The idea that human thinking and feeling can operate outside conscious awareness and without conscious control has arrived at this conclusion less from complex theorizing about the nature of the mind than from evidence generated by several unique methods. This evidence revealed that much of social cognition occurs without conscious awareness, control, intentional thought, or self-reflection. Thus implicit forms of preference of both individuals and social groups have come to form a critical component in the understanding of intergroup relations.

One method that contributes to this understanding is the Implicit Association Test (IAT). The IAT is a measure of implicit cognition, assessing the relative speed at which individuals endorse opposing beliefs. The IAT has been used to study a diverse range of psychological concepts, and its primary use has been in the analysis of unconscious intergroup attitudes and stereotypes and group identity. Notably, the IAT has been used to study many aspects of implicit intergroup cognition, including its relation to self-report, its development, neural correlates, and ecologically realistic behaviors.

**Description of the Method**

The IAT is a computer-based reaction-time task that measures the relative strength of associations between concept-attribute pairs by instructing participants to classify four sets of stimuli into two superordinate categories using just two response keys. During a typical IAT, participants use two response keys to classify two concept sets sequentially on a computer screen (e.g., faces of Blacks and Whites, representing the concept race); for example, pressing the left key to indicate the face is Black and the right key to indicate the face is White. In addition, participants use the same two keys to classify attribute stimuli (e.g., good words such as happy, nice, pleasant or bad words such as terrible, awful, violent).

For half the trials, a particular concept category (White) and attribute category (good) share the same response key, while the contrasting categories share the other response key. And for the second half of the trials, the pairings reverse so that the opposite categories share the same response key (Black with good, and White with bad). The logic of the IAT is simple: When two concepts are more strongly associated with each other, it should be easier for participants to classify them when they share the same response key than when they share different response keys. In other words, participants should be faster to respond and more accurate when two closely related concepts share the same response key. The IAT stimuli can appear in several formats, including pictures and words presented either visually or aurally. Response latencies and errors are recorded and compared to those generated by the first set of trials. The particular pairings described above are counterbalanced across participants to control for potential order effects. For a sample IAT task, visit http://implicit.harvard.edu

Each participant receives a single score upon completing an IAT, called the IAT score or the D-score. This score is a measure of effect size computed by calculating the difference between the mean response latency for the two double-categorization blocks and dividing that difference by its associated pooled standard deviation. The D-score indicates the strength of an individual’s association between categories and attributes, with larger scores indicating stronger associations. (For more information about how to score an IAT, please see the recommended readings at the end of this entry.)

**Discoveries About Intergroup Cognition**

Perhaps because the IAT was first introduced using social groups as the target domain, it has been most heavily used by those interested in the implicit intergroup biases, stereotypes, and self-concepts of numerous groups: race/ethnicity, gender, age, nationality, religion, body weight, disability, sexual orientation, and political ideology, to name just a few. As such, the IAT has been instrumental in generating a vast body of descriptive work to document the nature of implicit social cognition in intergroup contexts.

Researchers interested in understanding dual-process theories of social cognition and intergroup relations have used the IAT to measure the degree to which (and the conditions under which) explicit stated prejudices and implicitly measured associations are consistent. Moreover, the IAT has helped shed light on intergroup cognition by providing key insights into the nature of implicit bias among majority and minority populations, including the developmental origins and neural basis of implicit social cognition as well as the extent of intergroup contact on the reduction of implicit intergroup bias. Notably, the IAT has been implemented online at http://implicit.harvard.edu, which serves primarily as an educational site with an attached spin-off site for research at http://implicit.harvard.edu/implicit/index.html, offering a wealth of resources for educators and researchers interested in implicit bias.

**Evidence About Bias**

**Majority and Minority Intergroup Bias**

Research with the IAT has revealed a striking finding among adult participants—only majority group members from socially valued groups exhibit positive implicit ingroup bias. Thus, White Americans consistently show strong ingroup bias, whereas Black Americans do not. Similar observations have been obtained for other majority-minority group contrasts in the United States and in numerous other countries around the world.

**Development of Implicit Intergroup Bias**

A child-friendly version of the IAT (Child IAT) was developed to measure the acquisition of implicit associations as they emerge. Collectively, this research has demonstrated that implicit intergroup biases emerge surprisingly early in life at adultlike levels of magnitude, casting doubt on the conventional view that such implicit associations form only over a protracted period of exposure to cultural beliefs. While implicit attitudes emerge very quickly and undergo little change across development, implicit measures of bias have been seen to take longer to form, appearing to be much more flexible. Ongoing developmental research using the
Child IAT promises to shed light on the cognitive and cultural origins of implicit intergroup bias, while revealing how and when such implicit associations can be modified.

**Malleability of Implicit Intergroup Bias**

Considerable research has been concerned with understanding the malleability of implicit intergroup bias. Research using the IAT has shown that although the IAT taps an aspect of intergroup cognition that is difficult to control, this implicit cognition, contrary to intuition, is likely quite malleable. Indeed, studies have shown that the mere presence of members of an outgroup (Black) can reduce the degree of implicit anti-Black IAT bias, that imagery exercises can lower the degree of stereotypes of women, and that consistent exposure to women teachers can change girls’ stereotypes.

**Construct and Predictive Validity of the IAT**

Research examining the construct validity of the IAT has demonstrated that it is difficult to produce a desired outcome (i.e., fake the test) and that the strength of implicit associations are often uncorrelated with a person’s self-professed beliefs, especially when the domain of interest is susceptible to the common desire to appear unbiased in the eyes of friends, family, and peers. This is precisely the sort of finding one would expect from a measure of implicit bias. Categories expected to elicit positive attitudes (e.g., flowers) compared to other categories (e.g., insects) do so. Known groups tests give further support to the IAT by showing that those expected to have stronger positive associations between concept and attribute indeed show such effects (e.g., members of dominant social groups show greater implicit positivity toward their ingroup than do members of nondominant social groups).

The IAT is also known to be related to several measures of brain activity, with the first studies demonstrating greater amygdala activation to Black faces in those participants who also showed stronger anti-Black IAT bias. Given the strong involvement of the amygdala in emotional learning, such a result (the correlation between amygdala involvement and degree of attitudinal bias) ought to be expected from an attitude measure. Recently, an identity IAT (measure of association of self with another) predicted activation in the medial prefrontal cortex, showing the activation of different neurons when individuals thought about someone similar to or different from them based on group membership.

The IAT measures the relative strength of association between different concepts. Research has revealed that differences in the magnitude of these associations correlate with differences in actual behavior. In answer to questions concerning the predictive validity of the IAT using real-world samples, a review of all peer-reviewed published papers exploring the predictive validity of the IAT has shown that although both explicit and implicit measures predict intergroup discrimination, the IAT outperforms explicit measures in this context. In particular, implicit intergroup bias measured by the IAT is a better predictor of nonverbal behaviors and decisions made under pressure than are explicit measures of intergroup bias.

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**See also** Children: Stereotypes and Prejudice; Implicit Prejudice; Modern Forms of Prejudice; Prejudice; Self-Esteem; Social Identity Theory; Social Representations; Stereotyping

Further Readings


**Implicit Prejudice**

Although there is some debate among psychologists as to what implicit prejudice is and how best to define it, implicit prejudice is most commonly described as a prejudice (i.e., negative feelings and/or beliefs about a group) that people hold without being aware of it. One can harbor implicit prejudice on the basis of race (implicit racism), age (implicit ageism), ethnicity (implicit ethnocentrism), or any number of other social groups. Of the various forms of implicit prejudice, implicit racism has probably received the most research attention.

Implicit prejudice is thought to operate automatically, with little intention or control on the part of the person. In addition, people are often unwilling or unable to acknowledge their implicit prejudice. Implicit prejudice can be contrasted with explicit prejudice, which is prejudice of which people are aware and that they agree with and endorse consciously. As discussed below, implicit prejudice can have a wide range of effects on judgments and behavior toward members of different groups. It tends to appear in people’s judgments and behavior toward targets of their prejudice both subtly and accidentally. Because it seeps into the behavior of people who see themselves as unprejudiced, it is believed to be a particularly insidious form of prejudice.

For example, consider a White individual who considers himself absolutely a nonprejudiced, prejudiced-free person. He tries to be fair to every-one and treat people equally. However, imagine he harbors negative feelings toward, say, Blacks. These are feelings he doesn’t readily acknowledge and wouldn’t admit to others; indeed, he may adamantly deny them. However, in interactions with Blacks, he appears somewhat distant and aloof. Although he doesn’t mean to, he makes less eye contact, smiles less, and generally exudes less warmth with them than he does with Whites. We would consider this person to be relatively low in explicit prejudice—he would claim, and would perhaps believe, to feel neutrally or positively toward Blacks, and he would certainly disavow blatantly racist notions like racial discrimination in housing and employment. However, he exemplifies implicit prejudice because of his negative feelings and behavior toward Blacks. In the absence of awareness of these feelings and behaviors, it is the coupling of unintentional negativity and a lack of awareness that is the hallmark of implicit prejudice.

This entry describes the concept of implicit prejudice, explores its manifestations and measures, and summarizes critiques of the idea.

**Origins and Prevalence**

Most researchers would agree that, to some extent, socialization processes affect us all. That is, our parents, teachers, peers, television, and other forms of media have an impact on our attitudes and beliefs. Implicit prejudice researchers point to the negative depictions of various groups, particularly Blacks, in popular culture and the media as a primary origin of implicit prejudice. Overhearing prejudicial remarks from our peers and parents also thought to influence our racial attitudes. These cultural associations are likely incorporated into memory without our awareness or consent, and the process is said to begin in childhood. By adulthood, negative associations researchers point to being taught that Blacks (and other stigmatized groups) have become so ingrained that they are capable of being automatically activated upon seeing a Black individual.

While many people are aware of the fact that some minority groups are negatively depicted in society, people tend to be unaware of the impact of these negative associations on their attitudes. In fact, it is common for people to overtly deny that media and other socialization factors influence their attitudes. However, research shows that humans are capable of learning associations implicitly—without