

Societal and Managerial Implications of Implicit Social Cognition: Why Milliseconds Matter

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This article argues for the vulnerability of managerial work to unintended forms of racial and other bias. Recent insights into “implicit social cognition” are summarized, highlighting the prevalence of those mental processes that are relatively unconscious and automatic, and employed in understanding the self and others. Evidence from a response-time measure of implicit bias, the Implicit Association Test, (“IAT”; Greenwald, McGhee, and Schwartz, 1998) illustrates this phenomenon. Recent work on the predictive validity of the IAT demonstrates that social cognitive pitfalls threaten a) managers’ explicit commitments to egalitarianism and meritocracy and b) managers’ performance in their three primary roles of processing information, interacting with others, and making decisions (Mintzberg, 1973). Implicit bias influences managerial behavior in unexpected ways, and this influence is heightened in the messy, pressured, and distracting environments in which managers operate.

KEY WORDS: implicit social cognition; prejudice; stereotypes; IAT; predictive validity; management.

No job is more vital to our society than that of the manager. It is the manager who determines whether our social institutions serve us well or whether they squander our talents and resources.

Henry Mintzberg (1975, p. 61)

Few managerial job descriptions cite social justice as a performance objective. Yet, Henry Mintzberg argues that managers exert such influence as a by-product of their role in determining how talents and resources are used within organizations

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(Mintzberg, 1975). Placed within the power hierarchies and highly elaborated roles (March and Simon, 1993) that often characterize organizations, managers are individually or collectively the primary decision-makers in investments of human and financial capital; distributions of costs, profits, risks, responsibilities, and opportunities; and fundamental assessments of human potential and character. While organizations may or may not have an explicit social justice objective, they often aspire to the fair (though not necessarily equal, particularly in capitalistic meritocracies) outcomes that characterize a meritocracy. In a fair meritocracy, the organization not only enjoys the moral victory of egalitarianism, but also the instrumental benefits of good returns, good decisions, and good talent. Title VII of the 1964 Civil Rights Act in the United States formalized the importance of the manager to social justice by creating the Equal Employment Opportunity Commission (EEOC), highlighting both the harm and good that organizations could affect in society. Ethical execution of organizational and managerial behaviors is essential to such efforts, and thus, the role of managers in advancing, or hindering, social justice is unavoidable.

This paper assumes, then, that managers and organizations are important points of leverage for social justice, and considers particular vulnerabilities of managerial work in achieving social justice. Consistent with the goal of this special issue, I argue that psychological barriers to egalitarian behavior operate without intention in managers and organizations. My primary objective is to show how and why managerial work is prone to unintentional social justice violations.

I begin with a review of Mintzberg's (1973) now-classic analysis of "what managers do." This detail has relevance that will soon become obvious in the paper, as I establish the premise necessary to later argue for the vulnerability of managerial work and organizational purposes to processes of "implicit social cognition." I summarize our current understanding about implicit processes, with an emphasis on evidence gathered about the predictive validity of a relatively new measure, the Implicit Association Test, or "IAT" (Greenwald *et al.*, 1998). This evidence converges on a conclusion that managers face particular social cognitive pitfalls that threaten both organizational and societal goals of egalitarianism.

Much (though not all) of my discussion will revolve around race for multiple reasons. First, racial equality is a critical social justice issue in the United States today, both morally and legally. Second, work on implicit social cognition has prominently featured attitudes and stereotypes related to race. And finally, race may generalize to a broad range of social justice phenomena and potential ethical lapses, because of the disconnect that often exists between implicit and explicit racial attitudes. Thus, my general argument focuses on race, but is meant to extend to other issues where those attitudes are likely to diverge.

WHAT MANAGERS REALLY DO: AN EXPOSE' OF THE MESSY WORK OF MANAGERS

The argument begins with an expose' of what managers really do. One view that dominates normative notions and popular culture stereotypes of management depicts hyper-organized managers in static work environments lacking the unpredictable elements of human interaction. In this portrayal, managers' work is planful and planned, deliberate and deliberative, scientific and analytical.

But Mintzberg and others have challenged normative notions of management with a different, observation-based view of what managers really do. Mintzberg's (1973) descriptive study of chief executives revealed that half of their activities lasted under 9 min, with only 10% of activities lasting more than 1 h. Further, 93% of the verbal contact engaged in by the executives was ad hoc, rather than preplanned (Mintzberg, 1975). Managerial work occurred at an unrelenting pace, with activity that was brief, varied, and fragmented. The reality of managerial work as rapidly moving, highly fragmented, frequently interrupted, and often ambiguous was being exposed. More recent reviews of managerial work (Perlow, 1997)—reflecting the pervasive introduction of affordable air travel, desktop/laptop computing, cell phones, and the Internet—reveal that the work has gotten more, not less, messy since Mintzberg's original study. Additionally, job security has become a charming historical notion for most managers, making relationship networks even more critical and mistakes even more costly than in the past. So, managerial work is messy, characterized by time pressure, cognitive load, and high stakes.

From this emerging understanding came Mintzberg's still-respected notion that the messiness of managerial work falls into three general roles: interpersonal relationships, information processing, and decision-making. *Interpersonal relationship* activities include the motivational and training roles often associated with leadership. *Information processing* activities include the task of monitoring the internal and external environments for important new information, much of which comes through contact with staff members, as well as the dissemination of that information, often in informal ways. *Decision-making* activities include the handling of disturbances and conflicts, the allocation of resources, and negotiations.

Importantly, these three managerial roles share a dependence on the social cognition of the manager. As social cognitive beings, managers depend on the set of mental processes that allow people to perceive and interpret information they generate themselves (intrapersonal) and from others (interpersonal) (Sternberg, 1994). The prominence of these processes in the Mintzbergian view of managerial work is evident in all three roles. Direct interactions with others (interpersonal role), interpretations of information collected from or about others (informational role), and decisions that will affect others (decision-making role) all rely heavily on social cognitive processes.

So, the argument that follows rests on the relevance of the messy work of managers to social justice, and the relevance of social cognition to the messy work of managers. This stake in the ground is the first of two that will be needed for my argument. The second stake requires that I define and discuss implicit social cognition, and how it is measured. Once both stakes are in place, I will tie them together with an argument that the highly fragmented, frequently interrupted, often ambiguous, and high stakes work of managers is particularly prone to the pitfalls of implicit social cognition.

Implicit Social Cognition and Race

The example of racial relations and justice in the United States offers a useful illustration of what is meant by implicit social cognition. Society and science have converged in an interesting, and probably not random, fashion in the 40 years since the passing of the Civil Rights Act in the United States. In society, governmentally supported segregation and overt expressions of racism were once commonplace and legal, explicit and endorsed. For example, in 1958, the majority of white Americans reported that they would be unwilling to vote for a qualified black for U.S. President (Davis and Smith, 1994). Racism sat prominently on the surface of society.

Today, segregation and discrimination are almost always illegal, and in 1994, 90% of white Americans said they would be willing to vote for a qualified black presidential candidate (Davis and Smith, 1994). Yet, nonetheless, considerable and persistent evidence suggests that being black in the United States is still related to inequities on a long list of measures in virtually every domain of American life (e.g. health, labor, education, law), suggesting that bias against blacks remains pervasive throughout society (Blank, 2001).

While these inequities may be, according to some, partially an artifact of historical inequities, evidence exists that social justice violations are not simply in the past. For example, to test whether employers discriminate against black job applicants, researchers conducted a highly controlled field experiment (Bertrand and Mullainathan, in press). The researchers randomly assigned either “black-sounding” (e.g. Lakisha, Tyrone) or “white-sounding” (e.g. Emily, Greg) names to equivalent resumes and sent them in response to real want ads. In total, nearly 5,000 applications were submitted from mid-2001 to mid-2002. Applicants with white-sounding names were 50% more likely to be called for interviews than were those with black-sounding names. Interviews were requested for 10.1% of applicants with white-sounding names and only 6.7% of those with black-sounding names.

A number of researchers have noted that the nature of racism has changed in society. “Old-fashioned racism” (Brief *et al.*, 2000) has decreased while more subtle forms of “modern racism” (McConahay, 1983) or “aversive racism” (Gaertner

and Dovidio, 1986) have taken hold. These forms of racism manifest under conditions such as ambiguity (Dovidio and Gaertner, 2000), diffusion of responsibility (Gaertner and Dovidio, 1977), and obedience to authority (Brief *et al.*, 2000). The essence of these more subtle forms of racism is that the discriminator aspires to and believes in a self-image that is nondiscriminating, yet does discriminate in certain situations. Further, this phenomenon is not limited to an extreme few, but rather, pervasive in society.

In fact, many Americans express a sincere belief that both their own and many others' behaviors are nondiscriminatory. In fact, through the forces of affirmative action, equal opportunity legislation, litigation defensiveness, corporate diversity initiatives, and the "PC police," many Americans can truthfully point to concrete ways in which they have been either nondiscriminatory, or reverse-discriminating, in granting opportunities to blacks. The "gateway" has, at least to some extent, opened, particularly in contexts where racial diversity has been targeted as a goal.

So, why, or how, does discrimination persist?

Particularly, why does discrimination persist even in contexts where racial diversity is a sincerely embraced goal, and decisions are made with well-intended attention to egalitarianism or affirmative action? Why, for example, do well-qualified hires not succeed, and well-insured patients not receive proper treatment, and well-prepared students not perform well in college, particularly when employers, physicians, and professors express truthful hope for their success at the start? Despite what appear to be good societal intentions on the surface, something below the surface is clearly at work.

The parallel in social science is striking. For most of the past century, the theories and methods of social psychology relied on individual's self-reports in understanding human behavior. Thoughts and feelings were assumed to be explicitly accessible and endorsed by the individual. The emphasis was on the surface.

Today, however, social psychologists recognize that the human mind operates in both conscious and unconscious modes (Fazio, 1990; Greenwald and Banaji, 1995; Wilson *et al.*, 2000) and that the two types of processes are related but distinct. Human beings can think, feel, and behave in ways that run counter to their explicitly held and expressed views. Greenwald and Banaji offer that "the signature of implicit cognition is that traces of past experience affect some performance, even though the influential earlier experience is not remembered in the usual sense—that is, it is unavailable to self-report or introspection" (Greenwald and Banaji, 1995).

The emergence of this recent perspective coincides with the growing societal need to better understand why racial inequities persist 40 years after the Civil Rights Act, despite the seemingly sincere intentions of egalitarianism of many people. The resolution of this paradox is aided by indirect measures that do not require introspection or self-report. These measures allow researchers to gather evidence on the implicit expressions of prejudice that have overtaken the explicit expressions of the past in the past several decades.

In developing measures of hidden mental content and processes, psychologists have relied on the premise of associative learning: weaker, less learned associations require more time for mental processing than stronger, more learned associations (Greenwald and Banaji, 1995). Implicit response time measures capture responses denominated in milliseconds, a speed that represents automatic, and often unconscious, thinking. As an example, evaluative priming methods are a mature and well-studied example of latency-based implicit measures (Fazio *et al.*, 1995).

More recently, the IAT has been introduced (Greenwald *et al.*, 1998) and adopted at an unusual pace by social scientists (Kihlstrom, 2004). The IAT can be administered on a computer, and requires the participant to quickly categorize words or pictures (the reader is encouraged to visit <http://implicit.harvard.edu>, and try one of the demonstration IATs). The pairing of four categories is varied in the experiment, with two categories on the right side of the screen and requiring a keyboard response using a key such as “i,” and the other two categories on the left side of the screen and requiring a keyboard response such as “e.” In the “compatible” condition (also called a block), stereotypic associations guide the pairing of categories, such as pairing “African American” with “bad,” and “European American” with “good.” In the “incompatible” condition (or block), the categories are arranged in a counter-stereotypic way, such as “African American” with “good,” and “European American” with “bad.”

Each word or picture to be categorized is considered a trial, and a block can consist of as many as 40 trials. The individual’s average response time is computed for both the compatible and incompatible blocks. A difference in average response time represents the implicit bias and is translated into an effect size. If the two averages are statistically the same, then the test taker is said to have shown no implicit bias. Slower response times for the incompatible block are interpreted as implicit race bias favoring whites, and vice versa.² On a race IAT such as this, white Americans show an implicit bias favoring whites (with Cohen’s *d* effect sizes in the .71–.88 range) (Nosek *et al.*, 2002; Rudman, 2004; Rudman *et al.*, in press).

Still, it is worth noting that the difference between an implicit pro-white bias and an implicit pro-black bias can be as little as 50 ms. How can societal justice come down to 5% of 1 s? In fact, anecdotally, some test takers will confess that they are not actually all that surprised by their results, but will confidently claim that they are well-skilled at segregating such culturally imprinted associations from their behavior. Milliseconds, they claim, do not matter.

But, it is the illusion of this mental/behavioral segregation that the IAT predictive validity evidence challenges. This evidence points to a reality in which millisecond-level, “micro-acts of discrimination” (Reskin, 2002) that take place

²Details regarding the original and revised “scoring algorithm” for the IAT can be found in Greenwald *et al.*, 1998, 2003.

outside of awareness can lead and compound into macro-patterns of injustice. In fact, this illusion of mental/behavioral segregation may emerge from the fact that Americans' explicit bias is not as racist as it used to be, and that many societal institutions have explicit aspirations towards diversity. Implicitly, however, biases persist and milliseconds do matter.

They may particularly matter after opportunity is granted at the gateway, that is, along the pathway that follows. This literal and metaphorical image is useful in understanding the role of implicit bias in the phenomenon described earlier, in which dramatic increases in opportunity have not translated into dramatic improvements in equality. Perhaps, we have made more progress at addressing bias at the gateway of opportunity than we have made with bias along the pathway of opportunity. That is, while gateway egalitarianism is necessary to provide equal access, it is not sufficient for true equal opportunity. Micro-acts of discrimination emanating from implicit bias can take place both in the granting (gateway) and the manifestation (pathway) of opportunity. Perhaps, social and legal forces, along with good intentions, have forced explicit attitudes to take precedent over implicit bias at the gateway, where hiring patterns are quantified and quotas are enforced (though this may not even be true, as evidenced by the resume study described earlier), while the more nebulous implicit biases remain active along the pathway that follows.

That is, an almost uncountable number of micro-behaviors may affect the actual fairness of how an individual is treated after being granted the opportunity to be employed, or be schooled, or be treated, or be tried. These pathway behaviors clear or obstruct the way for success, and range from subtle, nonverbal "micro-behaviors," such as eye contact and body language, to information-sharing, expertise-seeking, and advice-taking. These are the behaviors of a manager playing out his or her three Mintzbergian roles: informational, decisional, and interpersonal. To that end, I next focus on the IAT's usefulness in clarifying the role of implicit processes in managerial behavior.

THE IAT AS A PREDICTOR OF BEHAVIOR

At this point, ample evidence for the existence of implicit race bias is documented in many studies and reviews (Dasgupta *et al.*, 2000; Dovidio, 2001; Greenwald and Banaji, 1995). As the method's psychometric health is explored and debated (Banaji, 2001; Fazio and Olson, 2003; Greenwald and Nosek, 2001), the measure's predictive validity is of central interest to many.

From a theoretical perspective, the complex relationship between our thoughts (however defined) and our behaviors remains unclear. The MODE (motivation and opportunity as determinants) model of attitude-behavior relations (Fazio, 1990; Schuette and Fazio, 1995) posits that implicit biases predict spontaneous behavior and explicit biases predict controlled behavior. The theory predicts that when

people have the time and motivation to consider the consequences of their judgments, explicit attitudes are the main driver of behavior. In the absence of both conditions, implicit attitudes are the main driver.

Using priming methods, Dovidio and Gaertner (Dovidio *et al.*, 1997a,b; Dovidio and Gaertner, 1991; Gaertner and Dovidio, 2000) have conducted a number of studies supporting the Fazio model. Specifically, they find that white participant's implicit attitudes predicted their nonverbal behavior towards a black confederate (such as blinking) while their self-reported attitudes predicted their verbal behavior and overall, deliberated evaluations toward a black confederate.

Recently, Asendorpf *et al.* (2002) proposed a "double dissociation" analytic strategy to test the hypothesis that the implicit measure uniquely predicts spontaneous behavior, controlling for the explicit measure, and the explicit measure uniquely predicts controlled behavior controlling for the implicit measure. Structural equation modeling is used to test this hypothesis, which exists in both weak and strong versions. In the weak hypothesis version, the correlation between the implicit and explicit measures is relatively high, allowing for the possibility that the explicit measure is also significantly predictive of spontaneous behavior, and that the implicit measure is also significantly predictive of controlled behavior. In the strong hypothesis version, the measures are uniquely predictive.

Greenwald and Banaji (1995) considered the role of attention as a moderator in social decision-making. Drawing on evidence from perception and social cognition research (Jamieson and Zanna, 1989; Kruglanski and Freund, 1983; Pratto and Bargh, 1991), the authors posit that distraction and time pressure increase the influence of implicit bias on decision-making. Clearly, the moderating roles of distraction and time pressure echo loudly back to Mintzberg, who characterized the work of managers by these very two conditions.

As a relatively new addition to the social psychologist's methodological toolkit, the IAT is well-positioned to contribute to this important line of inquiry. The predictive validity of the IAT is of particular interest, and a number of researchers have recently published or not-as-yet published work addressing the question (Uhlmann, 2003). The IAT's ability to predict behavior is critical to the measure's usefulness in both the domains of research and real-world impact. To facilitate an understanding of the IAT's predictive potential, the evidence supporting the argument in this paper will come almost exclusively from work done with the IAT,³ along with mention of ways in which IAT-based evidence converges with evidence based on other measures.

³While an even longer and stronger argument could be made using evidence from a variety of methods, one of the goals of this paper is to provide a focused review of the IAT's predictive validity. Within the IAT literature, priority is given to published studies with relevance to managerial behavior, though additional studies with less managerial relevance do exist.

Evidence That Milliseconds Matter

Mintzberg's framework of managerial roles proves useful in considering the role of implicit social cognition in managerial behavior. While all of the predictive validity studies cited are lab studies, and none have a deliberately managerial orientation, the dependent variables map easily (though not always exclusively) to the interpersonal, informational, and decision-making roles of a manager. Thus, the relevance of implicit social cognition to managerial work emerges from this mapping, particularly when considered under the conditions of distraction and time pressure (though these conditions are not yet explored in the early "main effects" stage of the IAT predictive validity work described here).

Importantly, the mapping is *not* intended to suggest that each predictive validity study is relevant to only that one particular managerial role, as most of the studies could be mapped to multiple roles. Rather, the objective is to suggest at least one way in which that managerial role may be influenced by implicit bias, with the understanding that the other roles may be similarly influenced in ways not discussed here.

The Impact on the Manager's Interpersonal Role

Evidence From the IAT

The interpersonal role of managers encompasses the informal and formal interactions that take place between managers and their employees, bosses, peers, competitors, clients, and suppliers. McConnell and Leibold (2001) were among the first to test the IAT's usefulness in predicting the types of behaviors that would occur in these sorts of organizational interactions. White participants experienced what appeared to be four short studies. First, they answered a white experimenter's questions about a neutral topic (their experiences in psychology). Next, they completed questionnaires, which contained explicit measures of racism. Third, they completed a race IAT. And finally, they answered a black experimenter's questions about their experience taking the IAT. Both interviews were videotaped and later coded by independent, trained judges, blind to the experimenter race. In addition, the experimenters rated the interactions (obviously, not blind to their own race). The race IAT was predictive of nonverbal behaviors; that is, implicit bias favoring Whites predicted more smiling, speaking time, extemporaneous social comments, and general friendliness, as well as fewer speech errors and speech hesitation, towards the White experimenter (as compared to the black experimenter), as assessed by both independent judges and the experimenters themselves.

This study was an important first step in the predictive validity research, and took the heavy-handed experimental approach that is often appropriate in the early stage of a new line of research. However, it left the door uncomfortably open

to alternative explanation, as the authors acknowledge, particularly related to the non-counterbalanced order of the four events in the study. In fact, beyond their own acknowledgments, there is the concern that the topic of the first conversation was a neutral one, while the topic of the second conversation was a charged one (race), and it followed a task that is widely viewed as at least mildly uncomfortable for most people (the IAT). So, it remains unclear whether it was the experimenter's race, or the conversational topic, and/or the temporal proximity to an uncomfortable, unfamiliar task on a societally-charged topic, that contributed to the differences in the nonverbal behavior.

Additional studies reinforce this finding about the relationship between implicit processes and nonverbal behavior. Using nonverbal and controlled behaviors as distinctive dependent variables of interest, Asendorpf *et al.* (2002) focused on the trait of shyness in testing the usefulness of a shyness IAT in predicting behavior in a realistic social situation. The subjects were videotaped interacting with a confederate, and the tapes were coded for both spontaneous (facial adaptors, body adaptors, and tense body posture) and controlled (speech of the participant, speech illustrators) shy behaviors. The IAT predicted nonverbal, spontaneous shy behaviors, while a self-reported assessment of shyness predicted controlled behaviors.

In another study relevant to managers' interpersonal behavior, Egloff and Schmukle (2002) constructed an anxiety IAT to predict a participant's anxiety and performance decrements after failure. Independent judges coded nonverbal indicators of anxiety (number of nervous mouth movements, nervous hand movements, and speech dysfluency) during an evaluated speaking task (typically regarded as a stressful event by most). The self-report measure of anxiety predicted self-reported anxiety during the speech while the implicit measure predicted judges' overall anxiety evaluations of the speech-givers, controlling for the explicit measure and social desirability.

Implications of This Evidence

The relationship between implicit bias and nonverbal behavior raises the question of its importance. Some may view such findings as "cute" in the laboratory, but of little meaning in a bottom-line driven world, where controlled behavior is ostensibly more relevant. However, such nonverbal dependent variables may be subtle, but powerful (Dutch *et al.*, 2003). A black job applicant can decode subtly negative nonverbal cues from a white interviewer, and subsequently, the applicant's behavior can be suboptimal, triggering a self-fulfilling prophecy (Word *et al.*, 1974).

Both intuitively and empirically, then, nonverbal behavior is influential and interpretable, even when subtle. Even more critically to the interactional role of managers, the awareness of these processes is not symmetric in an interaction (Dovidio *et al.*, 2002). In this study, whites' implicit bias (not measured with

the IAT) predicted non verbal behavior toward blacks, and whites' self-reported attitudes predicted controlled behavior. Additionally and importantly, the self-reported attitudes also predicted the white participants' self-assessment of their own friendliness, while the implicit attitude predicted the black confederate and independent observer's assessments of the white participant's friendliness. The asymmetry in perspective between the two parties is an important consideration in an organization, where a black and white person may both be interdependent, well-intended, and yet, simultaneously confused by the asymmetry in their perceptions of their interactions.

Such asymmetry and mixed signals can generate organizational costs. Dovidio (2001) had white and black participants paired together to work on a problem-solving task. The white participants fell into three categories, on the basis of their explicit and implicit prejudice levels. The most efficient were dyads containing white participants with low explicit racism and low implicit racism. The next most efficient were dyads with white participants with high explicit racism and high implicit racism. The least efficient was the dyad with the white participant with low explicit racism and high implicit racism. The conflicted and conflicting cues sent by this latter group may have posed a cost to both interdependent parties.

In fact, a vast literature, not reviewed here, exists about the systematic and systemic impact of spontaneous or non verbal behavior. Further, the distinction between spontaneous and deliberative behavior is not guided by an established taxonomy (Dovidio *et al.*, 2002). Some nonverbal behaviors are controllable, such as leaning forward, and some deliberative behaviors are immediately regretted, suggesting that seemingly available control is not always exercised. This stipulation is a tight constraint on the MODE approach, limiting the number of situations that would fall under the control of explicit attitudes. Human beings systematically overestimate the number of behaviors over which they have control and the degree of control they have over those behaviors, demonstrating the "illusion of conscious will" (Wegner, 2002). So, the segregation of implicit measures' predictive validity in the spontaneous behavior domain is psychologically naïve. Finally, the moderators of time pressure and distraction suggest that the distinctions between spontaneous and controlled behavior may be contextually dependent on the availability of time and attention, rather than fixed descriptors.

The Impact on the Manager's Informational Role

Evidence From the IAT

The informational role of managers relates to the challenge of collecting and disseminating information that is needed to accomplish organizational goals. From a social cognitive perspective, the process of attribution is central to the informational role, as managers are continually making inferences about causality,

credibility, and criticality of each piece of information they encounter. Because information is usually filled with gaps and inconsistencies, and often delivered in a social context, the manager relies heavily on the automatic tendency of the mind to resolve inconsistency and fill in gaps.

The IAT predictive validity studies that map to the informational role of the manager include dependent variables that arise from these processes of attribution and inference. These studies are particularly relevant to managers in a diverse environment, who are challenged with making relatively quick judgments of data from and about individuals (whom they assume to be) different from themselves.

In these contexts, managers are often doing real-time decoding and interpretation of the credibility, motive, and affect of others, as when Hugenberg and Bodenhausen (2003) had participants assess facial expressions of black and white faces. Participants viewed “dynamic facial displays” in which both black and white faces morphed from one facial expression to another (e.g., from unambiguous hostility to unambiguous happiness). Participants indicated the point at which the expression began and ceased being hostile. They also completed the IAT and explicit measures of bias. IAT scores were associated with a tendency to perceive a hostile expression on a black face as appearing sooner and lingering longer than on a white face. The IAT was not predictive of performance on white faces, nor was the explicit measure predictive of performance on any faces. On the basis of this study, high bias managers are at risk for systematically over attributing hostile emotion and intention to black colleagues, thus creating a defensive posture rather than trusting interdependence within the organization.

While implicit bias, as measured by the IAT, appears to be an individual difference to some extent, it is also prone to situational influences (Blair, 2002). This susceptibility to environmental influences was examined in Rudman and Lee’s (2002) rap music study. Exposure to violent and sexist rap music activated negative implicit stereotypes about black males, as measured by the IAT. In a follow-up study, non-black participants were exposed to either the violent rap, or to other popular music, and then asked to make judgments about ambiguous behaviors by a black or white target. In the rap music condition, subjects’ implicit biases were predictive of negative judgments of the black target, whereas in the control condition, implicit biases were not predictive.

These studies suggest that implicit biases are affecting actual information processing. To demonstrate the impact of the use of stereotypes on the processing of information, Gawronski *et al.* (2003) explored the extent to which individuals use gender (as opposed to individuating information) in forming impressions of women. They did a median split on participants’ gender stereotype IAT scores to distinguish participants with strong gender stereotypes from those with weak gender stereotypes, and then compared their use of information. What they found suggests that individuating information is only less efficient in the presence of strong stereotypes. In the absence of these strong stereotypes, individuating information is used, and useful, as it is ostensibly a more accurate predictor of

where a particular individual falls on a distribution than the supposed mean of that distribution (that is, the stereotype).

These studies illustrate the influence of implicit bias on the processing of social information. In an even more dramatic example, implicit bias has also been shown to affect the processing of nonsocial information. For example, Richeson and Shelton (2003) found that the race IAT predicted executive function in white participants who had just interacted with a black confederate, beyond the predictive power of the explicit measure. Specifically, executive function in a color naming Stroop task (non-race-related) requiring inhibitory processes was negatively correlated with implicit race bias after an interracial interaction; performance worsened as bias favoring whites increased. The race IAT was not predictive of executive function when the participant interacted with a same-race (white) confederate. In other words, implicit race bias predicted how well (or poorly) participants perceived and processed information.

Implications of This Evidence

Importantly, the Richeson and Shelton and Hugenberg and Bodenhausen studies focus on the cost of the bias to the bias-holder, not just the target. The informational role of the manager is particularly prone to this pitfall, as the processor of information (the manager) may incur the cost of misinterpretation of information.⁴

The IAT evidence converges with other work about ambiguous selection decisions (Dovidio and Gaertner, 2000). Participants rated the hirability of clearly strong and clearly weak applicants similarly, regardless of the applicant's race. But, when evaluating ambiguously qualified applicants, participants tended to evaluate ambiguously-qualified white applicants as strong, and ambiguously-qualified black applicants as weak. In other words, when qualifications were clearly strong or weak, applicants were not treated differently based on their race. However, when their qualifications were not clearly strong or weak, decisions varied by race.

This effect may be likely exaggerated by motivated biases, such as one shown by Sinclair and Kunda (1999) in a clever study using a non-IAT implicit measure. White participants completed an exercise, ostensibly designed to assess their interpersonal skills. They believed they were being observed over an intercom by a manager-in-training, who delivered feedback about their performance. After receiving their feedback, the participants completed a stereotype activation measure (word-fragment completion task) and then evaluated the competence of the

⁴In fact, the immediate, practical cost to the bias holder—what I refer to as the “stereotype tax”—is an understudied area. The stereotype tax can exist in two forms: (1) biases that exert a cost on the stereotype holder in the form of his or her own functioning because of exposure to or interaction with the stereotype target, and (2) biases that exert a cost on the stereotype holder in the form of his or her interpersonal/informational/decisional behavior related to the stereotype target. This broader view of the costs of implicit bias hints that advances in social justice will offer gains to not only the disadvantaged group, but to the advantaged group as well. If this hint eventually bears empirical support, then the drive towards social justice will be greatly facilitated by the force of self-interest.

manager. Unknown to the participant, the feedback was prerecorded by one of two actors—one black, one white—and was either positive or negative. Participants motivated to believe the feedback (the positive feedback condition) tended to inhibit the black stereotype on the word completion task and rate the manager's competence more highly. Participants motivated to discount the feedback (the negative feedback condition) tended to activate the black stereotype, and rate the manager's competence as lower. In the positive feedback condition, both black and white managers were rated similarly, but under the negative feedback condition, white managers fared better. Together, both the IAT and non-IAT evidence suggests that managers' information processing activities are prone to unintended implicit bias, particularly in conditions of ambiguity.

The Impact on the Manager's Decisional Role

Evidence From The IAT

The manager's decision-making role has particular impact on social justice. By resolving conflicts, negotiating agreements, matching people with opportunities, and allocating scarce resources, managers depend on their ability to make wise decisions. Growing evidence suggests that these decisions can be heavily influenced by implicit biases. In one of the first studies to show this effect, Rudman and Glick (2001) had participants evaluate a videotaped applicant for an open position (computer lab manager). The applicant was either male or female, and either agentic (competent, self-promoting) or androgynous (both nice and agentic). Additionally, the computer lab manager job description was either masculinized (emphasizing agentic qualities) or feminized (emphasizing communal qualities). Participants' gender IAT scores predicted a "backlash" effect (while explicit measures did not). The backlash effect occurs when gender stereotypes of female communality and male agency result in judgments of agentic females as interpersonally lacking. Implicit gender stereotypes negatively predicted the ratings of agentic women's interpersonal skills, particularly when the job description emphasized interpersonal skills. In other words, agentic women were penalized on interpersonal skill ratings in ways that did not occur for similarly skilled men, and in ways that were costly when applying for a job requiring interpersonal skills.

Sargent and Theil (2001) examined the role of ambiguity on decision-making, particularly when the ambiguity opened up alternative explanations to racism for particular choices. Participants were told that they were going to work with one of two other participants, whose belongings were visibly left at a desk. One potential partner's belongings suggested that he was African American (e.g., a family reunion T-shirt with a photo), while the other potential partner's belongings did not cue race. In one condition (the high attributional ambiguity condition), the assigned task would vary based on the selection of the partner, and therefore, the choice of partner could be attributed to either a preference for a partner or a preference for

a task. In the other condition (the low attributional ambiguity condition), the tasks were consistent across partners and only the partner varied. White participants with implicit race bias favoring whites were less likely to choose the black partner than participants whose scores indicated no such preference, but only in the condition of high attributional ambiguity. That is, the IAT predicted decision-making when the decision could be attributed to something other than race. Importantly, the explicit measure of race bias (the Modern Racism Scale) was not predictive of the partner decision in either condition.

Florack *et al.* (2001) considered another possible moderator in the relationship between implicit bias and decision-making: the decision-maker's tendency to engage in deliberative cognitive processing, or need for cognition (Cacioppo *et al.*, 1996). German participants completed IAT and self-report measures about their attitudes towards Turkish immigrants. Then, the participants read a (supposedly real) newspaper article about a young Turkish street gang member, Ismet, accused of a crime, and assessed the youth's guilt (e.g., guilty vs. not guilty verdict). Implicit bias predicted the assessment of guilt, with a positive relationship in high-NFC participants and a negative relationship in low-NFC participants. Explicit bias was not predictive of the verdict, regardless of NFC.

Implications of This Evidence

Of all three managerial roles, the decisional role may initially appear the most deliberative and thus, least vulnerable to implicit bias. However, the evidence described here suggests otherwise. Conditions of high ambiguity or low need for cognition are more likely to generate biased decision-making, in ways that are similar to the effects on "spontaneous" behaviors. Sargent and Theil (2001) propose that an individual's ability to control a behavior may be less relevant in situation where the motivation to control behavior is diminished. An ambiguous situation is an example of such a demotivating condition.

This idea builds on Devine's model of prejudice (Devine, 1989; Devine *et al.*, 2002) that posits that the distinction between high and low prejudice individuals is the motivation to control discriminatory beliefs and attitudes. Studies using unobtrusive measures, such as social distance (e.g. where participants choose to sit relative to confederate others), frequently rely on manipulations of attributional ambiguity in generating the effect. Managerial decision-making is rarely unambiguous, making it almost always possible to attribute any particular decision to multiple factors. Thus, in addition to the cognitive load and time constraints on the decision-making process, ambiguity may also heighten the impact of implicit bias.

Rudman and Lee (2002), Dovidio (2001), and Sargent and Theil (2001) studied the role of ambiguity. This work suggests that the greater the number and plausibility of alternative explanations (to racism), the more likely that implicit bias will predict behavior better than explicit bias. The degree of conscious computation of the ambiguity remains unclear. One interpretation is that individuals

consciously wait for an “out,” which would allow for expression of a known implicit bias without severe personal consequence. Another interpretation is that ambiguity triggers an unconscious form of the fundamental attribution error, during which the individual attributes his or her own behavior to a situational explanation rather than a dispositional one, as long as a reasonable situational explanation exists.

FUTURE DIRECTIONS

The evidence exists that milliseconds matter as the IAT clearly predicts some behavior, some of the time. I have argued for the relevance of implicit social cognition to managerial work, particularly when considered under the prevalent conditions of distraction, time pressure, and ambiguity. While these conditions are still to be more fully explored in the IAT predictive validity work, spontaneous behaviors serve as an intuitive placeholder for time-pressured conditions. In fact, the three managerial roles might, at first, appear to run from the more automatic/non verbal (interpersonal) to the more deliberative (informational, then decisional).

This simplicity, however seductive, is misleading in the context of what we now know about the robust power of unconscious processes, and the very premise of social psychology (that is, the influence of the situation). Despite the intuitive value of the spontaneous versus deliberative distinction, the constructs underlying the distinction remain unclear. As discussed earlier, a taxonomy for understanding types of behavior is lacking, and is needed if different types of behavior emerge from different types of mental processes and in different circumstances. The continuum mentioned often runs from spontaneous to deliberative, with the descriptor focused on the behavior itself. Some behaviors appear clearly spontaneous and automatic, such as eye blinking. Others may appear clearly deliberative, such as a hiring decision, but emerge as the cumulative result of a stream of encoding and attributional micro-decisions that might be characterized as spontaneous. In that sense, some deliberative behaviors can be time-pressured and some spontaneous behaviors can be controlled.

Even more generally, would an experimental participant's decision to shock another person (Milgram, 1963) be considered deliberative or spontaneous? If we call it deliberative, we fail to convey the important lack of awareness that led to that deliberative behavior. If we call it spontaneous, we fail to convey the participant's utter decision-making autonomy. How do we characterize behaviors that feel deliberative but are influenced by factors outside of our awareness?

In fact, the role of implicit bias in behavior will be better understood when we better understand the role of awareness and consciousness in implicit bias. Elsewhere in this issue, Rudman (2004) notes that the term “nonconscious” has become a source of debate in describing implicit biases. Some use the term in a declarative sense (as a description of mental content that is not known) while

others use it to describe something procedural (as a description of how implicit biases operate).

The procedural interpretation may be especially relevant here, where both “spontaneous” and “deliberative” behaviors may be prone to a lack of procedural consciousness. Are individuals more or less likely to show discriminatory behavior when they better understand and accept that (a) some mental processes are implicit, and (b) implicit mental processes influence their behavior? That is, does a high degree of awareness indicate a greater role for explicit processes and a lesser role for implicit processes, or vice versa?

Answering this question will be important to the development of remedies for implicit bias, as possible remedies include conscious suppression, temporary shift, or long-term change of the implicit bias. Perhaps, for example, subsequent cognitive functioning suffers particularly in highly conscious individuals (Richeson and Shelton, 2003) whose efforts at self-regulation and executive control are highest. If suppression is what leads to the loss of cognitive functioning, then two questions arise. Is the suppression of the implicit bias occurring consciously or unconsciously? And, what are the behavioral implications of being aware of an implicit bias, and the need to suppress its influence?

The role of awareness is especially relevant to managers working in the litigious corporate environment, where even the most genuinely egalitarian of managers fears legal retribution for a legitimate but negative human resource decision about a member of disadvantaged group. The subsequent outburst of diversity training has made issues like race highly salient in most managers’ minds. Will this heightened awareness advance or hinder social justice in the workplace?

The manager stands at the gateway and along the pathway of a Mintzbergian environment that is messy, pressured, and distracting, and in a larger society that is conflicted and changing. In the course of a day, a manager performs countless informational, interpersonal, and decisional acts, ranging from the most minor and micro to the most major and macro in scope. Paradoxically, micro-bias occurs in the form of split-second associations, outside of awareness and ostensibly segregated from the macro-behaviors that lead to major societal outcomes. The evidence, however, suggests that this segregation exists only as an illusion in our minds, not in reality. Milliseconds matter.

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