JOURNAL OF SOCIAL ISSUES

A Journal of the
Society for the
Psychological Study
of Social Issues

Contemporary Discrimination in the Lab and Field: Benefits and Obstacles of Full-Cycle Social Psychology

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This article highlights the necessity of applying evidence-based social psychological research to identify the causes and consequences of implicit bias as they occur in the real world. We first outline a number of benefits that emerge from complementing controlled laboratory experiments with field studies chief among them is that the latter bolster external validity and the applicability of laboratory research to real-world settings where social problems are rooted. Second, we briefly (1) highlight where in the process of decision-making discrimination might occur, as demonstrated by field studies (i.e., when do perceivers' implicit attitudes get translated into action) and (2) identify some underlying causes. Finally, we speculate about possible remedies for implicit bias in the real world, some of which have been tested in prior research whereas others are yet to be tested.

The existence of large structural inequalities between social groups in employment, healthcare, housing, education, and treatment in the judicial system have been widely noted and debated in the past few decades (Badgett, 1996; Daniels, 2001; Ellis & Riggle, 1996; Leonhardt, 2002; Portwood, 1995; Raudenbush & Kasim, 1998; Ridgeway, 1997; Rubenstein, 1996; Stohlberg, 2002). The causes of these disparities are, no doubt, manifold depending on the specific area of social life under scrutiny. Nevertheless, one particular causal factor has attracted the attention of social psychologists because it often remains a viable explanation even when other causes have been ruled out: namely, the effect of group-based

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stereotypes on decision-making such as deciding who to hire or promote in the workplace, what medical treatments to offer patients in clinics and hospitals, who to sell or rent a home to, who is a criminal versus an innocent civilian, and how much punishment is fair in the justice system.

Given the long history of empirical research on stereotyping and prejudice in social psychology, and the scientific evidence that has accumulated as a result, our field is well-placed to apply evidence-based research to identify the causes and consequences of group-based inequalities as they occur in the real world. This type of research that crosses over from lab to field and back to the lab is what Cialdini (1980) called "full-cycle social psychology" whereby everyday observation of events and phenomena is used both at the beginning and end of the research process. When used in the beginning, real-world events help to identify important phenomena and social problems worthy of empirical investigation. When used in the middle or end of the research process, events in the real world check the validity of experimental findings. If there was ever an urgent need for social psychological research to create a "full cycle" between everyday social problems and laboratory research, it is here—in investigating the potential role of subtle stereotypes and prejudice in creating or magnifying structural inequalities.

A contemporary discovery of social psychology that can illuminate seemingly intractable structural inequalities is that people's everyday decisions and actions can be influenced subtly by stereotypes, preferences, and biases, without their awareness or control, even when they exhibit no overt bigotry. In other words, even people who report egalitarian attitudes toward disadvantaged out-groups may subtly (or implicitly) favor some groups and be biased against others in ways that are consistent with societal stereotypes (Dasgupta, 2004, 2008; Dovidio, Kawakami, Smoak, & Gaertner, 2008; Greenwald & Banaji, 1995; Nosek et al., 2007). Sometimes these implicit biases get expressed without the individual's full awareness; at other times they are expressed in situations involving time pressure, distraction, and cognitive load, where it is difficult to control and edit one's judgments and decisions in real time, even if one is aware of potential bias. Importantly, implicit biases in one's thoughts are known to affect one's decisions, actions, and judgments, producing discriminatory effects whether or not they were consciously intended by the decision-maker (Dasgupta, 2004, 2008; Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

Although meticulous lab experiments initially led to important discoveries about implicit bias in attitudes and actions, the Achilles heel of this work was concern about external validity. That is, how do we know that evidence obtained from lab research about implicit bias is actually responsible for structural inequalities observed in employment, healthcare, housing, and law enforcement in the real world? This is where field research provides a beautiful complement to laboratory experiments.

Benefits of Field Studies Illustrated in This Special Issue

Field Studies Conducted at the Actual Site of a Social Problem Directly Identify the Causes

Quasi-experimental studies conducted in field settings can be more compelling than lab studies if they illuminate social inequality at the actual site of the problem (e.g., when a study is conducted in the workplace or in a healthcare facility rather than in a lab) and if study participants represent the population to which the findings need to be generalized (e.g., when study participants are human resource professionals or healthcare providers rather than college students). Three articles in this issue (Bendick & Nunes, 2012; Pager & Western, 2012; Penner et al., 2012) fit nicely in this category. The first two articles describe field studies investigating whether hiring decisions for entry level retail positions as well as professional and managerial positions are influenced by implicit bias using matched-pair testing. This is a technique where equally qualified (i.e., "matched") applications are sent to employers in response to job advertisements—the applications are identical on all job-relevant attributes except for the person's group membership (race, gender, age, sexuality, disability, etc., depending on the specific type of stereotype under investigation). Of course, these applications don't belong to real applicants but are created by researchers in order to investigate whether equally qualified applicants will be equally likely to receive callbacks and be hired or whether callbacks and hiring rates will vary based on group membership. The beauty of this research design is threefold: (1) any difference in hiring rates can be confidently attributed to bias against the target group rather than any other quality of the job applicant; (2) decision-makers in these studies are real human resource professionals who make these types of decisions in their professional life; and (3) the study was conducted in a real workplace where participants thought they were making hiring decisions about actual applicants rather than simulating such decisions. Results of these studies consistently show that job applicants from historically excluded groups had a 20–40% chance of not being hired or receiving callbacks every time they applied for a job.

If this type of study had been conducted in a lab setting, the hiring situation would have been a simulation and most likely participants would have been convenience samples of undergraduate students rather than human resource professionals (Dasgupta & Hunsinger, 2008; Henry, 2008; McGuire, 1967; Sears, 1986). Although the results of such lab studies often converge with matched-pair field studies and other field studies (e.g., Bertrand & Mullainathan, 2004; Correll, Benard, & Paik, 2007; Davison & Burke, 2000; Hebl, Foster, Mannix, & Dovidio, 2002), there are reasons to think that the translation from lab findings to the field may not always be perfect. For example, one might argue that because students

are novices whereas human resource professionals are experts who have done this job for many years, the latter may be less prone to implicit bias in hiring than the former (cf. Dasgupta & Hunsinger, 2008). Alternatively, one might argue that because real hiring decisions are consequential whereas experimental simulations are not, decision-makers may be more careful and thorough in their decision-making in the former situation than the latter. For these reasons, it is particularly persuasive to demonstrate that implicit bias occurs in real life and is responsible for structural inequality rather than showing bias in lab situations that are several times removed from real-world settings.

Moving to a very different domain, one often finds race differences in health-care delivery but in order to understand where and why that happens, field studies conducted in real healthcare facilities are needed with real doctors as participants. Penner and colleagues (2012) provide an excellent review of many such field studies. Their review demonstrates that race bias is evident in several stages of the healthcare delivery pipeline. First, studies that analyzed conversations between real doctors and patients found that the amount of information provided by doctors to their patients especially about treatment side effects was significantly less when patients were Black rather than White. In mirror image fashion, the amount of information sought by patients and their understanding of the information was significantly lower when they were Black than White.

Other studies examined doctors' treatment decisions in the case of patients diagnosed with low-grade prostate cancer. One relatively common treatment recommendation in this case is to engage in "watchful waiting" or "active surveillance" without any definitive treatment. Interestingly, even after controlling for factors such as patient age, comorbidities, stage of the cancer, and life expectancy, Black men were significantly more likely to undergo watchful waiting than were White men. Moreover, when comparing medical care among Black and White men who were receiving watchful waiting, Black men tended to receive less medical monitoring and had longer median times from diagnosis to receipt of a medical monitoring visit or procedure than did White men.

Yet other studies compared the quality of chemotherapy treatment given to Black versus White breast cancer patients and found that even after controlling for all possible confounding factors, Black women were more likely to be under-dosed or receive nonstandard chemotherapy compared to the treatments given to equivalent White women. This discrepancy has grave implications for mortality rates because underdosed chemotherapy treatment results in higher incidence of cancer recurrence. The import of these health disparity studies is that participants in these studies were real doctors making decisions about real patients in real hospitals and clinics (not simulated medical treatments). Equally importantly, this form of discrimination cannot be ethically investigated in lab experiments thus field studies offer a rare opportunity.

Recruiting Samples from the Site of a Social Problem Illustrates the Ubiquity of Implicit Bias

It is particularly compelling when research reveals evidence of implicit bias in specific real-world domains using study participants who make important (often life-and-death) decisions in that domain—thus, any evidence of implicit bias in decision-making from these studies can be directly connected to societal-level disparities in that domain. Some of these studies use standard experimental designs to avoid potential confounding variables. When results of these studies converge with other lab studies that use student samples, it provides reassuring evidence that the phenomena we study in the lab do indeed map onto the real world. For example, consider a study by Green et al. (2007) summarized in Penner et al. (2012). This study examined whether physicians' implicit and explicit attitudes about race predicted treatment recommendations they gave to a potential patient who showed symptoms of coronary artery disease. The patients in this case were not real, but fictitious individuals in matched vignettes identical in all respects except for their race (Black or White man). Results showed that on average, physicians were more likely to recommend thrombolysis for the White patient than for the Black patient (even when they believed the Black patient was suffering from coronary artery disease). More importantly, physicians who were more implicitly biased in terms of their racial attitudes were less likely to recommend thrombolysis for Black patients but instead more likely to recommend the same treatment for White patients. These results remained significant even after adjusting for physicians' demographic characteristics, their explicit racial attitudes, and their confidence in thrombolysis effectiveness. The general finding that implicit bias predicts discriminatory behavior has been demonstrated in many lab studies using student samples, but it is particularly powerful to see this type of finding in a hospital setting with physicians as participants. These data clearly reveal how implicit bias can have life-or-death consequences for others.

The idea that implicit bias can have life-or-death consequences has also been illustrated in other lab and field studies on shooter bias (Correll, Park, Judd, & Wittenbrink, 2007a; Correll et al., 2007b; Sadler, Correll, Park, & Judd 2012). Shooter bias is the phenomenon wherein stereotypes linking Black men to criminality operate implicitly in perceivers' mind and bias their rapid decisions to shoot or not shoot target individuals in a simulated law enforcement game. The original findings using convenience samples of undergraduate students found that people were more likely to accidentally "shoot" unarmed Black than White men. This bias was also seen in the degree of hesitation people exhibited (i.e., the amount of time it took them to make a decision). Sadler, Correll, Park, and Judd (2012) and Correll et al (2007b) replicate the same finding using police officers as participants who are experts in law enforcement rather than undergraduates or

other civilians who are novices. Although the shooter task is a simulation rather than examining actual records of police shootings, these types of studies show that findings from convenience samples can be replicated using professional police officers.

Studies that Compare Multiple Social Groups Illuminate Similarities and Differences among Groups Targeted by Implicit Bias

One weakness of many lab experiments is that they simplify the independent variables of interest into two or three conditions. Applied to the domain of prejudice research this means that experiments typically compare binary targets (e.g., reactions to Black vs. White individuals); however, these results are often overgeneralized to all minority groups. Of course, lab experiments do not have to be constrained by such a narrow definition of minority versus majority, but because the experimental method encourages simplification of variables into neat factorial designs (e.g., 2 × 2 factorials), comparisons of multiple ethnic minorities within the same experiment are rare. Sadler and colleagues offer just such a study that investigated how varying target groups (Black, Asian, Latino, and White) in the shooter paradigm influenced police officers' simulated shooting behavior as they tried to decide whether the target was armed or unarmed under time pressure.

Sadler et al.'s (2012) results showed interesting undiscovered effects about shooter bias. Recall that past research in this domain has shown that when comparing Black and White targets both civilians and police officers are faster to correctly "shoot" armed Black than White men and were slower to not shoot unarmed Black than White men, indicating a propensity to perceive Black men as perpetrators. Sadler and colleagues' study compared police officers' responses to Black, Latino, Asian, and White targets who were sometimes armed and other times unarmed. Results showed that police officers showed more shooter bias against Blacks and Latinos compared to Whites and Asians. They also showed more shooter bias against Whites than Asians, which fits with the idea that violent criminality is not part of the Asian stereotype in the United States. Third, police officers who overestimated violent crime in their region of the country showed more shooter bias against Latinos (but not African Americans) and less bias against Whites. Finally, contact (probably negative contact) with African Americans predicted more shooter bias against Black men. These findings illustrate that variations in the expectations associated with specific target groups change the likelihood of implicit bias.

Field Studies with External Validity Can Be Applied Directly to Legal Issues

One important benefit of field research is that it moves closer to the actual site of social problems and by doing so it can make a more persuasive case that

the data apply directly to a particular area of the law that one is seeking to remedy (e.g., employment discrimination). From the perspective of legal scholars and practitioners, lab experiments raise two concerns. First, because lab experiments are conducted in carefully controlled settings that often involve mental simulations rather than real events they may lack ecological validity. Second, the fact that experiments often use student samples raise concerns about external validity. For these reasons, legal scholars and practitioners who are interested in applying social psychological findings on implicit bias to law and policy may experience a niggling doubt—are these findings really applicable to real-world events? By using participants drawn from the site of the problem (doctors, nurses, human resource decision-makers) and by conducting the study at that very site, field studies nip this doubt in the bud.

Kang's (2012) article in this issue nicely highlights three ways in which evidence about implicit bias from field and lab studies might promote legal change. First, these studies can spotlight critical issues in a legal case by providing general facts relevant to deciding whether or not a law has been broken. For example, evidence that group-based disparities can emerge in healthcare delivery implicitly, without the decision-maker's conscious intention or animus, might provide a social framework or a lens through which the facts of a particular legal case can be analyzed.

Second, field research on implicit bias may prevent instances of bias before they happen. For instance, learning about this type of research in one's own profession might bring the message closer to home; people in a given profession may come to understand how easily stereotypes can bias their own professional judgments despite good intentions. Moreover, personal experience with implicit attitude measures may serve as a consciousness-raising device by allowing individuals to discover their own implicit bias. As an example, imagine the experience of physicians in Green et al.'s 2007 study who learned about their own implicit racial attitudes after taking the Implicit Association Test. Their personal experience as study participants might encourage individual physicians to set up structured remedies to ensure that they treat patients the same way regardless of group membership (e.g., by using structured interviews, anonymous initial screening of patient treatment records, periodic comparison of patients' treatment records, etc.).

Finally, the most ambitious application of implicit bias research in the legal arena is that it provides an opportunity to raise questions about assumptions underlying specific laws having to do with discrimination in light of evidence from the mind sciences, thereby potentially changing the substance of law. For instance, we know from many lab and field studies that implicit biases are malleable—repeated exposure to likeable and competent members of underrepresented groups significantly reduces implicit prejudice and stereotyping of those groups (Dasgupta & Asgari, 2004; Dasgupta & Greenwald, 2001; Dasgupta & Rivera, 2008).

These findings imply that increasing the diversity of otherwise homogeneous environments by recruiting admirable and competent members of underrepresented groups is likely to benefit majority group members in that environment by changing their implicit attitudes and beliefs. This knowledge provides an opportunity to reframe the affirmative action debate—as a program that is not solely directed at benefiting minority group members. Rather, the recruitment of underrepresented individuals as part of affirmative action programs is likely to also benefit the majority group because the recruited individuals become debiasing agents whose presence changes the thoughts and actions of the majority.

In sum, field studies make it possible to observe bias as it occurs in the real world. If we hope to remedy these biases, it is necessary to identify the locations and underlying causes of such biases. In the sections that follow, we highlight some locations and underlying causes that emerge from field studies followed by potential remedies for implicit bias in the real world.

Identifying Multiple Locations in the Social Structure Where Implicit Bias Occurs and Possible Causes

In order to rectify group-based disparities as they occur in the real world, we first need to locate where in a social structure implicit bias occurs and why it occurs. To that end, Penner and colleagues (2012) take the case of race disparities in oncology treatment and identify three reasons why such disparities occur: (1) healthcare providers' attitudes and stereotypes, (2) patients' expectations of how they will be treated, and (3) structural inequality in the healthcare system.

One reason why Black cancer patients might suffer higher mortality rates than their White peers is that physicians' implicit racial attitudes and stereotypes about their patients' race or ethnicity, which might bias their treatment plan. Specifically, research suggests that physicians sometimes implicitly assume that Black patients are less educated than White patients and less likely to adhere to medical treatment plans (Van Ryn & Burke, 2000); these stereotypic assumptions predict their treatment decisions. In addition to stereotypes, other research shows that physicians who hold anti-Black implicit attitudes are less likely to recommend appropriate treatment to Black patients suffering from cardiovascular diseases (Green et al., 2007). However, these physicians' explicit (or conscious) attitudes about race did not predict their treatment decisions.

A second reason for group disparities in healthcare has to do with patients' perceptions of their physicians. Penner and colleagues cite research indicating that Black patients perceive greater racial discrimination in healthcare compared to their White peers and, not surprisingly, feel less trust toward White physicians. Importantly, Black patients' perceptions of past discrimination in the healthcare system are associated with lower adherence to medical treatment recommendations and, in turn, poorer health (e.g., Penner et al., 2010). In contrast, positive

expectations about healthcare providers are associated with greater adherence to, and satisfaction with, one's healthcare (Bogart, Bird, Walt, Delahanty, & Figler, 2004). Along the same lines, the more patients trust their providers, the more likely they are to follow prescribed preventative measures (O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004).

Finally, a third reason for race disparities in health suggested by Penner and colleagues has to do with structural disparities in healthcare delivery as a function of social class and the fact that racial minorities are overrepresented in low socioeconomic segments of the American population. Because healthcare is distributed through employment and its quality is contingent on the quality of employment, individuals of low socioeconomic status (SES) suffer from low-quality healthcare. Further, individuals of low SES must rely on hospitals and clinics in their neighborhoods, which likely have low-quality facilities. Thus, race disparities in health may be due to structural factors, perceiver (i.e., physician) factors and also target (i.e., patient) factors.

Possible Remedies

Given the evidence that discrimination occurs in the real world, what actions should be taken to remedy this discrimination? We suggest that both perceivers and targets of discrimination can play an active role in reducing the prevalence of group-based discrimination. For example, both parties might benefit from being made aware of the role of implicit bias in creating group disparities. Greater awareness might make perceivers more mindful of the subtle impact of bias on their judgments and actions and activate corrective processes. At the same time, greater awareness might make targets of discrimination more able to deflect bias by disproving stereotypes when they become aware of it.

Awareness of Implicit Bias Enhances Perceivers' Motivation to Correct

From the perceiver's end (e.g., medical practitioners, law enforcement officers), individuals who hold explicit egalitarian beliefs may benefit from learning that despite their explicit egalitarian attitudes, implicit stereotypes and biases may influence their decisions and behavior in unintended ways. Explicitly low prejudiced individuals are particularly likely to feel compunction at the possibility of their own unintended bias and subsequently motivated to monitor and correct such bias in the future (Monteith, 1993; Monteith & Mark, 2005, 2009). Indeed, Dasgupta and Rivera (2006) found that although many people hold implicit anti-gay bias, among those who were consciously motivated to be egalitarian such biased attitudes do not translate into biased behavior toward a gay person. In

contrast, among individuals who were not motivated to be egalitarian, strong antigay implicit attitudes did indeed predict more biased behavior.

A Priori Decision-Making Strategies Reduce Perceivers' Implicit Bias

Once individuals are aware of potential bias and motivated to control it, the next step is to develop concrete strategies to implement. In law enforcement and shooter bias, recent work has found that individuals can improve their accuracy on the Shooter Task by developing implementation intentions to ignore goal-irrelevant stimuli (e.g., race of perpetrator) or by adopting a conscious goal to shoot only when appropriate and to avoid shooting when inappropriate (Mendoza, Gollwitzer, & Amodio, 2010).

At an organizational level, implementing specific strategies for hiring and promotion have been found to reduce implicit bias. For example, research in employment suggests that the use of highly structured interviews can reduce if not eliminate group-based hiring bias (e.g., McCarthy, Van Iddekinge, & Campion, 2010; Sacco, Scheu, Ryan, & Schmitt, 2003). Specifically, hiring bias against pregnant women was alleviated by the use of structured rather than unstructured interviews (Bragger, Kutcher, Morgan, & Firth, 2002). Gender disparity in the composition of orchestras was reduced by the use of "blind auditions" for orchestras whereby most major orchestras now use a screen during auditions to hide the identity of the musician. An audit study showed that blind auditions increased the probability of female musicians advancing into final rounds of auditions and being eventually hired (Goldin & Rouse, 2000). Together, these techniques identify means of achieving greater impartiality in hiring decisions which can be put to good use in other professions.

Finally, when targets of implicit bias become aware of such bias toward themselves or their in-group, sometimes they may be able to use this knowledge as power by playing an active role in deflecting or remedying implicit bias. For example, women who become aware of gender disparities in negotiated salaries and raises (Kray & Thompson, 2005) may become motivated to negotiate salaries and raises for themselves more actively. Similarly, as suggested by Cikara, Rudman, and Fiske (2012), female social psychologists who become aware that gender disparity in the publication rate in the field's leading journal is partially due to the fact that male authors appeal editorial decisions more often than female authors, may choose to use that strategy when appropriate. In the healthcare domain, once Black patients become aware of race disparities in healthcare and the specific reasons responsible for it, they might opt to actively initiate discussions about their medical treatment options with their physicians, which in turn might enhance their health outcomes. This "knowledge as power" approach gives targets of discrimination some agency and control to deflect or remedy implicit bias. Needless to

say, this must be accompanied by other remedies that involve the perceiver and larger social structure.

Conclusion

In conclusion, field studies provide direct evidence of implicit bias in action in everyday life and equally importantly, illuminates where and why such bias occurs. We suggest that these field studies when coupled with laboratory experiments provide an excellent example of full-cycle social psychology which is a powerful research tool that identifies important social problems and possible remedies.

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