How and Why Implicit Attitudes Should Affect Voting

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This article provides a foundation for understanding the role of implicit biases in political behavior, particularly implicit racial attitudes and voting behavior. Although racial attitudes have rarely played a major direct role in American presidential politics until 2008, numerous local, state, and federal elections are held every year in the United States that involve minority candidates. As a result, the implications are considerable.

This article connects the cognitive psychological science of memory—specifically *implicit* memory—to the social psychological study of implicit attitudes, stereotyping, and prejudice, and then to political psychology. The overwhelming evidence from cognitive psychology that memory is *associative*, and that it can and does operate (i.e., gets stored and retrieved) outside of conscious awareness and control, paired with the social psychological insight that memory activation is influential in person perception, provides the strong theoretical foundation for expecting implicit biases to uniquely predict part of electoral behavior. The social and political psychological extensions of implicit memory to interpersonal and intergroup judgments are theoretically uncontroversial and methodologically rigorous.

WHERE IT ALL STARTED: THE COGNITIVE PSYCHOLOGY OF IMPLICIT MEMORY

We cannot have a meaningful exposition of implicit social or political cognition without understanding basic implicit cognition, and specifically that it relies on an associationist theory of memory. Cognitive psychologists in the 1960s and 1970s (during psychology's "Cognitive Revolution") mapped the structure of human memory (e.g., Bruner 1957; Meyer and Schvaneveldt 1971, 1976; Neely 1977; Rosch 1975), and a major methodological component of that was the sequential priming methods and related reaction time measures we use today. The fundamental idea is that memory works in a cascading fashion. As one mental construct ("knowledge representation") is activated, it automatically (i.e., without subjective experience, let alone intention or effort) activates associated constructs. For example, the exposure to the word (or a picture of a) "brick" instantaneously activates memory for the concept of "building" as does "feather" for "bird" and "nurse" for "doctor." In other words, concepts and categories are linked in our memory, and so activation of the memory of one concept triggers another (with which it is mentally associated), and so on. Although revolutionary at the time, this idea is now utterly uncontro-versial. Psychologists (and philosophers) quibble only over the complexity of these associative networks, and the manner in which the memories are physically stored in the brain.

Almost as exciting as the theory of associationist memory is the ingenious set of methods that were developed for studying it—methods that evolved to help demonstrate that these mental associations (memories) can reside and be activated outside of conscious awareness or control, that is, *implicitly* and *automatically*. The primary method was the sequential priming (a.k.a., semantic priming) procedure (e.g., Rosch 1975). Described elsewhere (e.g., Bargh and Chartrand 2000), including Hedrick and Ksiazkiewicz in this volume, this simple approach involves having research subjects respond to a "target" stimulus (a word or picture) that is preceded by the presentation of a "prime." The response could be a categorization (e.g., words like *house* and *sparrow* into buildings vs. birds categories), a "lexical decision" (e.g., indicating if letter strings like *house* and *eohus* are words or nonwords), or a simple pronunciation of the word.[1]

The insight of sequential priming is that responses to targets will be faster when they are preceded by semantically associated primes (i.e., those that share meaning and are therefore connected in memory). Neely (1977) found that this was true even when the prime was presented for a very short period (150 ms) and the target followed very closely (100 ms later). In fact, Neely found that while subjects could do a good job of using a conscious strategy for responding to targets vis a vis primes when the interstimulus interval (ISI; the time between the offset of the prime and the onset of the target) was long (2000 ms), their responses to targets were uncontrollably influenced by primes when the ISI was too short (100 ms) to allow conscious control.

Even more compelling demonstrations of nonconscious semantic priming and mental construct activation came from studies using subliminal presentation of primes (e.g., Greenwald, Draine, and Abrams 1996; Greenwald, Klinger, and Liu 1989). In these studies, words or images are presented in a fashion that masks or degrades them and/or they are presented too briefly to be consciously recognized. Subjects are typically unaware that they have seen anything, let alone what it was. Nevertheless, subliminal primes tend to facilitate responses to semantically related targets.

Early studies relied on high-speed slide projectors called tachistoscopes, but with the advent of modern PCs, anyone with the right software can effectively present subliminal stimuli (note that, contrary to folklore, subliminal priming effects

are consistently small and those self-help-while-you-sleep-tapes do not work [Greenwald et al. 1991]). For a target to be processed more quickly as a function of the semantic relatedness of a priming stimulus, the meaning of that prime on that dimension must have been activated in memory. The undeniable implication of this evidence is that people rapidly, effortlessly, and automatically process stimuli, including words, on a semantic level even when conscious involvement is precluded.

WHAT THE SOCIAL PSYCHOLOGISTS DID

In the rapidly emerging tradition of social cognition, social psychologists in the 1980s co-opted methods for studying implicit memory to study implicit *person* memory (Banaji and Greenwald 1994; Greenwald and Banaji 1995). In particular, building on the semantic priming paradigm, social psychologists began exploring implicit stereotypes (Dovidio, Evans, and Tyler 1986; Gaertner and McLaughlin, 1983) by pairing racial category primes (e.g., black, white) with positive and negative trait words

The early demonstrations of implicit stereotyping (Dovidio et al. 1986; Gaertner and McLaughlin 1983) were a compelling application of semantic priming, but their relatively long ISIs precluded strong conclusions about automaticity in stereotyping. This was rectified by Blair and Banaji (1996), who demonstrated implicit gender stereotyping with much shorter ISIs, and showed that subjects had great difficulty overriding the activation of implicit stereotypes, even when given a specific strategy. Furthermore, negative racial stereotypes have been activated with subliminal race primes (e.g., Devine 1989).

In a pivotal set of experiments, Fazio et al. (1995) extended the early research on automatic attitude activation (Fazio et al. 1986) to racial attitudes. Motivated mostly by an interest in testing the limits of automatic attitude activation with a socially undesirable attitude (racial preference), Fazio et al. (1995) replaced the positive and negative word primes with photographs of black and white men's faces. They found that white subjects were faster to evaluate positive targets after

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(e.g., honest, aggressive), finding that research subjects tended to be faster to categorize positive (negative) targets preceded by white (black) primes. Fazio et al. (1986) closely applied Neely's (1977) methodology for studying automatic memory activation to study "automatic attitude activation." Working with Fazio's definition of an attitude as an "object-evaluation association," they found that positive and negative word primes accelerated the speed with which subjects evaluated (categorized as good or bad) positive and negative targets, respectively. Note that this occurred under the stimulus presentation timing conditions (short stimulus onset asynchrony) that Neely had demonstrated to preclude controlled responding. Again, the implication is straightforward and powerful: Subjects would not be faster to evaluate target words as a function of the valence of the primes if they were not also evaluating the primes.

In Fazio et al.'s experiment, participants were also instructed to ignore the primes, but they clearly were not able to; the activation of the attitude (object-evaluation association) toward the prime was automatic and uncontrollable. Bargh et al. (1996) subsequently showed a similar pattern of results with a mere pronunciation task—even when just reading words, with no instruction to evaluate them, people tend to read them faster when they are preceded by words with similar evaluative valence (good-good and bad-bad pairs). This speaks to the spontaneity and automaticity with which we make evaluative judgments. Greenwald, Draine, and Abrams's (1996) demonstrations that evaluative priming occurs even when the primes are presented subliminally (and it should be noted that the authors met very rigorous tests of subliminality) cap the evidentiary mound with regard to the existence of implicit (nonconscious) evaluation.

white face primes and negative targets after black face primes. When they constructed an index of automatic racial preference for each experimental participant by calculating the difference in relative response time for black-bad and white-good versus black-good and white-bad pairings, they found that individual variation in automatic racial preference was not correlated with the most widely used questionnaire measure of anti-black bias, the Modern Racism Scale (MRS; McConahay 1986). At first blush, this might give one concern about the construct validity of the implicit measure (or the MRS, or both). However, in the same set of studies, Fazio et al. (1995) showed that scores on the MRS varied considerably as a function of the race of the questionnaire administrator when administered in a relatively un-anonymous circumstance. When Fazio et al. (1995) examined the relation between the implicit index and MRS taking into account *motivation to control prejudice* using a new scale asking for dis/agreement with items like "It's never acceptable to express one's prejudice," a clear, positive relation emerged for those scoring low in motivation to control prejudice. Furthermore, Fazio et al. (1995) found that scores on the individual implicit racial attitude index correlated with the friendliness exhibited toward a black experimenter (stronger anti-black attitudes were associated with less-friendly behavior) (see also e.g., Dovidio et al. 1997; Dovidio, Kawakami, and Gaertner 2002; Richeson and Shelton 2005).

Research of this sort, demonstrating implicit activation of prejudicial associations with social (e.g., gender, race) categories, led Banaji and Greenwald (1994, 2013; Greenwald and Banaji 1995) to herald an era where implicit attitudes could be measured reliably. Soon after, these scientists developed

what has become one of the most widely used social scientific instruments, the implicit association test (IAT; Greenwald, McGhee, and Schwartz 1998). The IAT can be thought of as a descendant of sequential priming. It measures the relative facility of responding (based on reaction time) when categories are combined and thereby affords an inference about the strength of association between these concepts in one's memory. However, whereas sequential priming requires two stimuli per trial, the IAT has only one stimulus (word or picture) per trial—the pairing comes in the use of only two response keys to sort into four categories (e.g., good, bad, black, white). If you have not heard a description or seen a demonstration of an IAT, visit www.projectimplicit.org for a hands-on demonstration.

The primary advantage of the IAT is that it yields large effects relative to other implicit measures, and that it has good reliability and construct validity (Cunningham, Preacher, and Banaji 2001; Nosek, Hawkins, and Frazier 2011). The availability of data from hundreds of thousands of IAT tests conducted via the Internet on the Project Implicit website allows investigators to conduct extremely highly statistically powered tests of reliability and validity (e.g., Nosek 2005; Nosek and Smyth 2007). There has been a proliferation of independent studies using IATs, and the many methodological variations on it (see Nosek et al. 2011), measuring a wide range of implicit attitudes and beliefs, and meta-analyses reveal it to have good predictive validity vis a vis both measures of related constructs (Hofmann et al. 2005) and behaviors (Greenwald et al. 2009). A substantial body of evidence demonstrates that

written about "dual processes" (i.e., distinct mental systems; Sherman, Gawronski, and Trope, in press), there is good reason to believe that what we today call implicit and explicit attitudes reflect points on or near opposing poles of a consciousness continuum (Sherman 2009).

RELATING IMPLICIT AND EXPLICIT ATTITUDES

As noted above, absolutist distinctions between implicit and explicit attitudes are obsolescent. The original caricature was that implicit measures influence *spontaneous* (rapid, thoughtless) judgments and behaviors and explicit measures influence *deliberative* (slower, thoughtful) judgments and behaviors. To be sure, strong empirical evidence supports these general affinities (Dovidio et al. 1997). In political science parlance, this might be similar to the distinction between "easy" and "hard" issues (Carmines and Stimson 1980). It is not that there is no distinction; rather, it is just not a true dichotomy.

Indeed, implicit and explicit measures have been shown to contribute unique variance to outcomes, such as voting, as described previously. But voting is a putatively deliberative behavior, so why would implicit measures explain any variance above and beyond explicit measures and other traditional predictors like party identification? Because, in Sherman's (2009) terms, no human decision-making process is "process pure." The activation of a mental construct (memory) may occur purely implicitly (as demonstrated by subliminal priming studies), but anything involving an observable response is likely to have at least some conscious intention involved. Likewise, even something as putatively delibera-

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IAT measures predict very consequential behaviors (see Jost et al. 2009 for a review), including, as will be discussed soon, voting.

Initial reactions to implicit measures like the IAT tended to regard them as indexes of peoples' "true" attitudes and beliefs. Granted, they reflect relatively unvarnished dispositions because they are not subject to the conscious access or control of the holder. In the realm of socially sensitive or undesirable attitudes like racial bias, this means they are less prone to deliberate distortion for self-presentational reasons. But they are not immune to context effects (see Blair 2002, for a review), and the precision of implicit measures, even the IAT, at the individual level, for diagnostic purposes, is crude. A more nuanced view has emerged regarding the relation between implicit and explicit attitudes (and the instruments we use to measure them), as well as with "the truth." The ascendant view holds that indirect measures of implicit attitudes reflect but one layer of our orientations toward things, like racial groups. Direct measures of explicit attitudes (questionnaires) reflect another. Furthermore, although much has been

tive (critiques of rational choice notwithstanding) as voting for a president is unlikely to be completely isolated from subtle, even nonconscious influences. The more time, information, motivation, and freedom from cognitive distraction we have, the more likely our conscious, intended beliefs and feelings are to influence our actions. But as decades of research on automaticity have shown, the converse is also true. Short of perfect decision-making conditions, implicit attitudes are likely to have some sway, even if they contravene the conscious attitudes and intentions of the decision maker.

The nature of the relationship between implicit and explicit attitudes, as typically measured, is increasingly clear. High-powered, expansive studies have investigated the relations between measures like the IAT and questionnaire measures of attitudes toward the same object/concept, finding them to be consistently positively correlated, and the strength of their correlations to be readily explicable. Of particular note, Nosek and colleagues (2005; Nosek and Smyth 2007) have used large samples from Project Implicit to examine correlations between similarly constructed (bipolar) IAT and questionnaire

measures of preferences for everything from Coke versus Pepsi to Al Gore versus George W. Bush. The correlations are overwhelmingly positive; Nosek and Smyth (2007) reported a median correlation of +.48 among 95 implicit-explicit attitude measure pairings. Nosek and Smyth also found the implicit and explicit measures to be distinct constructs, loading on separate dimensions in a factor analysis. Perhaps most interesting, the strength of the implicit-explicit correlation appears to be moderated by several predictable variables, including self-presentation (the social un/desirability of expressing the attitude, as with racial bias), and conforming clearly to a bipolar structure (e.g., Democrats-Republicans), because the IAT requires binary categorizations on two dimensions. Importantly for political psychology, attitudes that are important to us and/or well-rehearsed exhibit stronger implicit-explicit correlations (see also Payne, Burkley, and Stokes 2008). Furthermore, when implicit and explicit measures converge, they both tend to predict behavior better (Greenwald et al. 2009). In sum, implicit and explicit attitudes (as operationalized) are related but distinct constructs that explain different portions of variance in decisions and behaviors, but are hardly disassociated.

POLITICAL PSYCHOLOGICAL EXTENSIONS TO VOTING

Among the important behavioral outcomes implicit measures have predicted is voting in governmental elections. After first establishing the IAT as a valid predictor of voting behavior for respondents who expressed a clear preference in the Italian general election of 2001 between two opposing political coalitions, Arcuri et al. (2008) tested the measure on undecided voters preceding the 2005 Italian local elections. An IAT using

fired, resulting in a decrease of explicitly reported favorability for the source candidate, yet not for the target. Carraro and Castelli used a modified IAT measuring spontaneous conformity, a Go/No-Go Association Task (GNAT), and an Implicit Approach/Avoidance Task in several studies that supported earlier findings of reduced likeability for the source candidate, yet also found some benefit from increased conformity, perceptions of competence, or reduced favorability for the target. Carraro, Gawronski, and Castelli used the Affect Misattribution Procedure (AMP) and likewise found less-favorable evaluations for both the source and target candidates following negative campaigns.

Not all recent research supports the preferability of implicit measures to predict voting behavior for undecided voters. While Friese, Bluemke, and Wänke (2007) found that implicit measures improved the ability to predict vote choice in the 2002 German parliamentary elections when added to explicit measures, Friese et al. (2012) found that explicit measures were better predictors of voting for both decided and undecided voters. In the same study, the implicit measure (IAT) fared less well at predicting vote choice of undecided voters than it did of decided voters.

With the inclusion of a black candidate, the 2008 US presidential elections offered the opportunity to explore a case where social desirability concerns might make implicit measures more useful in discerning voter sentiment. This was greatly facilitated by the inclusion of AMP measures of implicit racial preference in the American National Election Studies (ANES), which tracks a large sample of eligible voters throughout the electoral season. Payne et al. (2009) examined both explicit and implicit biases and found, unsurprisingly, that

An IAT using pictures of the leaders of the right- and left-wing coalitions predicted vote choice one month prior to the election.

pictures of the leaders of the right- and left-wing coalitions predicted vote choice one month prior to the election. Galdi, Arcuri, and Gawronski (2008) used the Single Category IAT (SC-IAT) to measure attitudes toward the enlargement of a US military base in Vicenza, Italy, preceding a vote on the issue. For those who reported being undecided at a preelection interview regarding their potential vote, implicit attitudes predicted vote choice, even controlling for conscious attitudes expressed at the earlier interview. Also examining elections in Italy, Roccato and Zogmaister (2010) found that, whereas their IATs measuring implicit attitudes toward political coalitions and leaders explained a significant amount of unique variance, explicit attitudes and voting intentions toward left- and right-wing coalitions explained the lion's share of variance in voting behavior. This may be more the case when attitudes are not as sensitive as racial bias.

Carraro, Gawronski, and Castelli (2010) and Carraro and Castelli (2010) used various implicit measures to contribute new elements to the discussion on negative campaigning. Previous research had found that negative campaigning back-

respondents who expressed more explicit bias were less likely to vote for the black candidate, Obama, and more likely to vote for his white opponent, John McCain. After controlling for explicit bias, respondents exhibiting more implicit bias were not more likely to vote for John McCain; instead, they were more likely to vote either for a nonmajor-party candidate or to abstain from voting altogether. Pasek et al. (2009) identified two additional ways implicit bias potentially affected vote choice—by causing those with greater racial bias who otherwise would have (1) abstained or (2) voted for nonmajor-party candidates to vote for John McCain.

Our own work (Finn and Glaser 2010) found that while Obama's central message of hope was apparently successful—a hopeful emotional response to Obama significantly predicted vote choice above and beyond traditional predictors—reactions to his race were also a significant factor in determining vote choice. Controlling for standard determinants of vote choice (party ID and ideology), along with race and explicit bias, implicit bias (AMP with unknown black and white faces) was a better predictor of vote choice than was explicit bias, and

along with predicting a vote for John McCain, was nearly twice as likely to predict a third option of otherwise not voting for Obama (vote for other or abstain). Our more recent unpublished analyses show even greater predictive ability when the AMP is used to measure implicit attitudes toward the candidates themselves—by using faces of the candidates as the priming stimuli.

In line with findings from other studies, Greenwald et al. (2009) reported findings based on a large national sample of registered voters in 2008 that IAT and AMP race preference measures predicted presidential vote choice above and beyond explicit measures of racial bias and ideology.

Providing some evidence of a pathway for implicit associations to affect vote choice, Kosloff et al. (2010) discovered through the use of subliminal priming and lexical decision tasks that candidate preference and salience of outgroup category (age, race) were related to respondents' acceptance and endorsement of false and stigmatizing smears about the non-preferred candidate, especially for undecided respondents.

Several studies have shown the importance of taking individual differences into account when measuring implicit responses. Nevid and Mclelland (2010) used photos of Barack Obama digitally altered to have a lighter or darker skin tone in a SC-IAT and found that self-reported conservative students were more likely to have especially negative associations with the darker Obama than their liberal counterparts. Albertson (2011) used a paper-based IAT (respondents were allowed 25 seconds per page and the number of correct categorizations was tallied) and found that religious appeals have differing effects based on past religious exposure. With particular relevance to determining the effectiveness of using implicit measures, Choma and Hafer (2009) showed that the association between explicitly and implicitly (IAT) measured political orientation was moderated by political knowledge scores, with those scoring higher on a political knowledge test having a stronger association between the two measures. This result is consistent with social-cognitive psychological perspectives on implicit attitudes, holding that those for whom attitudes (or ideologies) are more important and better-rehearsed will have more internally consistent attitudes. Mo (2011) likewise found significant associations between explicit and implicit bias with reduced vote for Obama, but found this to be moderated by strength of party identification. Among those with weak party identification, there was a 35% drop in the likelihood of voting for Obama moving across the range of implicit bias scores.

Moss-Racusin, Phelan, and Rudman (2010) made use of the IAT to examine not only candidate preference in the 2008 primary elections where racism and sexism could be at play, but also implicit antiprejudice attitudes. They found that implicit bias did predict vote choice, but that those also motivated to remain egalitarian compensated by condemning prejudice toward the other candidate's group. The association was moderated by race and degree of prejudice.

In conclusion, the emerging research on implicit bias and voting parallels findings from other domains; implicit attitudes tend to relate significantly to vote choice both in specific terms (preference for parties, policies, or individuals) and more generally (racial biases). A major advantage of the implicit bias and voting research is that it tends to be conducted in studies that allow for multivariate analyses, even highly saturated vote prediction models, thereby demonstrating the *unique* explanatory power (if small) of implicit biases.

THINGS TO CONSIDER WHEN RELATING IMPLICIT MEASURES TO BEHAVIORS LIKE VOTING

When considering both the efficacy and theoretical importance of implicit measures predicting voting behavior, we must bear in mind what it is they measure. Most generically, they measure mental associations that are, for the most part, not consciously accessible. As noted previously, this has implications for judgments especially when time, information, and conscious mental resources are limited.

There are varying qualities of implicit measures that need to be reflected on, many of them having implications for the obtrusiveness of the measures. The distinction between *obtrusiveness* and *reactivity* is important. Obtrusive measures are those for which subjects or respondents can readily discern the purpose. Reactive measures are those that are likely to cause people to respond in a way that is biased by self-presentational concerns (e.g., appearing nonprejudiced). Obtrusiveness and reactivity are certainly correlated—the former is probably a necessary condition for the latter—but not perfectly. In the case of implicit measures, certain features can make them obtrusive, but the methods prevent them from being reactive (or allowing reactivity to bias the scores). However, if a measure is obtrusive, even if its scores are unbiased, it can cause reactivity on subsequent measures. So, if an implicit measure accurately gauges racial preference, but does so obtrusively, a subsequent explicit measure or behavioral measure may be biased by subjects' self-presentational concerns that were triggered by the implicit measure experience.

What are some of the key features of implicit measures that may make them more or less effective for certain purposes? To start, some measures rely on reaction time (e.g., IAT) and some on choice (e.g., AMP; Payne et al. 2005; see also Murphy and Zajonc 1993). The IAT allows an inference about implicit preference by gauging the facility of responding with reaction time—e.g., faster responses to black-bad/white-good pairings reflect a preference for whites. The AMP allows an inference of implicit preference by calculating the proportion of times each subject evaluates ambiguous stimuli (Chinese ideographs) as more or less pleasant compared with a baseline evaluation when they are preceded by white or black face primes (in the case of a race bias AMP). Reaction time measures are generally less obtrusive because, as with the IAT, one can be making correct responses throughout, without subjectively experiencing the response delays (often about 50 milliseconds on average) that yield the score (although it should be acknowledged that it is clear what is being measured on most IATs, and subjects do make telling, and often vexing, categorization errors).

Another characteristic that differentiates the IAT from the AMP, but also from the more traditional measures of implicit memory, is the sequencing of presentation. In the AMP and semantic priming procedures (e.g., Fazio et al. 1986; 1995) two

stimuli are presented for each trial, one after the other. In the IAT, stimuli are presented one at a time. Because of this, for the AMP, the subject cannot infer the experimental condition (e.g., black-good) until the target appears. In the IAT, the experimental condition is manifest for a block of approximately 40 trials based on the pairing of the categories on the response keys. In this way, it may promote greater reactivity.

Another important distinction is whether all the stimuli are presented sub- or supraliminally. In IATs and related procedures like the GNAT (Nosek and Banaji 2001), stimuli must all be supraliminal because subjects are tendering a response to each stimulus, so they have to be able to consciously perceive them. This too renders the IAT and related tasks relatively obtrusive. Sequential priming tasks, including the AMP, can be (although rarely are) administered with subliminal primes. When primes are subliminal, *and* the response task is ambiguous (e.g., categorizing a stimulus as pleasant or unpleasant, as opposed to making a racial categorization), sequential priming tasks can be highly unobtrusive and consequently less likely to trigger compensatory responding on subsequent measures.

An axiom of social psychology is that the more specific the attitude measure, the better it will predict the behavior it specifies. A question about liking for fruit may predict apple consumption, but a question about liking of apples will do even better. Similarly, a generic black-white/good-bad IAT may relate to a number of interracial judgments and behaviors, but measuring an attitude or belief that is more specific to the behavior is more productive. For example, Glaser and Knowles (2008) found that the standard race preference IAT did not relate to "Shooter Bias" (the tendency to "shoot" armed blacks faster than armed whites in a computer-based simulation). However, a race-weapons IAT did. In the domain of political behavior, assessments of global attitudes like racial preferences or party preferences may be inferior to implicit measures of attitudes toward specific issues, parties, or candidates.

Another shortcoming of the IAT is the necessity of having opposing categories for each dimension, which can lead to the confounding of, for example, the black-bad association with the white-good association. Several methods have emerged to mitigate this problem, including the SC-IAT and the GNAT.

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Another methodological variation that can modulate obtrusiveness is response type. In addition to making categorizations or evaluations of target stimuli, as in the IAT and the AMP, some sequential priming tasks involve more seemingly neutral responses, such as "lexical decisions" (deciding if a string of letters is a word or nonword) and pronunciation (reading the word aloud). Both procedures work as measures of association between primes and targets because in both cases one must discern the meaning of the target word to make the judgment. To the extent that the prime and target share meaning (are semantically associated in memory), processing of the target will be facilitated—reaction times will be faster. Combine these types of target responses with subliminal primes and you have a very unobtrusive, downright inscrutable, procedure. However, a power trade-off exists. The farther the experience of the stimuli and the meaning of the response get from the constructs of interest, the weaker the measures will be. Similarly, the more perceptually distal the primes get, the less likely they are to be processed. This is supported by Greenwald, Draine, and Abrams's (1996) finding that subliminal priming effects were, not surprisingly, weaker the shorter the prime presentation duration was. The IAT, with its clear categorizations and long stimulus presentation times is obtrusive, but also robust. The tradeoff is that if the outcome measure (e.g., explicit racial bias measure, behavior toward experimental confederate, expression of voting intention) is physically, temporally, or conceptually proximal to an obtrusive implicit measure, it may be biased by self-presentation pressures.

The GNAT, for example, involves only three categories (e.g., black, bad, and good) and focuses the scaling of the evaluation on the category (group) of primary interest. Nothing precludes carrying out a white, bad, good GNAT as well, to provide a fuller sense of racial preference.

CONCLUSION

We should not get distracted by a horse race between explicit and implicit measures of preferences. Both have been demonstrated to be useful predictors of many types of behaviors, including voting. More importantly, while implicit and explicit measures of attitudes toward the same objects tend to be positively related, they are also distinct (Nosek and Smyth 2007). They have mutually good convergent and divergent validity, as well as predictive validity. Consequently, while we do not want to fall into the process purity trap of assuming implicit and explicit measures reflect entirely different mental systems, we should appreciate that they predict distinct variance, and that they are likely built up and changed by some of the same, and some different, influences. As a final consideration, because many elections rise and fall on turnout, we recommend future investigation of the role of implicit goals and motives in the study of voting behavior. Preference influences choice, but motivation guides turnout. Recent innovations (e.g., Chartrand and Bargh 1996; Glaser and Knowles 2008; Moskowitz et al. 1999; Park, Glaser, and Knowles 2008; Shah and Kruglanski 2003) indicate that, like thoughts and feelings, goals and motives operate implicitly.

This avenue could provide useful insight into who votes in the first place. ∎

NOTE

1. Balota and Lorch (1986) found that with the pronunciation task "indirect priming" could be observed. For example, the word "lion" would elicit faster reading of "stripes" by virtue of the shared association with "tiger."

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