the goal, whether a superordinate goal intention is activated, the strength of the commitment to the formed implementation intention, and the strength of the “mental line” that is created between the if-part and the then-part of the implementation intention.

Gollwitzer et al. then turn their attention to explaining how implementation intention can be applied to unwanted behaviors, specifically, how those behaviors obstruct the attainment of a person’s goals. They illustrate three ways that can help facilitate goals using the if/then strategy. The first way would be by suppressing or shielding from the distraction of unwanted responses by using ways in which implementation intentions were framed (distraction-inhibiting versus task-facilitating). Distraction-inhibiting is dependent on the motivation (low or high) to perform (as described by the authors as tedious) tasks and task-facilitating is based on low motivation when performing these same tasks. The second way would be by facilitating the initiation of wanted responses to the intention, for example, by suppressing feelings formed by stereotypical beliefs or prejudice responses. The third and final way would be to redirect the focus from the distractions to the situation or

goal by preparing in advance for problems that will arise when attempting to attain a goal.

Gollwitzer et al. reported three unpublished experiments using redirected focus on problems, such as, detrimental self-states (e.g., incomplete self-definitions and social insensitivities), positive and negative mood effects on gender-stereotyping, and on ego-depletions' effects on performance. All of these experiments provided evidence that implementation intentions can redirect the focus "on facilitating action control without changing the self" (p. 500) by focusing on the behaviors and not the self.

Gollwitzer et al. assert that goal pursuits are also affected by adverse situational contexts, for example, when working in groups produces the phenomenon of social loafing where performance and effort are reduced when individual work is not measured. The authors performed an experiment examining the effect of implementation intentions on social loafing by having all participants formulate a list of the possible uses of a common knife (stopping after 12 minutes). Half of the participants were informed that their contribution to the list would be "pooled" with other participants, while the other half were informed that their contributions would be measured individually. Participants in the individual group were then asked to use the if/then statement, "And if I have generated a certain use, then I will immediately turn to generating a further possible use!" The participants in the individual condition generated 21 uses while the participants in the pooled condition only generated 17 uses for the common knife. However, something surprising occurred when pooled participants were then given the if/then implementation intention. The researchers found that the differences between pooled groups and individually measured groups disappeared, thereby effectively eliminating the social loafing phenomenon.

The authors conducted additional experiments testing the effects of implementation intentions on loss-framed negotiation settings and suboptimal negotiation outcomes and on situational contexts that prime competing chronic goal pursuits. These experiments indicated that when if/then strategies are used in these situations, people can successfully avoid the negative effects.

Gollwitzer et al. expounded on the possible costs associated with using implementation intentions. These costs include: rigidity of very repetitive solutions, depleting of general resources for self-regulation, and rebound effects in mental control. The research findings suggest that implementation intentions were highly effective and prevailed over many of the costs, however there are some exceptions. Situations that are outside of a person's control, situations that hardly ever occur, and specifying behaviors with no chance of reaching a goal are all beyond the ability for implementation intentions to be effective.

In conclusion, the authors note that implementation intentions provide an avenue for people to effectively plan the steps necessary to execute the pursuit of their goals while bypassing the necessity of changing the self or environment. They suggest that highly activated mental links created by implementation intentions helps us with attaining our goals by providing planned automatic behaviors, another resource to the control of the unwanted.

Consequences

Automaticity has powerful downstream consequences for social behavior. Choi, Gray, and Ambady (Chapter 12: "Unintended Communication") describe research that indicates that in an interpersonal communication, an actor's (the reference person in a two-person interaction) expectations can influence their behaviors automatically, without the actor's awareness. These behaviors can then be perceived by the perceiver (the other person in a two-person interaction) automatically. For example, group-based expectations (stereotypes) of an actor can automatically influence the behavior of the actor, which can be automatically perceived by the perceiver. These steps lead to behavioral confirmation, where expectations elicit the expected behavior in another individual. Thus, the actor's expectations launch a cycle of automatic responses that lead to the perceiver actually confirming the actor's expectations without either individual's awareness of the chain of events that led to the behavioral confirmation. Choi et al. note that although a large portion of communication in an interaction occurs automatically, most of the time these automatic processes are highly accurate. These consequences are important, as automatic processes can have downstream consequences that result in a person's behavior influencing a second person's behavior, influencing the first person's behavior, influencing the second person's behavior.

The Prize

Why should we care at all about social cognition research on the unconscious? The consequences of automatic processes are reason enough. Still, cognitive control is also important in its own right. We always wish to have more cognitive control—to stay on the diet, to resist various other temptations. Cognitive control is surreptitiously influenced by the unconscious, but as we have seen awareness does not define us—we have a great deal going on under the surface that helps us as well as hurts us. Is conscious awareness a "good thing"? The answer is that it is not always a good thing.

Knowledge of the unconscious can help us to be less biased, make better decisions, etc. Discussing his choice to change the Royal Navy from the widely used coal to the novel oil, Winston Churchill stated that, "Mastery itself is the prize of the venture" (Yergin, 1991, p. 12). That is to say, the long-term rewards of having a navy that was faster and better than the competitors outweighed the

short-term risks of technologically going it alone. As mastery was the prize of Churchill's venture, so too is mastery the prize of Hassin et al's venture. What is the value of social cognition research on the unconscious? Mastery of our behavior is the prize of the venture.

References

- Baddeley, A., & Hitch, G. (1974). Working memory. In G. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 8, pp. 47-89). New York: Academic Press.
- Banaji, M. R., & Greenwald, A. G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology*, *68*, 181-198.
- Bargh, J. A., Chaiken, S., Raymond, P., & Hymes, C. (1996). The automatic evaluation effect: Unconditional automatic attitude activation with a pronunciation task. *Journal of Experimental Social Psychology*, *32*, 104-128.
- Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 3-51). New York: Guilford.
- Cohen, J., Dunbar, K., & McClelland, J. (1990). On the control of automatic processes: A parallel distributed processing model of the Stroop effect. *Psychological Review*, *97*, 332-361.
- Dijksterhuis, A., & Nordgren, L. F. (2006). A theory of unconscious thought. *Perspectives on Psychological Science*, *1*, 95-109.
- Glaser, J., & Banaji, M. R. (1999). When fair is foul and foul is fair: Reverse priming in automatic evaluation. *Journal of Personality and Social Psychology*, *77*, 669-687.
- Hammond, K. R. (1948). Measuring attitudes by error choice: An indirect method. *Journal of Abnormal and Social Psychology*, *43*, 38-48.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Jacoby, L. L., McElree, B., & Trainham, T. N. (1999). Automatic influences as accessibility bias in memory and Stroop tasks: Toward a formal model. In D. Gopher & A. Koriat (Eds.), *Attention and performance XVII* (pp. 461-486). Cambridge, MA: Bradford, MIT Press.
- Lindsay, D. S., & Jacoby, L. L. (1994). Stroop process dissociations: The relationship between facilitation and interference. *Journal of Experimental Psychology: Human Perception and Performance*, *20*, 219-234.
- Logan, G. D., & Cowan, W. B. (1984). On the ability to inhibit thought and action: A theory of an act of control. *Psychological Review*, *91*, 295-327.
- McGinnis, E. (1949). Emotionality and perceptual defense. *Psychological Review*, *56*, 244-251.
- Moskowitz, G. B., Gollwitzer, P. M., Wasel, W., & Schaal, B. (1999). Preconscious control of stereotype activation through chronic egalitarian goals. *Journal of Personality and Social Psychology*, *77*, 167-184.
- O'Reilly, R., Braver, T., & Cohen, J. (1999). A biologically based computational model of working memory. In A. Miyake & P. Shah (Eds.), *Models of working memory: Mechanisms of active maintenance and executive control* (pp. 375-411). New York: Cambridge University Press.
- Payne, B. K. (2001). Prejudice and perception: The role of automatic and controlled processes in misperceiving a weapon. *Journal of Personality and Social Psychology*, *81*, 181-192.
- Wasel, W., & Gollwitzer, P. M. (1997). Willful control of "automatic" stereotype activation: The role of subliminally vs. supraliminally presented stimuli. *Sprache und Kognition*, *16*, 198-210.
- Yergin, D. (1991). *The prize: the epic quest for oil, money & power*. New York: Simon and Schuster.