

THE NATURE OF IMPLICIT PREJUDICE:
IMPLICATIONS FOR PERSONAL AND PUBLIC POLICY

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Some fifty years ago in Arkansas, nine black students initiated a social experiment with help from family, friends, and armed national guards. Their successful attempt to desegregate Little Rock's Central High School following the decision in *Brown v. Board of Education* is among the most momentous events in America's history, leaving no doubt about its historic importance and the significance of its impact on public policy. Nevertheless, as many have noted, even at the beginning of the 21st century, a blatant de facto segregation in living and learning persists and in some circumstances has intensified (e.g., Orfield, 2001). The American experiment in desegregation is a reminder that public policies, however noble in intent, may not realize their aspirations if they do not include an understanding of human nature and culture. In other words, they cannot succeed if they are not founded on the relevant science, which reveals the nature of the problem, the likely outcomes, and how social transformation can best be imagined. As an example of the importance of basing policy in science, take the research of Robert Putnam showing the unsavory result that ethnic diversity may actually increase social distrust. As the ethnic diversity by zip code increases so does mistrust of one's neighbors, even same-ethnicity neighbors (Putnam, 2007). The naïve optimism that diversity will succeed in the absence of a clear understanding of the dynamics of social dominance and intergroup relations is challenged by these and other such revelations (e.g., Shelton et al., this volume). Hence, even well-intentioned public policies are unlikely to yield positive outcomes unless they are grounded in the best thinking available about how people actually think and behave. Sadly, this has not been the case, both because policy makers are not sufficiently respectful of the importance of science as the guide to social issues, and because academic scientists resist imagining the policy implications of their evidence.

In this chapter, we address the topics of stereotyping and prejudice, staying firmly within the bounds of what the science has demonstrated. However, in keeping with the mission of this book, we spell out what we see to be some obvious and other less obvious tentacles to questions of public policy. We posed the following questions to ourselves: What are the broad lessons learned that have changed our understanding of human nature and social relations in recent decades? In what way does the new view run counter to long-held assumptions? How should policy involving intergroup relations proceed in light of these discoveries? And, can we speak about "personal policies" that may emerge from the education of individuals about the constraints and flexibility of their own minds while also considering the notion of policy in the usual "public" sense? Our contention is that personal and public policy discussions regarding prejudice and discrimination are too often based on an outdated notion of the nature of prejudice. Most continue to view prejudice as it was formulated generations ago: negative attitudes about social groups and their members rooted in ignorance and perpetuated by individuals motivated by animus and hatred. The primary implication of the old view was that prejudice is best addressed by changing the hearts and minds of individuals, for good-hearted people will think well of others and behave accordingly. However, research in recent years demonstrates that the common view of prejudice is incomplete, even dangerously so. Staying with it would

lead to policy choices that might be ineffectual, or worse. Staying with it would be akin to ignoring the evidence on smoking and cancer.

How has the scientific understanding of prejudice changed? In short, we now know that the operation of prejudice and stereotyping in social judgment and behavior does not require personal animus, hostility or even awareness. In fact, prejudice is often “implicit”—that is, unwitting, unintentional, and uncontrollable—even among the most well-intentioned people (for a review see Dovidio & Gaertner, 2004). Moreover, although the discovery of implicit prejudice initially brought with it an assumption that it might be unavoidable (e.g., Bargh, 1999; Devine, 1989; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997), research demonstrates that, although it remains stubbornly immune to individual efforts to wish it away, it can be reduced and even reversed within specific social situations through sensible changes in the social environment (e.g., Lowery, Hardin, & Sinclair, 2001; Rudman, Ashmore, & Gary, 2001). In sum, in addition to the real problems that malicious “bad apples” pose for social policy, research demonstrates that prejudice also lives and thrives in the banal workings of normal, everyday human thought and activity. In fact, an over-emphasis on the bad apples may well be detrimental to considerations of policy because it assumes the problem of prejudice to be that of the few rather than that of the many (Banaji, Bazerman, & Chugh, 2003).

We believe that the new understanding of prejudice that has evolved over the past three decades invites a transformation of the public debate regarding how the problem of prejudice may be productively addressed. Hence, this paper reviews the research that has so dramatically changed the contemporary understanding of the nature of prejudice, with an emphasis on research demonstrating (a) the existence of implicit prejudice, (b) the ubiquity of implicit prejudice and its consequences, (c) principles by which the operation of implicit prejudice may be influenced, and (d) the policy changes implied by a recognition of what the mind contains and is capable of. In so doing, we argue that although implicit prejudice has disturbing consequences for social judgment and behavior, potential solutions may arise in part from a re-conceptualization of prejudice—less as a property of malicious individuals and more as a property of the architecture of cognition and known mechanisms of social learning and social relations.

THE NATURE OF IMPLICIT PREJUDICE

The discovery that prejudice can operate unwittingly, unintentionally, and unavoidably emerged from several related developments in psychology, sociology, economics, and political science. Most politically salient was the persistence of social, economic, and health-related racial discrimination despite an increasing unwillingness of Americans to consciously endorse “explicit” racist attitudes from the mid- to late-20th century (e.g., Bobo, 2001; Dovidio, 2001; Sniderman & Carmines, 1997). Although the observation of dissociations between explicit intergroup attitudes and intergroup discrimination was hardly unprecedented (e.g., Allport, 1954; La Pierre, 1934), it was met with an increasing interest in assessing political attitudes unobtrusively, either to circumvent the role of social desirability in attitude expression (e.g., Crosby, Saxe, & Bromley, 1980; Fazio, Jackson, Dunton, & Williams, 1995; Word, Zanna & Cooper, 1974), or to address the

possibility that the psychology of prejudice in the U.S. had evolved into more sublimated, symbolic, or otherwise less deliberately hostile forms (e.g., Dovidio & Gaertner, 2004; Jackman, 1994; Sears & Henry, 2005). Equally important, developments within the information-processing paradigm of psychology made the study of implicit cognition—including automatic, implicit prejudice—both newly possible and theoretically coherent (e.g., Banaji & Greenwald, 1994; Greenwald & Banaji, 1995; Bargh, 1999). Finally, the social-psychological interest in implicit prejudice resonated with a broader interdisciplinary appreciation across the brain sciences of the variety, sophistication, and richness of information processing that occurs outside the window of conscious deliberation, indicating, among many other things, that prejudice is hardly the only kind of thinking largely implicit in nature (e.g., French & Cleeremans, 2002).

Discovery of Implicit Prejudice

The discovery and identification of implicit prejudice as consequential, ubiquitous, and distinct from “explicit” or conscious endorsement of prejudiced attitudes is now firmly established in decades of research, hundreds of studies, thousands of participants from around the world, and a variety of research methodologies. Implicit prejudice was captured initially in two basic experimental paradigms that emerged from the information-processing nexus of cognitive and social psychology—one demonstrating effects of concepts made implicitly salient through experimental manipulation, and the other demonstrating the existence and correlates of implicit semantic associations.

Effects of cognitively salient concepts on social judgment were initially captured in now-classic experiments demonstrating that evaluations of social targets are implicitly influenced by recent exposure to judgment-related information (Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979). Although interdisciplinary consensus about the importance of implicit cognition exhibited in this research tradition had been building for many years, its application to stereotyping was captured in Patricia Devine’s (1989) iconic paper, which marked the beginning of a paradigm shift in the social-psychological understanding of stereotyping and prejudice more generally.¹ In the critical experiment, participants evaluated “Donald” as more hostile if they had been subliminally exposed to a large versus small proportion of words related to common U.S. stereotypes of African Americans. The finding was striking because it suggested that crude stereotypes could operate unintentionally and outside conscious awareness to influence social judgment, and disturbing because it showed that implicit stereotyping occurred to an equal degree whether participants explicitly endorsed racist attitudes or not.

¹ Here and throughout we adopt conventions of social-psychological nomenclature in our use of terms. The umbrella term “attitude” includes evaluations (prejudice), beliefs (stereotypes), and behaviors (discrimination) regarding an attitude object. The terms “explicit” and “implicit” are used to capture a well-accepted heuristic dichotomy between modes of mental functions that operate largely consciously and reflectively versus unconsciously and automatically. Hence, “implicit attitude” refers to the strength of automatic association between an attitude object and characteristic attributes, “implicit prejudice” refers to the strength of automatic associations between social groups and attributes good and bad, and “implicit stereotyping” refers to the strength of automatic associations between social groups and characteristic attributes which may vary in evaluative valence.

This basic paradigm has since been used in scores of experiments that confirm the implicit operation of prejudice and stereotyping in social judgment, including, but not limited to, ethnicity and race (e.g., Dovidio et al., 1997), gender (e.g., Rudman & Borgida, 1995), and age (e.g., Levy, 1996). As an example of the existence of implicit gender stereotypes, women but not men are judged as more dependent after recent exposure to female stereotypes, and men but not women are judged as more aggressive after exposure to male stereotypes (Banaji, Hardin, & Rothman, 1993)—effects of stereotype salience are equally large for women and men, regardless of levels of explicit prejudice. In sum, research in this tradition suggests that mere knowledge of a stereotype can influence social judgment regardless of explicit intentions and regardless of the social category of the one doing the stereotyping.

Research demonstrating the implicit influence of cognitively salient stereotypes in social judgment has been complemented by research in the second paradigm that establishes the extent to which stereotyping and prejudice operate as webs of cognitive associations. Like Freud's discovery that mental architecture is revealed by quantifying what most easily comes to mind given targeted conceptual probes, the notion was initially captured in now-classic experiments showing that judgments on "target" words are faster if they are immediately preceded by brief exposure to semantically related, as opposed to unrelated, "prime" words (e.g., Meyer & Schvaneveldt, 1971; Neely, 1976, 1977)—semantic relations now known to be highly correlated with those identified in free-association tasks (for a review see Ratcliff & McKoon, 1994). Extensive research demonstrates that a variety of social beliefs and attitudes function as semantic and evaluative associations across several procedural variations, including conditions in which the prime words are exposed too quickly for people to see (for reviews see Fazio, 2001; Greenwald & Banaji, 1995). For example, simple judgments about target female pronouns are faster after brief exposure to prime words either denotatively or connotatively related to women (e.g., lady, nurse) than words related to men (e.g., gentleman, doctor) and judgments about male pronouns are faster after exposure to prime words related to men than women (Banaji & Hardin, 1996; Blair & Banaji, 1996). Similarly, people are faster to judge words associated with negative stereotypes of African Americans after exposure to black faces than to white faces (e.g., Dovidio, Evans, & Tyler, 1986; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Wittenbrink, Judd, & Park, 1997). Such results have been taken to demonstrate the automatic nature of beliefs or stereotypes when they capture associations between social groups and their common stereotypes, and used to demonstrate the automatic nature of attitudes or preferences when they capture associations between social groups and common evaluations of them.

Research in this tradition suggests the ubiquity with which common prejudice and stereotyping operates among all kinds of people along lines laid down by extant social relations on a variety of dimensions. These include, but are not limited to ethnicity and race (e.g., Nosek, Banaji, & Greenwald, 2002a), gender (e.g., Banaji & Hardin, 1996), sexual orientation (e.g., Dasgupta & Rivera, 2009), body shape (e.g., Bessenoff & Sherman, 2000), the elderly (Perdue & Gurtman, 1990), and adolescents (Gross & Hardin, 2007). Implicit prejudice of this kind develops early in children across cultures

(e.g., Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2006, 2007), and appears to involve specific brain structures associated with non-rational thought (e.g., Cunningham et al., in press; Lieberman, 2000; Phelps et al., 2000).

Characteristics of Implicit Prejudice

Although the identification of the course, consequences, and nature of implicit prejudice continues to evolve in research spanning disciplines, research methodologies, and specific social categories, its fundamental characteristics are now firmly established. Implicit prejudice (a) operates unintentionally and outside awareness, (b) is empirically distinct from explicit prejudice, and (c) uniquely predicts consequential social judgment and behavior. Underlying all claims about the operation of implicit prejudice is the fact that the implicit operation of stereotypes and prejudice is robust and reliably measured, as indicated by hundreds of published experiments (e.g., Banaji, 2001; Greenwald & Banaji, 1995). In addition, research shows that implicit prejudice is subject to social influence, a finding that is important to public policy considerations, although the immediate operation of implicit prejudice is difficult, if not impossible, to control through individual volition,.

The most important characteristic of implicit prejudice is that it operates ubiquitously in the course of normal workaday information-processing, often outside of individual awareness, in the absence of personal animus, and generally despite individual equanimity and deliberate attempts to avoid prejudice (for reviews see Devine, 2005; Dovidio & Geartner, 2004). Evidence of this includes experiments demonstrating that social judgment and behavior is affected in stereotype-consistent ways by unobtrusive and even subliminal manipulations of stereotype salience. Typically in these kinds of experiments, participants attempt to be fair and unbiased and, moreover, exhibit no evidence of knowing that their recent experience included exposure to stereotypes used in their evaluations. Experiments that manipulate stereotype salience subliminally through extremely rapid exposure to words or images make the case especially strongly (for reviews see Bargh, 1999; Devine & Monteith, 1999). Interestingly, implicit prejudice of this kind appears to operate to an equal degree, regardless of the personal characteristics of research participants, including participant social category, and individual differences in related explicit attitudes and implicit attitudes. The implication is that anyone who is aware of a common stereotype is likely to use it when it is cognitively salient and relevant to the judgment at hand (e.g., Hardin & Rothman, 1997; Higgins, 1996).

Complementary evidence that prejudice operates implicitly comes from research using measures of automatic cognitive association, including serial semantic priming paradigms (e.g., Blair & Banaji, 1996), subliminal serial priming paradigms (e.g., Fazio et al., 1995), and startle responses (e.g., Amodio, Harmon-Jones, & Devine, 2003), as well as behavioral interference paradigms like Stroop tasks (e.g., Bargh & Pratto, 1986; Richeson & Trawalter, 2005) and implicit association tasks (IAT; e.g., Greenwald, McGhee, & Schwartz, 1998). Hundreds of experiments using these measures suggest that people are generally surprised to learn that they have implicit prejudices.

A second major characteristic of implicit prejudice is that it is difficult for individuals to deliberately modulate, control, or fake (for reviews see Devine & Monteith, 1999; Dovidio et al., 2004; Greenwald, Poehlman, Uhlmann, & Banaji, 2009). Experiments like Devine's (1989), that demonstrate implicit prejudice through subliminal, unconscious manipulations of stereotype salience, by design preclude individual awareness and control, thereby demonstrating that immediate conscious awareness of stereotyped information is formally unnecessary to produce implicit stereotyping. Similar experiments that manipulate stereotype salience through recent conscious exposure to stereotyped information suggest that implicit stereotyping can occur through the kind of mere exposure to stereotyped information that occurs in the hurly-burly of everyday life in societies that are organized around race, class, and gender (e.g., Rudman & Borgida, 1995). Moreover, research expressly designed to test the success of individuals to control or fake their levels of implicit prejudice as assessed by measures of association show that it is extremely difficult or impossible (Bielby, 2000), whether attitudes are about gays (e.g., Banse, Seise, & Zerbis, 2001), ethnic groups (e.g., Kim, 2003), or gender (e.g., Blair & Banaji, 1996).

Independent of individual attempts to control the operation of implicit prejudice, research shows that it is nearly impossible to consciously correct for effects of implicit prejudice (for one review see Wegener & Petty, 1997). To do so, one must be in the unlikely circumstance of having at once (a) knowledge that implicit prejudice is operating, (b) both the motivation and cognitive capacity to control it, and perhaps most unlikely of all, (c) precise knowledge of the magnitude and direction of the correction needed (e.g., Bargh, 1999; Fazio & Towles-Schwen, 1999). For example, although individual differences in explicit prejudice predict the overt interpersonal friendliness of whites toward blacks, it is individual differences in implicit prejudice that predicts the nonverbal behavior of whites, which is the behavior that, in turn, predicts black attitudes toward whites (e.g., Dovidio, Kawakami, & Gaertner, 2002).

The third critical characteristic of implicit prejudice is that it is empirically distinct from explicit prejudice, including activating distinctive regions of the brain (Cunningham, Nezlek, & Banaji, in press). Although explicit attitudes are often uncorrelated with the implicit operation of prejudice (e.g., Devine, 1989; Fazio & Olson, 2003) and implicit prejudiced associations (e.g., Gross & Hardin, 2007), correlations between implicit and explicit attitudes actually vary widely across studies (e.g., Hoffmann, et al., 2005; Nosek, 2005). A picture of when and why implicit and explicit attitudes are likely to be dissociated has begun to emerge. Boldly explicit prejudice on the basis of race and gender often conflicts with social norms of equity and justice and hence is a domain in which implicit-explicit attitude dissociations often occur. In contrast, in domains in which explicit attitudes do not conflict with consensual social norms, implicit and explicit attitudes are often correlated (e.g., Gawronski, 2002; Greenwald et al., 2009). For example, implicit prejudice is correlated with amygdala activation (Cunningham et al., in press; Phelps et al., 2000), and explicit prejudice is more strongly correlated with prefrontal cortex activation (Cunningham et al., in press; see also Amodio, Harmon-Jones, Devine, Curtin, Hartley, & Covert, 2004). Most importantly, implicit prejudice uniquely predicts related attitudes and behavior over and above explicit prejudice, and

appears to be related to distinct families of social judgment and behavior. Implicit attitudes are associated relatively more with tacit learning, manipulations, and consequences, whereas explicit attitudes are relatively more associated with intentionally controllable behaviors and attitudes (e.g., Olson & Fazio, 2003; Spalding & Hardin, 1999).

Because the unique predictive validity of implicit prejudice is critical to appreciating its implications for policy choices, we now turn to a detailed discussion of this evidence in the context of policy implications.

CONSEQUENCES AND SOCIAL CONTROL OF IMPLICIT PREJUDICE

The existence of implicit prejudice would be of little practical consequence if it were an unreliable predictor of social judgment and behavior, particularly given the growing interest in its potential economic, labor, legal, and policy implications (e.g., Ayres, 2001, Banaji & Bhaskar, 2000; Banaji & Dasgupta, 1998; Chugh, 2004; Greenwald & Krieger, 2006; Jost, Rudman, Bair, Carney, Dasgupta, Glaser, & Hardin, 2009; Kang & Banaji, 2006; Tetlock & Mitchell, 2009). However, research demonstrates the consequential nature of implicit prejudice in a variety of domains, including health, job satisfaction, voting behavior, and social interaction. Our discussion of this evidence is organized around the two paradigms that led to the discovery of implicit prejudice in the first place—the implicit effects of cognitively salient stereotypes and prejudice, and the predictive utility of implicit associations between social groups and their presumed characteristics.

Implicit Effects of Cognitively Accessible Stereotypes and Prejudice

Perhaps the most disturbing aspect of implicit prejudice is that while cognitively salient stereotypes and prejudices operate outside of conscious awareness, they produce qualitative changes in social judgment and behavior. Across some two dozen experiments in which participants are presented with a series of images of social situations and instructed to as quickly and accurately as possible “shoot” if the target is armed and “don’t shoot” if the target is unarmed, the finding is consistent: participants faster and more accurately shoot gun-toting black than white targets and faster and more accurately avoid shooting tool-toting white than black targets (e.g., Correll, Park, Wittenbrink, & Judd, 2002; Correll, Urland, & Ito, 2006). The finding is obtained among both white and black participants alike, and even among professional police officers (Correll, Park, Wittenbrink, Judd, Sadler, & Keese, 2007; Plant & Peruche, 2005; Plant, Peruche, & Butz, 2005). In a similar experimental paradigm in which participants are instructed to distinguish between weapons and hand tools, participants are faster to correctly identify weapons after exposure to black faces than to white faces but faster to correctly identify tools after exposure to white faces than to black faces (Payne, 2001). A follow-up study demonstrated that participants under time pressure are more likely to misidentify tools as guns after exposure to black faces but misidentify guns as tools after exposure to white faces (see also Govorun & Payne, 2006; Payne, Shimizu, & Jacoby, 2005), a finding that

is obtained even among professional police officers (Eberhardt, Goff, Purdie & Davies, 2004).

Such findings have important implications for police officers given the broader finding that police consistently use greater lethal and non-lethal force against non-white suspects than white suspects (e.g., for reviews see Department of Justice, 2001; Geller, 1982). Indeed, Los Angeles police officers judge adolescents accused of shoplifting or assault more negatively and as more culpable when they have been subliminally exposed to words related to common stereotypes about blacks than words that are not related to the stereotypes (Graham & Lowery, 2004).

The implicit use of common stereotypes is not limited to issues of race, but is also seen in matters of age and in instances of gender bias. For example, the behavior of a 17-year-old (but not a 71-year-old) toward a police officer is judged as more rebellious after subliminal exposure to words related than unrelated to common adolescent stereotypes, and the magnitude of the effect is unrelated to individual differences explicit attitudes about adolescents (Gross & Hardin, 2007). And, in a telling experiment involving stereotypes commonly traded in mass media (e.g., beer ads featuring bikini-clad models), recent exposure to sexist versus non-sexist television advertisements was shown to cause men to (a) evaluate a job applicant as more incapable and unintelligent, (b) evaluate her as more sexually attractive and receptive, (c) make more sexual advances to her, and (c) evaluate her as more deserving of being hired (Rudman & Borgida, 1995). Here, too, typical of experiments of this type, the effect of exposure to sexist ads was unqualified by individual differences in explicit endorsement of sexist beliefs and attitudes.

Implicit prejudice and stereotyping is not limited to judgments of others, however, but also affects self-judgment and behavior, especially with regard to intellectual performance. For example, Asian-American women believe they are relatively better at math than verbal skills when they have identified their ethnicity, but better at verbal than math skills when they have identified their gender (e.g., Sinclair, Hardin, & Lowery, 2006). Even more striking are findings that similar manipulations implicitly affect stereotype-related intellectual performance. Consistent with the respective stereotypes, blacks but not whites perform worse on GRE advanced exams when ethnicity is salient (e.g., Steele & Aronson, 1995), and women but not men perform worse on GRE quantitative exams (Spencer, Steele, & Quinn, 1999), and worse on a logic task but not an identical verbal task when gender is salient (Cheung & Hardin, in press). Similarly, older but not younger people perform worse on memory tasks when age is salient (e.g., Levy, 1996), and students from low but not high socioeconomic backgrounds perform worse on intellectual tasks when economic status is salient (e.g., Croizet & Claire, 1998; Harrison, Stevens, Monty, & Coakley, 2006). Moreover, gender and ethnic stereotypes can interact to produce especially large decrements in the math and spatial performance of Latina women (e.g., Gonzales, Blanton, & Williams, 2001). Such performance discrepancies are also evident via fMRI data. For example, women not only perform worse on mental rotation tasks when negative stereotypes are salient but performance decrements are correlated with greater activity in brain regions associated with emotion and implicit prejudice (Wraga, Helt, Jacobs, & Sullivan, 2007).

Congruent with evidence discussed throughout this paper, the consequences of implicit prejudice to the self echo the principled operation of implicit prejudice more generally. Stereotypes are double-edged swords, and hence can sometimes boost performance. For example, Asian-American women perform better on quantitative tests when their ethnicity is salient than when their gender is salient (e.g., Shih, Pittinsky, & Ambady, 1999). Whether positive or negative, implicit stereotype threat effects emerge early in development, and appear with increasing strength throughout elementary and middle school (e.g., Ambady, Shih, Kim, & Pittinsky, 2001). Finally, evidence suggests that these kinds of effects are more likely to occur when the relevant stereotypes are made salient subtly rather than blatantly (Shih, Ambady, Richeson, Fujita, & Gray, 2002), congruent with our broader argument about the insidious role that implicit prejudice plays in everyday social cognition and behavior.

Implicit Prejudice as Cognitive Associations

Common stereotypes and prejudice not only affect social judgment and behavior implicitly, but several measures of implicit attitudes have been developed (for reviews see Olson & Fazio, 2003; Wittenbrink & Schwartz, 2007), and research based on hundreds of studies shows that implicit attitude measures are stable over time, internally consistent, and reliably predict related judgments and behaviors, including political attitudes, voting, academic achievement scores, consumer preferences, social evaluation, hiring decisions, and verbal and non-verbal affiliation (for reviews see Fazio & Olson, 2003; Nosek, 1995; Perugini, 2005). According to a recent meta-analysis (Greenwald et al., 2009), although implicit and explicit attitudes are commonly uncorrelated with each other, implicit measures are, on average, comparably correlated with criterion measures and usually more strongly correlated with measures of socially sensitive behavior than explicit measures. In short, where stereotyping and prejudice are concerned, implicit measures generally predict behavior better than explicit measures.

Unlike explicit measures in which predictive validity often declines substantially for socially sensitive criteria, the predictive validity of implicit measures typically does not. For example, in a study reported by Rudman and Ashmore (2007), implicit prejudice uniquely predicts self-reported hostile behavior among whites toward blacks, including ethnic slurs, ostracism, and verbal and physical abuse, and does so over and above explicit attitudes and prejudice. In a second study, implicit prejudice among whites toward Jews, Asians, and blacks was shown to predict preferences to de-fund campus organizations representing Jews, Asians, and blacks, respectively—again over and above explicit attitudes and prejudice. Implicit prejudice can also predict prejudice-related judgments when explicit attitudes do not, particularly in cases of intergroup relations (reviewed in Greenwald et al., 2009). For example, unlike explicit prejudice, implicit racial prejudice among whites predicts quickness to perceive anger in black faces but not white faces (Hugenberg & Bodenhausen, 2003).

It is one thing for individual differences in implicit prejudice to predict attitudes and judgment, but it is quite another for it to predict behavior. Implicit attitudes predict

nonverbal friendliness and discomfort of whites when interacting with blacks (Dovidio et al., 2002; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997), and how positively blacks perceive whites they interact with (Dovidio et al., 2002; Fazio et al., 1995; Sekaquaptewa, Espinosa, Thompson, Vargas, & von Hippel, 2003). For example, in research particularly telling for common educational and school situations, Richeson and Shelton (2005) found that in face-to-face interpersonal interactions individual differences in implicit prejudice were more apparent to black than white perceivers, and more apparent when whites interacted with blacks than with other whites (see also Perugini, O’Gorman, & Prestwich, 2007; Ziegert & Hanges, 2005).

Implicit attitudes not only affect social judgment and behavior relative to others, but are important predictors of one’s own behavior and self-evaluation. For example, implicit but not explicit self-esteem predicts anxious behavior in self-threatening situations but not unthreatening situations (Spalding & Hardin, 1999; see also Asendorpf et al., 2002; Egloff & Schmukle, 2002). Women who implicitly associate romance with chivalry report less interest in economic and educational achievement (Rudman & Heppen, 2003), and implicit dissociations between the concepts of math and women predict lower quantitative SAT scores among women (Nosek, Banaji, & Greenwald, 2002b). Finally, a surprising number of African Americans exhibit implicit preference for whites over blacks (e.g., Nosek, Banaji, & Greenwald, 2002a). Variability in implicit anti-black prejudice among African Americans predicts stated preferences for working with white versus black partners on intellectually demanding tasks, and does so independently of explicit attitudes (Ashburn-Nardo, Knowles, & Monteith, 2003), a finding suggesting that the general tendency to favor ingroups over outgroups may be trumped by implicit stereotypes relevant to the task at hand (see also Rudman, Feinberg, & Fairchild, 2002).

Most of the research on the predictive validity of implicit prejudice discussed thus far involves undergraduate participant samples in laboratory settings, yet one might rightly wonder whether implicit prejudice will matter in daily tasks, big and small. One reason to believe that it will is research showing that implicit attitudes predict behavior and judgment among people who have finished their formal education, on dimensions that matter to people besides college students, and does so on a variety of dimensions of undeniable “real-world” application. For example, implicit attitudes predict suicide attempts (Glashouwer, de Jong, Penninx, Kerkhof, van Dyck, & Ormel, in press; Nock & Banaji, 2007; Nock, Park, Finn, Deliberto, Dour, & Banaji, in press), severity and treatment outcomes for phobia and panic disorders (e.g., Teachman, Marker & Smith-Janik, in press; Teachman, Smith-Janik, & Saporito, 2007; Teachman & Woody, 2003), condom use (Marsh, Johnson, & Scott-Sheldon, 2001), smoking status (Swanson, Rudman, & Greenwald, 2001), alcohol consumption (Weirs, Woerden, Smulders, & de Jong, 2002), and consumer preferences for consumer goods like yogurt, beverages, and fast-food restaurants (Maison, Greenwald, & Bruin, 2004). In addition, reductions in implicit romantic attraction predict the subsequent breakup of committed relationships (Lee, Rogge, & Reis, 2009).

In addition to the large and growing literature demonstrating the predictive validity of measures of implicit attitudes in matters of everyday life, research shows that implicit prejudice predicts behavior outside the laboratory. For example, implicit preference among Swedish job recruiters for native Swedes over Arabs predicts interview preferences (Rooth, 2009). Overall, native Swedes were more than three times more likely to receive interview call-backs than equally qualified Arabs.

Several studies demonstrate that implicit prejudice predicts voting behavior, including the historic 2008 election in which Barack Obama became the first African American to be elected President of the United States. For example, in the week before the election, implicit anti-black prejudice predicted intention to vote for John McCain over Obama, and did so independently of self-reported conservatism (Greenwald, Smith, Sriram, Bar-Anan, & Nosek, in press). Another study found that the degree to which participants implicitly associated America more with McCain than Obama predicted intention to vote for McCain (Devos & Ma, 2010).

Implicit prejudice not only predicts voting intentions before elections but also reported voting behavior after elections. Voters were substantially less likely to report voting for Barack Obama, and exhibited more negative attitudes toward health care reform, the greater their implicit prejudice (Knowles, Lowery, & Shauberg, 2009), and, in a follow-up study conducted nearly a year after the election, implicit prejudice remained a significant predictor of negative attitudes toward Obama. Moreover, implicit prejudice predicted negative attitudes about health-care reform when it was ascribed to Obama but not when the identical reform was ascribed to Bill Clinton. Similar findings have obtained in studies of the Italian electorate, as well (e.g., Acuri, Castelli, Galdi, Zogmaister, & Amadori, 2008; Galdi, Arcuri, & Gawronski, 2008; Roccoato & Zogmaister, in press).

Another area of society in which the real-world operation of implicit prejudice is implicated is in the practice of medicine in which differential treatment as a function of ethnicity is a well-documented case in point. A recent study of emergency-room treatment of more than 150,000 patients complaining of severe pain over a 13-year span found that whites were given powerful opioid pain killers more than blacks and Hispanics, with evidence suggesting that the disparity is due more to under-treatment of minorities rather than over-treatment of whites (Pletcher et al., 2008). Racial disparities are well documented for treatment of cardiovascular disease (for a review see Kressin & Petersen, 2001) as well, including expensive treatments for acute myocardial infarction (e.g., Petersen, Wright, & Peterson, 2002).

New evidence suggests that at least one cause for such findings may be individual differences in implicit prejudice among treating physicians. In a study that assessed both explicit and implicit attitudes towards whites and blacks and treatment recommendations for hypothetical patients who differed only as a function of an experimental manipulation of race, emergency room physicians exhibited strong implicit preference for whites over blacks, and also strong implicit associations of blacks versus whites for being uncooperative, despite exhibiting no explicit preferences for whites or differences in

cooperativeness between whites and blacks. Importantly, however, although explicit attitudes did not predict emergency treatment recommendations, implicit attitudes did. Greater implicit prejudice predicted an increasing likelihood to treat whites and decreasing likelihood to treat blacks exhibiting identical symptoms (Green, Carney, Pallin, Ngo, Raymond, Iezzoni, & Banaji, 2007). By extension, and perhaps unsurprisingly, implicit racial bias among physicians negatively predicts African-American patient satisfaction with their physicians (Penner, Dovidio, West, Gaertner, Albrecht, Dailey, & Markova, in press).

Consistent with laboratory findings suggesting that implicit attitudes should be uniquely strong predictors of counter-normative behavior, implicit negative attitudes toward injection drug users among drug and alcohol nurses who treat them predicts nurses' stated intentions to leave drug and alcohol nursing, over and above relevant explicit attitudes (von Hippel, Brener, & von Hippel, 2008)², corroborating laboratory demonstrations of the unique predictive power of implicit measures when judgments are potentially non-normative (Greenwald et al., 2009). In other words, although the medical model frames drug and alcohol abuse as an involuntary disease to be treated, and as such abusers should be worthy of sympathy, the day-to-day experience with a population known to be difficult and challenging among a part of the medical community that is known to have a high job turnover rate may make expressly negative attitudes about abusers counter-normative. In addition, it is implicit prejudice (but not explicit prejudice) that mediates the well-documented relation between stress and intention to change jobs (von Hippel et al., 2008).

In short, research demonstrating the real-world applicability of implicit attitudes continues to grow, and it is no longer credible to hide behind the view that the predictive validity of implicit prejudice on judgment and behavior is a quirk of the laboratory (see also Jost et al., 2009).

Social Control of Implicit Prejudice

Given evidence that implicit prejudice is reliably captured and measured, and that it is consequential, ubiquitous, and stubbornly immune to individual attempts to control it, what hope is there for effective policy solutions? Although implicit prejudice presents challenges to public policy formulations based on outdated notions of the nature of prejudice, recent research shows that it behaves in predictable ways that conform to fundamental principles of social and cognitive psychology. Implicit prejudice reflects stable social relationships and organization by reflecting social identities, group categorizations and status, as well as general preferences for the self, similar others, and ingroups (e.g., Bosson et al., Greenwald et al., 1998; Spalding & Hardin, 1999). Moreover, evidence suggests that implicit prejudice is responsive to social dynamics, including (a) relative intergroup status (e.g., Rudman et al., 2002), (b) minimal group categorization (Ashburn-Nardo, Voils, & Monteith, 2001), (c) chronic and temporary changes in the salience of prejudice-related information (e.g., Dasgupta & Greenwald,

² Specific intention to change jobs is the strongest known predictor of actual voluntary job changes (van Breukelen, van der List, & Steensma, 2004).

2001), and (d) friendly intergroup contact (e.g., Tam, Hewstone, Harwood, Voci, & Kenworthy, 2006). Implicit prejudice can also increase and decrease as a function of conditioning which is consistent with the fundamentals of learning theory (e.g., Bargh, 1996; Fazio & Olson, 2001, 2002, 2003; Hardin & Rothman, 1996), and it generally conforms to principles of cognitive consistency (e.g., Greenwald et al., 2002).

An obvious but important indication of the way implicit prejudice reflects social dynamics is the fact that it so well tracks the character of chronic social organization, including relative group power, social status, and concomitant stereotypes. For example, although ingroup preference is a common feature of implicit prejudice (e.g., Greenwald et al., 1998), at least as important are findings that it reflects social status. Members of high-status groups in the U.S. not only exhibit greater implicit group favoritism than low-status groups but do so as a function of their relative status, whether they are rich, white, skinny, or Christian (e.g., Nosek et al., 2002; Rudman, Feinberg, & Fairchild, 2002). However, at the same time, although ingroup preference is common in both implicit and explicit prejudice, outgroup preference is hardly rare (e.g., Jost & Banaji, 1994) and also closely aligns with relative group status. For example, members of low-status groups are more likely to implicitly favor dominant outgroups to the extent that their ingroup is low in status despite exhibiting strong explicit ingroup favoritism (Pelham, Jost, & Carvallo, 2002; Rudman et al., 2002).

Implicit prejudice not only reflects stable social and organizational hierarchies, but research shows that changes in social organization predict corresponding changes in implicit prejudice which has promising implications for public policy. Friendly intergroup contact is shown to reduce both implicit and explicit prejudice alike (e.g., Henry & Hardin, 2006; Turner, Hewstone, & Voci, 2003). In one example, implicit prejudice towards gay and lesbian people is found to be lower for people who report high levels of long-term contact with gay and lesbian people as well as for people who report being exposed to gay-positive media (Dasgupta & Rivera, 2008; Fingerhut, Cheung, & Hardin, 2009). Similarly, implicit prejudice toward the elderly is lower among college students the more friendships they report having with older people (Tam et al., 2006). In yet another example, implicit prejudice is found to be lower between British and South-Asian children in England to the extent that they report outgroup friendships, and implicit prejudice is reduced even among children who report no outgroup friendships themselves but who report having friends who do (Turner et al., 2003). Causal modeling in this research indicates that findings are more consistent with intergroup friendships affecting implicit prejudice than implicit prejudice affecting friendship patterns (Tam et al., 2006; Turner et al., 2003), a conclusion corroborated experimentally. For example, implicit prejudice among white college freshmen is reduced more over the course of their first school term if they were randomly assigned to a black roommate than a white roommate (Shook & Fazio, 2007).

Although friendly intergroup contact generally reduces implicit intergroup prejudice, recent findings demonstrate that intergroup contact doesn't always have purely positive outcomes. For example, anti-adolescent implicit prejudice among adolescents is greater to the degree that they report having close friendships with adults (Gross &

Hardin, 2007). Evidence also suggests that relatively stable aspects of social hierarchy complicate matters. In research involving blacks and whites in Chicago, and Christians and Muslims in Lebanon, implicit intergroup prejudice is shown to be lower to the degree that participants report outgroup friendships (Henry & Hardin, 2006). However, results also indicate that implicit prejudice reduction is greater for low-status group members toward high-status group members than it is for high-status group members toward low-status group members. That is, in this study, outgroup friendships predict greater reductions in implicit prejudice for Muslims than Christians and for blacks than whites due to their places in the social hierarchy.

Research also indicates that implicit prejudice is affected by social dynamics throughout development (e.g., Baron & Banaji, 2006; Rutland et al., 2005) and research suggests that the development of implicit prejudice is likely to be bound up with interpersonal dynamics involving interpersonal identification and inter-subjectivity (e.g., Hardin & Conley, 2001; Hardin & Higgins, 1996). For example, implicit intergroup prejudice between Korean and Japanese students in the U.S. is greater to the degree that participants remain connected to their ethnic heritage as indicated by linguistic fluency (Greenwald, McGhee, & Schwartz, 1998). People exhibit more positive implicit attitudes toward women to the degree that they report being raised more by their mothers than their fathers (Rudman & Goodwin, 2004). And, implicit racial prejudice among white 4th- and 5th-grade children is correlated with the explicit prejudice of their parents, but only to the extent that they identify with their parents (Sinclair, Lowery, & Dunn, 2004), and the implicit prejudice of mothers predicts racial preferences exhibited by their 3-6 year-old children (Castelli, Zogmaister, & Tomelleri, 2009).

Research demonstrating the long-term social determinants of implicit prejudice is likely to be either encouraging or depressing, depending upon one's sense of the likelihood of broad, long-term changes in social organization and culture. It is important, however, to remember that such things do happen. What changes in implicit prejudice might be revealed if the measures had been in existence long enough to reflect suffrage, women's mass entry into the workforce during World War II, the civil rights movement, and 20th-century urban white flight, to name just a few societal sea-changes?

Although we believe that culture-wide changes in implicit prejudice will require culture-wide changes in social organization and practice, another way in which implicit prejudice obeys principles of social psychology offers some promise of more immediate, if local, opportunities for progress. Research shows that, implicit prejudice is subject to the demands of immediate situations and interpersonal dynamics, much like human behavior more generally (e.g., Ross & Nisbett, 1991). For example, white participants exhibit lower implicit prejudice in the presence of a black experimenter than a white experimenter (Lowery, Hardin, & Sinclair, 2001; Richeson & Ambady, 2003). Interestingly, however, Lowery and colleagues (2001) also found that this automatic social tuning effect did not occur among Asian-American participants, whose implicit prejudice was reduced only when the experimenter expressly told them to avoid prejudice. This finding suggests that although the norm to avoid prejudice may operate

tacitly for some, it may require explication for people who do not yet recognize their potential role as ciphers of prejudice.

Research also suggests that the interpersonal regulation of implicit prejudice is due in part to a motivation to affiliate with others who are presumed to hold specific values related to prejudice, as implied by shared reality theory (e.g., Hardin & Conley, 2001). For example, participants exhibit less implicit racial prejudice in the presence of an experimenter wearing a t-shirt with an anti-racism message than a blank t-shirt, but only when the experimenter is likeable (Sinclair, Lowery, Hardin, & Colangelo, 2005). When the experimenter is not likeable, implicit prejudice is actually greater in the presence of the ostensibly egalitarian experimenter. In addition, social tuning in these experiments is mediated by the degree to which participants like the experimenter, providing converging evidence that interpersonal dynamics play a role in the modulation of implicit prejudice as they do in other dimensions of social cognition (Hardin & Conley, 2001; Hardin & Higgins, 1996).

As regards public and personal policy, these findings suggest that a public stance for egalitarian values is a double-edged sword, and a sharp one at that. Although it may reduce implicit prejudice among others when espoused by someone who is likeable and high in status, it may backfire when espoused by someone who is not likeable or otherwise of marginal status. This finding suggests one mechanism by which common forms of “sensitivity training” in service of the reduction of workplace sexism and racism may be subverted by interpersonal dynamics, however laudable the goals.

Demonstrating the utility of specific interventions to reduce implicit prejudice, Rudman, Ashmore, and Gary (2001) found that diversity education with a likeable black professor reduces implicit prejudice and does so through liking for the professor, increased friendships with other African Americans, and reduced fear of blacks. Likewise, thinking about gay-positive role models reduces implicit prejudice for those with low contact with gay and lesbian people to the level of those with high contact and increases endorsement of gay-positive attitudes, including legalizing civil unions for gays and lesbians (Dasgupta & Rivera, 2008).

In a cautionary note, however, lack of long-term exposure to a particular group can sometimes trigger greater implicit prejudice when a member of the group is present. In one example, people who report having no gay friends at all exhibit greater implicit anti-gay prejudice when a male experimenter incidentally mentions his “boyfriend” than when he mentions his “girlfriend.” Similarly, women who report having no lesbian friends exhibit greater implicit anti-lesbian bias when the experimenter is from a gay and lesbian organization (Fingerhut, Cheung, & Hardin, 2009). This research complements research showing immediate social influence on implicit prejudice by suggesting that as powerful as immediate social norms might be, implicit prejudice is ultimately expressed differently from individual to individual as a function of attitudes presumed to be held by others in relevant long-term social relationships, sometimes in subtle or even contradictory ways, as it does on other dimensions of social cognition (e.g., Hardin & Higgins, 1996).

Research demonstrating that implicit prejudice is subject to social influence is broadly consistent with principles of information processing (for a review see Blair, 2002). Implicit racial prejudice is reduced (a) when admired black exemplars are used (e.g., Dasgupta & Greenwald, 2001; cf. De Houwer, 2001), (b) after seeing an image of blacks at a friendly barbeque versus unfriendly street corner (Wittenbrink, Judd, & Park, 2001), and (c) imagining the virtues of multicultural education (Richeson & Nussbaum, 2004). In contrast, implicit racial prejudice is increased after exposure to violent rap music (Rudman & Lee, 2002). Implicit gender stereotyping is reduced for those who have recently been exposed to images of female leaders (Dasgupta & Asgari, 2004) or have recently imagined a powerful woman (Blair & Ma, 2001). This research suggests that simple images and text in immediate situations can affect levels of implicit prejudice for those in the situation in ways that are broadly congruent with construct accessibility theory (e.g., Bargh, 1996), which is the “common language” that underlies most information-processing theory in social cognition (Higgins, 1991).

Taken together, research on the social control of implicit prejudice is broadly congruent with the Marxian maxim that egalitarian societies elicit egalitarian-minded people as well as the Skinnerian maxim that admirable individual behavior is elicited by situations that reinforce admirable behavior. Indeed, the methodological and theoretical advances that have transformed the understanding of the nature of prejudice—including sometimes-puzzling relations between implicit and explicit prejudice—resonates with what Skinner argued about the relation between scientific advances and the understanding of human nature more generally:

“The line between public and private is not fixed. The boundary shifts with every discovery of a technique for making private events public... The problem of privacy may, therefore, eventually be solved by technical advance.”

—*B.F. Skinner, 1953, p.282*

CONCLUSIONS

It is not far-fetched to argue that successful policy solutions to the problem of prejudice are best pursued in light of the science of the nature of prejudice. Research in recent decades has revealed both the insidious capacity of prejudice to operate implicitly—unwittingly, unintentionally, and unavoidably—as well as its course, consequences, and control at the nexus of individual cognition and social relations. In some ways, the transformative understanding of the nature of prejudice brings full circle the story of human nature since its inception in American social psychology in the mid-20th-century work of Sherif, Lewin, Asch, and others as an attempt to understand how seemingly good people can participate in genocide, and captured in Hannah Arendt’s memorable phrase, “the banality of evil.”

Indeed, the most important thing to know about the nature of prejudice is that it is ever present in human behavior and cognition. It remains sufficiently in the background such that it eludes conscious awareness and immediate individual control, yet it is often

consequential in everyday life. Its capacity to affect social judgment and behavior without personal animus or hostility is dismissed or ignored at some peril, for a continued focus on the problem of prejudice as a result of the non-normatively hostile behavior of the few is likely to distract policy makers from adopting strategies more strongly rooted in the science of the many. What remains are questions about how best to deal with these discoveries in shaping personal and public policy—questions that are in this light only beginning to receive the empirical attention they deserve.

What must enter into any policy computation are additional facts about the nature of prejudice beyond the primary idea that banality is its *modus operandi*. We must add to this the idea that prejudices and stereotypes are rooted in social consensus, they are not random. Within a given society, the likes, dislikes, and beliefs that constrain some and privilege others occur in patterns that systematically oppress subordinates while further ingraining the superiority of the dominants. Were the effects of prejudice and stereotypes less systematic, policy intervention may be less needed because their effects may be said to cancel each other out. However, when, for example, over 80 percent of American whites and Asians show anti-black bias and over 90 percent of Americans show anti-elderly bias, we must pay heed. Policies that are willing to take into account the presence of implicit forms of prejudice and discrimination as a given will be the more forward thinking instruments to change because they will be rooted in a truth about human nature and social contexts.

Further, for societies that derive their sense of “good character” on the basis of personal accomplishment and meritocracy, research on implicit prejudice poses particularly thorny problems. The research we reviewed suggests that behavior is shaped by the social jostling and sloshing “around” the individual, unbeknownst to the person and those around, suggesting that the problem of implicit prejudice may be especially insidious in a society that celebrates, evaluates, and is organized around individual meritocracy. Indeed, research shows that beliefs in meritocracy pose special problems for members of stigmatized groups (e.g., Jost & Burgess, 2000; Jost & Thompson, 2000). For example, Filipina domestic workers in Hong Kong, as well as women in the U.S., devalue the monetary value of their work more if their group identity is salient, but do so only to the degree that they endorse system-justifying attitudes related to meritocracy (Cheung & Hardin, in press). The aggregation of these kinds of effects, both large and small, but systematically organized across situations and social roles, suggest at the very least the possibility that even incrementally small biases may be expressed through actions that create a large divide among people.

Research demonstrating effects of stereotypes and prejudice on behavior give direction to policy makers for the types of behavior most in need of their attention. It is our contention that locating the problem of prejudice in a few problematic individuals and designing solutions to the problem around this view is to miss the point. The profound implication of the discovery of implicit prejudice is that anybody is capable of prejudice and stereotyping, whether they know it or not, and whether they want to or not. Therefore, given the implicit operation of prejudice and stereotyping and its ubiquitous nature, we believe that solutions should focus on identifying the enabling conditions that

call out prejudice and stereotyping across individuals rather than focusing on identifying the rotten apples. Once identified, we must focus on the enabling conditions that promote egalitarianism and healthy individuation. What kinds of situations bring out implicit egalitarian attitudes? Congruent with well-documented principles identified across the behavioral and mind sciences, and corroborated in research on implicit prejudice, social situations populated with powerful, likeable people who are known or assumed to hold egalitarian values implicitly call out like minds in those around them.

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