

## Science News Online

Week of April 22, 2006; Vol. 169, No. 16

### The Bias Finders

#### A test of unconscious attitudes polarizes psychologists

**Bruce Bower**

It lurks in the mind's dark basement, secretly shaping our opinions, attitudes, and stereotypes. This devious manipulator does its best to twist our behavior to its nefarious end. Its stock in trade: stirring up racial prejudice and a host of other pernicious preconceptions about members of various groups. Upstairs, our conscious mind ignores this pushy cellar dweller and assumes that we're decent folk whose actions usually reflect good intentions.

Welcome to the disturbing world of implicit bias, where people's preferences for racial, ethnic, and other groups lie outside their awareness and often clash with their professed beliefs about those groups. In the past 15 years, most social psychologists have come to agree that implicit biases, also known as unconscious attitudes, play an often-unnoticed role in our lives. Researchers study implicit biases using any of several techniques, such as tracking participants' feelings and behaviors after subliminally showing them pictures of black or old people.

However, one measure—the Implicit Association Test, or IAT—has proved especially popular. Since its introduction in 1998, more than 250 IAT-related studies have been published. More than 3 million IATs have been completed on a Web site (<https://implicit.harvard.edu/implicit/>) established by the test's major proponents—Anthony G. Greenwald of the University of Washington in Seattle, Mahzarin R. Banaji of Harvard University, and Brian A. Nosek of the University of Virginia in Charlottesville. Other online venues run by organizations concerned about various types of discrimination also offer the IAT to visitors.

The huge IAT database contains troubling findings that have been highly publicized. For example, more than three-quarters of white and Asian test takers in the United States display an unconscious tendency to value white people over black people. Roughly half of black test takers show a pro-white bias as well. Many people who complete the IAT exhibit implicit inclinations for young versus old people and unconsciously favor men over women.

Such results challenge the traditional view in psychology that each person knows his or her social attitudes and stereotypes, Banaji says. People maintain unconscious preferences for certain social groups over others, even if they disavow those preferences when asked about them, in her view. In the post-Civil Rights era, few people admit to harboring ill will toward blacks or to acting in a racially discriminating style, but IAT results reveal a stubborn undercurrent of white favoritism with the potential to stoke bigoted behavior, in Banaji's view.

Virtually from the start, the test sparked a schism in social psychology. The IAT taps into much more than individuals' unconscious attitudes, critics contend. Familiarity with members of those groups, knowledge of cultural attitudes toward particular groups, and test-taking tactics influence IAT scores, they say.

Critics also argue that specific IAT scores are meaningless because they haven't been tied to relevant, real-world behaviors. No one should assume that he or she is unconsciously prejudiced against black people on the basis of an IAT score, these investigators hold.

Psychologist William von Hippel of the University of New South Wales in Sydney, Australia, has followed the IAT debate closely. "Rarely has a methodological tool garnered such strong adherents and detractors," von Hippel says. "The IAT should be vigorously researched and debated, but we still do not really understand what it reveals."

#### Feel the conflict

Go to the IAT Web site and you can probe personal preferences on more than 90 topics, including pets, politics, sports teams, and musical styles. But the IAT measure of attitudes about race draws the most attention. The roughly 5-minute, two-part test "provides a palpable experience of mental conflict that leads to an opportunity for self-examination," says Nosek.

The IAT measures the ease with which people associate words or pictures representing either of two contrasting groups—such as white people and black people or men and women—with positive or negative meanings.

For instance, on one popular version of the racial IAT, participants first press a certain key on a computer keyboard as quickly as possible when they see either an image of a black person's face or a word, such as *tragedy* or *rotten*, that has unpleasant connotations. They press another key when they see either an image of a white person's face or a word, such as *love* or *health*, that has pleasant implications.

In a reversal of this task, participants then rapidly press the same key in response to either black faces or pleasant words and another key when shown either white faces or unpleasant words.

Many volunteers, as they take the test, realize that it's easier to link black faces with unpleasant words and white faces with pleasant words than vice versa. Greenwald and his coworkers surmised in 1998 that the speedier such associations occurred, the more participants unconsciously preferred whites to blacks.

Several investigations suggest that it's difficult to initially manipulate one's IAT score. However, people who take the IAT many times or who receive explicit cheating instructions can fake their scores. "I've taken the IAT so many times that I know how to get any score I want to on it," Nosek says.

Still, the IAT does a good job of tapping into the implicit attitudes that it's supposed to measure, he asserts.

In particular, Nosek cites Yale University psychologist T. Andrew Poehlman's unpublished statistical review of 61 studies. It finds that IAT scores do better than self-reports at forecasting results of lab tests of behavior motivated by stereotypes and racial attitudes. For instance, white people who describe themselves as unaffected by a person's race but display strong implicit bias against blacks on the IAT are especially apt to make unfriendly or rude overtures toward a black person in a brief laboratory encounter.

In contrast, in predicting choices of consumer products and political candidates, self-reports prove superior to IAT scores, according to Poehlman's review.

In another unpublished study, not included in the review, Banaji and her coworkers found that, among 291 white physicians, those exhibiting strong implicit bias against blacks also prescribed a state-of-the-art heart treatment far more often to hypothetical white patients than to their black counterparts.

## Implicitly yours

According to its proponents, the IAT illuminates a common characteristic of unconscious attitudes toward ethnic and social groups: Such views are easily formed but hard to change.

The 46 college students participating in psychologist Aiden P. Gregg's experiment had never heard of Niffites or Luupites, but they were asked to imagine the two make-believe ethnic groups. In the experiment at the University of Southampton in England, each participant read an account of how one group, depicted as savage and ruthless, invaded and slaughtered the other, portrayed as civilized and peaceful.

The participants then read a series of names on a computer screen. Niffite names featured a double consonant and ended in "nif," such as Eskannif. Luupite names included a double vowel and ended in "lup," such as Neenolup. Each name from the designated invading group was preceded by a subliminally presented negative word, such as *barbaric*. Each name from the victim group was preceded by a subliminally presented positive word, such as *benevolent*.

Immediately afterward, students reported not only a conscious preference for the peaceful group but also displayed an implicit preference for it over the invading group on an IAT.

In further experiments at universities in Germany and the United States, students were told about Niffites and Luupites as in previous tests. They then either were informed that a computer error had accidentally switched descriptions of the imaginary groups or were given a new passage to read that described how historical forces had turned the victims into vengeful aggressors, while the original invaders became peaceful.

Self-reported opinions about the groups usually reversed at that point, says Gregg. In contrast, original implicit attitudes toward the groups remained largely the same, Gregg's team reports in the January *Journal of Personality and Social Psychology*.



*WAVES OF INTOLERANCE. Psychologists disagree vehemently about whether a simple test shows that many people harbor unconscious prejudice against blacks that may promote bigoted behavior.*  
PhotoDisc

"If automatic attitudes prove to be generally easier to acquire than they are to eliminate ... then right-minded attitudes should be instilled first before wrong-headed ones gain a foothold," the researchers conclude.

## **Mystery metric**

No one knows how, or whether, IAT scores apply to relevant real-life behaviors, says psychologist Hart Blanton of Texas A&M University in College Station. For instance, researchers who rely on the test consider a racial IAT score of 1.3 an indication of a strong unconscious bias against blacks. But it's unclear whether a person who scores 1.3 is more likely to, say, hire whites over blacks than is a person who scores 1.2 or 0.6.

Although IAT scores forecast volunteers' behavior in laboratory situations better than self-reports do, Poehlman's review shows that the test's capacity to predict behaviors related to racial prejudice or other malign attitudes is still relatively weak, Blanton says.

The test operates on vague and questionable theoretical assumptions about attitude formation, Blanton contends. Several serious problems mar interpretations of the results.

It's not known whether the range of possible scores on the racial IAT encompasses the entire range of implicit preferences toward whites and blacks, Blanton and James Jaccard of Florida International University in Miami assert in the January *American Psychologist*. The IAT may cover only the low-to-middle end of the actual range, or only the middle-to-upper end of the range. Many psychological measures, including popular self-esteem and depression scales, have the same limitation.

Consider the racial-association test, which contrasts the relative speed of making positive and negative associations to blacks and whites. A person whose score indicates implicit antiblack bias may regard blacks negatively and whites positively, may regard both groups positively but whites more so, or may regard both groups negatively but blacks more so. A final score offers no help in distinguishing among these possibilities.

Moreover, implicit bias may stem primarily from attitudes toward a single racial group, not from a preference for one group over another, Blanton suggests. Racist views held by volunteers primarily reflect an implicit tendency to view blacks negatively, regardless of the volunteers' opinion about whites, he and his coworkers propose in the March *Journal of Experimental Social Psychology*.

Blanton's team developed a test to examine that prospect. The researchers separately assessed the speed with which participants associated typical African-American names with positive words, African-American names with negative words, European-American names with positive words, and European-American names with negative words. In each instance, participants' response speed was compared with the time needed to make neutral associations, such as pairing words for pieces of furniture with synonyms for "middle."

Volunteers who easily paired black names with negative words frequently scored high on a questionnaire probing for negative attitudes about blacks, regardless of how quickly they associated white names with positive or negative words. By contrasting a person's rapid associations to blacks and whites, the IAT may thus hide more than it reveals about simmering racial prejudice, Blanton says.

## **Lose the attitude**

Other lines of research portray the IAT as a measure complicated by factors beyond unconscious attitudes.

IAT scores tap into the greater ease of making positive associations when dealing with familiar social categories, according to psychologist Jan De Houwer of Ghent University in Belgium. In a 2001 study, De Houwer administered a British-foreigner IAT to British participants. Volunteers more easily associated British citizens, ranging from the revered Queen Mother to a notorious mass murderer, with pleasant words. In contrast, they more easily linked an array of foreigners, from the celebrated Albert Einstein to the despised Adolf Hitler, to unpleasant words.

The IAT's focus on linking racial groups to general "pleasant" and "unpleasant" categories also taps into cultural knowledge about those groups, such as awareness that blacks are often portrayed negatively in news stories and movies, says psychologist Russell H. Fazio of Ohio State University in Columbus.

Volunteers score lower on implicit racial bias if their associations concern only personal preferences, Fazio contends. In a 2004 investigation, he and his Ohio State colleague Michael A. Olson developed a "personalized IAT," which required associating black and white names with positive or negative words under the headings either of "I like" or "I don't like." The investigators found that while most white volunteers displayed implicit bias against blacks on a traditional IAT, far fewer displayed implicit bias on the personalized test.

Even more disturbing is preliminary evidence that people can easily fake their IAT scores. In a 2005 study, Klaus Fiedler of the University of Heidelberg in Germany administered an IAT of implicit attitudes toward Germans and Turks to 198 German volunteers. He then asked participants to retake the test and fake their responses but offered no specific instructions on how

to do so.

Most people reversed their IAT scores, usually by hesitating before responding to associations that they had previously made more quickly. Two experienced IAT testers who examined the results found it nearly impossible to identify IAT fakers, Fiedler says.

## Legal stakes

Scientific conclusions about the IAT have the potential to reverberate through law and politics. Consider the fate of affirmative action programs.

In 2003, Supreme Court Justice Sandra Day O'Connor wrote that in 25 years affirmative action would no longer be needed. Harvard's Banaji and law professor Jerry Kang of the University of California, Los Angeles hold that no date can be specified today. Affirmative action and other measures to rectify discrimination should end "when measures of implicit bias for a region or nation are at zero or some rough behavioral equivalent," Kang and Banaji write in an upcoming *California Law Review*.

Average IAT scores of big chunks of the U.S. population provide a reasonable estimate of the societal reach of racial discrimination, which remains disturbingly common, they assert.

The IAT can neither read minds nor solve the sticky affirmative action debate, responds psychologist Philip E. Tetlock of the University of California, Berkeley. He and law professor Stephen Mitchell of Florida State University in Tallahassee cite research by Blanton and others to argue that, in many cases, IAT scores reflect emotional reactions that have nothing to do with antiblack sentiment.

Many people react to black faces or names on an IAT test with compassion and guilt over African-Americans' past and current plight, a response that could slow their speed in associating blacks with positive words just as surely as deep-seated hostility toward African-Americans could, Mitchell and Tetlock suggest. IAT researchers have yet to explore this possibility.

Blanton greets any application of the IAT with trepidation. "IAT scores can't be meaningfully interpreted," he says. One of his students, a biracial woman raised by her white mother, was extremely upset by her IAT score indicating implicit antiblack bias, although her score could have easily reflected greater familiarity with whites than blacks, Blanton notes. "No one should be provided with the kind of feedback given daily to visitors of IAT Web sites," he says.

Although Nosek upholds the test's value, he says that there are still "many unresolved issues about the nature of the IAT and its potential for revealing disquieting aspects about human minds."

---

If you have a comment on this article that you would like considered for publication in *Science News*, send it to [editors@sciencenews.org](mailto:editors@sciencenews.org). Please include your name and location.

---

To subscribe to *Science News* (print), go to <https://www.kable.com/pub/scnw/subServices.asp>.

To sign up for the free weekly e-LETTER from *Science News*, go to [http://www.sciencenews.org/pages/subscribe\\_form.asp](http://www.sciencenews.org/pages/subscribe_form.asp).



## References:

Blanton, H., J. Jaccard, *et al.* 2006. Decoding the implicit association test: Implications for criterion prediction. *Journal of Experimental Social Psychology* 42(March):192-212. Abstract available at <http://dx.doi.org/10.1016/j.jesp.2005.07.003>.

Blanton, H., and J. Jaccard. 2006. Arbitrary metrics in psychology. *American Psychologist* 61(January):27-41. Abstract available at <http://content.apa.org/journals/amp/61/1>.

\_\_\_\_\_. 2006. Arbitrary metrics redux. *American Psychologist* 61(January):62-71. Abstract available at <http://content.apa.org/journals/amp/61/1>.

De Houwer, J. 2001. A structural and process analysis of the implicit association test. *Journal of Experimental Psychology* 37(November):443-534. [Abstract](#).

Fazio, R.H., and M.A. Olson. 2003. Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology* 54(February):297-327. Abstract available at <http://dx.doi.org/10.1146/annurev.psych.54.101601.145225>.

Greenwald, A.G., D.E. McGhee, and J.L.K. Schwartz. 1998. Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology* 74(June):1464-1480. Abstract available at <http://content.apa.org/journals/psp/74/6>.

Gregg, A.P., B. Seibt, and M.R. Banaji. 2006. Easier done than undone: Asymmetry in the malleability of implicit preferences. *Journal of Personality and Social Psychology* 90(January):1-20. Abstract available at <http://content.apa.org/journals/psp/90/1>.

Kang, J., and M.R. Banaji. In press. Fair measures: A behavioral realist revision of "affirmative action." *California Law Review*. Abstract available at <http://ssrn.com/abstract=873907>.

Mitchell, G., and P.E. Tetlock. Preprint. Antidiscrimination law and the perils of mindreading.

Nosek, B.A., A.G. Greenwald, and M.R. Banaji. In press. The implicit association test at age 7: A methodological and conceptual review. In *Automatic Processes in Social Thinking and Behavior*, J.A. Bargh, ed. Psychology Press.

Olson, M.A., and R.H. Fazio. 2004. Reducing the influence of extrapersonal associations on the implicit association test: Personalizing the IAT. *Journal of Personality and Social Psychology* 86(May):653-667. Abstract available at <http://content.apa.org/journals/psp/86/5>.

Poehlman, T.A., . . . A.G. Greenwald, and M.R. Banaji. Preprint. Understanding and using the implicit association test: III. Meta-analysis of predictive validity.

### **Further Readings:**

To take the Implicit Association Test online, go to <https://implicit.harvard.edu/implicit/>.

### **Sources:**

Mahzarin R. Banaji  
Department of Psychology  
William James Hall  
Room 1510  
Harvard University  
33 Kirkland Street  
Cambridge, MA 02138

Hart Blanton  
Department of Psychology  
Texas A&M University  
College Station, TX 77843-4235

Jan De Houwer  
Department of Psychology  
Ghent University  
Henri Dunantlaan 2  
B-9000 Ghent  
Belgium

Anthony G. Greenwald  
Department of Psychology  
University of Washington  
Box 351525  
Seattle, WA 98195

Aiden P. Gregg  
University of Southampton  
School of Psychology  
Highfield Campus  
Southampton SO17 1BJ  
United Kingdom

James Jaccard  
Department of Psychology  
Florida International University  
University Park  
Miami, FL 33199

Jerry Kang  
University of California, Los Angeles

School of Law  
405 Hilgard Avenue, Law 1242  
Box 951476  
Los Angeles, CA 90095-1476

Gregory Mitchell  
Florida State University  
College of Law  
425 West Jefferson Street  
Tallahassee, FL 32306

Lorraine T. Mitchell  
Organizational Behavior  
Haas School of Business  
University of California, Berkeley  
Berkeley, CA 94720-1900

Brian A. Nosek  
Department of Psychology  
University of Virginia  
Box 400400  
Charlottesville, VA 22911

Michael A. Olson  
Department of Psychology  
Ohio State University  
1885 Neil Avenue  
Columbus, OH 43210-1222

T. Andrew Poehlman  
2 Hillhouse Avenue  
Department of Psychology  
Yale University  
New Haven, CT 06520

William von Hippel  
School of Psychology  
University of New South Wales  
Sydney 2052  
Australia

<http://www.sciencenews.org/articles/20060422/bob9.asp>

From *Science News*, Vol. 169, No. 16, April 22, 2006, p. 250.

Copyright (c) 2006 Science Service. All rights reserved.