

Personality and Social Psychology Bulletin

<http://psp.sagepub.com>

First Thought, Best Thought: Positive Mood Maintains and Negative Mood Degrades Implicit-Explicit Attitude Correspondence

Jeffrey R. Huntsinger and Colin Tucker Smith

Pers Soc Psychol Bull 2009; 35; 187

DOI: 10.1177/0146167208327000

The online version of this article can be found at:
<http://psp.sagepub.com/cgi/content/abstract/35/2/187>

Published by:



<http://www.sagepublications.com>

On behalf of:



Society for Personality and Social Psychology, Inc.

Additional services and information for *Personality and Social Psychology Bulletin* can be found at:

Email Alerts: <http://psp.sagepub.com/cgi/alerts>

Subscriptions: <http://psp.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://psp.sagepub.com/cgi/content/refs/35/2/187>

First Thought, Best Thought: Positive Mood Maintains and Negative Mood Degrades Implicit-Explicit Attitude Correspondence

Jeffrey R. Huntsinger

Loyola University Chicago

Colin Tucker Smith

University of Virginia

Two studies investigate the effect of mood on the relationship between implicit and explicit attitudes toward African Americans (Experiment 1) and implicit and explicit academic attitudes (Experiment 2). Because explicit and implicit attitudes are more related when people validate their automatic attitudes as true (the associative-propositional evaluation model) and because people tend to validate their immediate reactions when they are in positive rather than negative moods (the affect-as-information model), the authors predicted a stronger implicit-explicit attitude correspondence among positive versus negative mood participants. As predicted, in both studies, participants exhibited a significant correspondence between implicit and explicit attitudes when in positive moods but not when in negative moods.

Keywords: mood; affect; implicit attitudes; automaticity; implicit social cognition

The Beat poet Allen Ginsberg was a strong believer in what he called “first thought, best thought,” an idea that has its roots in Zen Buddhism (Ginsberg, 2001; Miles, 1989). According to “first thought, best thought,” one’s moment-to-moment thoughts and immediate reactions to the world are valid and valuable sources of inspiration. These immediate reactions are considered valid because they are not constrained by social norms, conventions, and everyday rationality. As such, Ginsberg believed they would have great potential to provide important insights.

Most social psychologists studying these immediate reactions (i.e., implicit attitudes) are not particularly concerned with when they inform poetic inspiration,

but they are concerned with when they inform thoughts and behavior more generally (Bargh, 1997; Fazio, 1995; Greenwald & Banaji, 1995). There is now little dispute that a great deal of people’s thinking and acting take place automatically and outside of conscious awareness and that two distinctly different evaluative processes—one relatively automatic (implicit) and the other relatively controlled (explicit)—guide how people react to the objects and people they encounter as they navigate their social environments (Bargh, 1997; Gawronski & Bodenhausen, 2006; Wegner & Bargh, 1998; Wilson, 2002). Implicit attitudes reflect automatically activated tendencies to respond in a positive or negative fashion toward an attitude object, whereas explicit attitudes reflect more controlled evaluative tendencies (Gawronski & Bodenhausen, 2006; Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000). Also of interest—and most relevant to this research—are the instances in which considered evaluative judgments (i.e., explicit attitudes) will be informed by, or consonant with, these more immediate reactions (e.g., Fazio, 1990; Gawronski & Bodenhausen, 2006; Nosek, 2005).

Authors’ Note: We would like to extend many thanks to Brian Nosek, Kate Ranganath, Yoav Bar-Anan, Jen Joy, Nicole Lindner, Fred Smyth, and Jesse Graham for their comments on previous versions of this work. Please address correspondence to Jeffrey R. Huntsinger, 1046 Damen Hall, Department of Psychology, Loyola University Chicago, 6525 N. Sheridan Road, Chicago, IL 60626; e-mail: j huntsinger@luc.edu.

PSPB, Vol. 35 No. 2, February 2009 187-197

DOI: 10.1177/0146167208327000

© 2009 by the Society for Personality and Social Psychology, Inc.

IMPLICIT-EXPLICIT ATTITUDE CORRESPONDENCE

Although early research emphasized dissociations between implicit and explicit attitudes (see Greenwald & Nosek, 2008, for a review), subsequent research generally finds they are modestly related and that a variety of factors lead to greater or lesser correspondence (for reviews, see Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek, 2005). Some of these factors include whether implicit attitudes are perceived as a valid basis for responding (Gawronski & Bodenhausen, 2006) and whether there exist social norms or pressures against their expression (Fazio, 1995; Nosek, 2005). When implicit attitudes are seen as valid responses, implicit-explicit correspondence increases. When there are social norms or pressures against the expression of some opinion (such as hostility toward minority groups) implicit-explicit attitude correspondence decreases. Other factors regulating implicit-explicit correspondence include attitude strength or potency, extremity, and dimensionality (i.e., whether an attitude is unipolar or bipolar; see Nosek, 2007, for a review). Furthermore, explicit attitudes are more related to implicit attitudes when self-reports are obtained under time pressure and when they are referred to as "gut reactions" (Ranganath, Smith, & Nosek, 2008). Despite the enthusiastic search for moderators of implicit-explicit attitude correspondence, none of this research has explored the role of fleeting affective factors (i.e., moods and emotions) in regulating their correspondence.

MOOD AND COGNITIVE PROCESSING

Over the past several decades, accumulated evidence has documented the power of fleeting affective experiences to shape how people perceive and interact with the world (see Schwarz & Clore, 2007). One recurring theme in this literature is the discovery that people in positive moods rely more on accessible cognitions, thoughts, and responses than do those in negative moods. For example, when people are in positive moods as compared to negative moods, they are more likely to have accessible schemas (Bless, Clore, et al., 1996), stereotypes (Bodenhausen, Kramer, & Susser, 1994; Isbell, 2004), and activated social categories (Ashton-James, Huntsinger, & Clore, 2006) inform their judgments and responses. Also, in a persuasion context, people in positive moods have more confidence in their thoughts about a persuasive message than do those in negative moods; this, in turn, influences the degree to which such thoughts inform judgment (Briñol, Petty, & Barden, 2007). People in positive moods are also more

likely to exhibit routine perceptual (Gasper & Clore, 2002) and information-processing (Storbeck & Clore, 2005) styles than those in negative moods. Finally, when people are in positive moods as compared to negative moods, they are more likely to rely on cognitive shortcuts, such as the ease-of-retrieval heuristic (Ruder & Bless, 2003).

Early explanations have included the possibility that positive mood reduces cognitive capacity or processing motivation compared to negative mood, which increases reliance on accessible cognitions and responses as cognitive shortcuts. The cognitive capacity account rests on the idea that positive moods activate more mental content than negative moods do, which reduces the ability of people in positive moods to deploy cognitive resources (e.g., Mackie & Worth, 1991). The motivational account rests on the idea that people in positive moods fail to deploy cognitive resources either because they want to maintain their positive mood or because they see little reason to (e.g., Schwarz, 1990; Wegener & Petty, 1994). Both of these accounts, however, have been challenged on a number of grounds (Bless & Schwarz, 1999). First, mood inductions that are unlikely to drain cognitive resources, such as facial feedback manipulations (i.e., posing happy or sad facial expressions), yield identical effects on cognition as do those that would presumably be cognitively draining (i.e., recalling happy or sad life events). In addition, some have argued that negative mood, rather than positive mood, should call to mind more mental content and thus impair cognitive capacity (e.g., Ellis & Ashbrook, 1988). Second, when confronted with information that contradicts the implications of an activated stereotype, people in positive moods readily abandon the stereotype and instead rely on individuating information (Krauth-Gruber & Ric, 2000), which clearly challenges the idea that people in positive moods are unmotivated to deploy cognitive effort to meet task demands. In sum, contrary to cognitive capacity or motivational accounts, research demonstrates that individuals in positive moods have both the capacity and the motivation to exert whatever cognitive effort a particular task or situation requires (Bless, Clore, et al., 1996; Bless, Schwarz, & Kemmelmeier, 1996; Isbell, 2004; Krauth-Gruber & Ric, 2000).

As a consequence, rather than assuming that affect regulates cognition by influencing cognitive capacity or motivation, most perspectives now hold that affect serves an information function (see Martin & Clore, 2001, for a compilation). One prominent conceptualization of affective experience, the affect-as-information model (e.g., Schwarz & Clore, 1983; see Clore et al., 2001; Clore & Huntsinger, 2007; Schwarz & Clore, 1996, for reviews), proposes that affective cues from

moods and emotions signal the validity (or value) of accessible cognitions, thoughts, and routine responses. From this perspective, positive moods signal that accessible cognitions and customary responses are valid, empowering their use, whereas negative moods signal that they are not valid, blocking their use (Bless, 2001; Bless, Clore et al., 1996; Briñol et al., 2007; see Clore & Huntsinger, in press, for a review).

Based on this research, we predicted that people in positive moods would exhibit higher implicit-explicit attitude correspondence than would people in negative moods because the implicit attitudes of people in positive moods would be seen as a valid basis for their explicit attitude reports. These predictions are also consistent with the associative-propositional evaluation (APE) model recently proposed by Gawronski and Bodenhausen (2006, 2007). Most relevant to the present purposes is that, according to the APE model, people typically base their endorsed evaluative judgments on their automatic affective reactions (i.e., implicit attitudes) unless these reactions are considered an invalid basis for an evaluative judgment. In the model, automatic affective reactions are validated or invalidated by a variety of factors, but frequently they are validated by their consistency with other accessible propositions. In addition to their consistency with other accessible propositions, we suggest that the validity of individuals' automatic affective reactions (i.e., implicit attitudes) may also be directly signaled by affective cues, such as those from positive and negative moods. That is, we propose that positive moods should validate, and negative moods should invalidate, individuals' automatic affective reactions (i.e., implicit attitudes), leading to differences in implicit-explicit attitude correspondence between the two mood groups.

In summary, based on the affect-as-information model (Clore & Huntsinger, 2007; Schwarz & Clore, 1983, 1996) and the APE model (Gawronski & Bodenhausen, 2006), we predicted that people in positive moods, as compared to those in negative moods, would exhibit higher implicit-explicit attitude correspondence because people in positive moods should see their implicit attitudes as a valid basis for their explicit attitude reports. In other words, for people in positive moods but not people in negative moods, first thoughts are seen as best thoughts.

This work will add to researchers' understanding of the processes involved in reporting explicit attitudes—in particular whether implicit attitudes are used as a basis for such reports. Until now, researchers investigating the correspondence between implicit and explicit attitudes have focused on aspects of the individual's personality or, more commonly, aspects of the attitude object (Nosek, 2007). Researchers have ignored

whether fluctuations in intrapersonal cues (e.g., fleeting affective states) shape the relationship between implicit and explicit attitudes. This research begins to investigate this issue by examining the influence of affect on implicit-explicit attitude correspondence. This is important because experiencing affective states such as positive or negative moods is a ubiquitous occurrence and thus should frequently form the psychological background in which expression of implicit and explicit attitudes unfurls.

OVERVIEW OF STUDIES

In this research we tested whether affective cues from positive and negative moods would regulate implicit-explicit attitude correspondence. We tested these predictions in two experiments. In Experiment 1, we examined whether mood regulated the relationship between implicit and explicit prejudice; in Experiment 2, we examined the relationship between implicit and explicit academic attitudes. Across experiments, mood was manipulated through the use of music and implicit attitudes were measured via the Implicit Association Test (IAT; Greenwald, McGhee, & Schwarz, 1998) and explicit attitudes were assessed via self-report instruments. In both experiments, we predicted that positive moods would validate, and negative moods would invalidate, participants' automatic affective reactions (i.e., implicit attitudes), leading to differences in implicit-explicit attitude correspondence between the two mood groups.

We also examined another explanation for affective regulation of implicit-explicit attitude correspondence, namely, potential arousal differences between positive and negative moods. From this perspective the positive mood induction increases arousal compared to the negative mood induction, which would lead to increased implicit-explicit attitude correspondence because increased arousal is often linked to greater reliance on automatic or well-learned responses (Bargh & Cohen, 1978; Zajonc, 1965).

We attempted to rule out an arousal explanation in two ways. First, we measured participants' self-reported arousal by asking them how alert they felt during the mood induction (Experiment 1) and how alert they felt while completing the experiment as a whole (Experiment 2). Second, we examined whether absolute responses latencies on the IAT differed as a consequence of mood; if arousal facilitates performance on simple cognitive tasks and the positive mood induction increased arousal compared to the negative mood induction, then participants in positive moods should respond faster on the IAT than would those in negative moods.

It should be noted, however, that evidence supporting arousal-based explanations of affective influences on judgment and cognition is mixed at best. Some research finds that arousal may explain some differences in cognitive processing (Corson & Verrier, 2007) and memory (Revelle & Loftus, 1992) between positive and negative moods. Other research, however, shows that both high and low arousing positive mood states result in a similar reliance on stereotypes when making judgments (Bodenhausen et al., 1994).

EXPERIMENT 1

Participants

Seventy-six participants (55 women)¹ completed this experiment for partial fulfillment of a course requirement.

Procedure

We told participants that the purpose of the experiment was to investigate interpersonal interactions and attitudes toward social groups and that they would complete a series of computer-based measures and complete a brief questionnaire. However, prior to beginning the main part of the experiment, we told participants we were pretesting a series of musical selections for an unrelated experiment to be conducted the next semester. Participants were asked if they would listen to one of these musical selections before they moved on to the main part of the experiment. All participants agreed. Participants were then randomly assigned to listen to one of two musical selections that constituted the mood induction. Participants in the positive-mood condition listened to Mozart's *Eine Kleine Nacht Musik* and participants in the negative-mood condition listened to Mahler's *Adagietto*. These musical selections have been shown to reliably induce a positive and negative mood, respectively (e.g., Niedenthal & Setterlund, 1994; Storbeck & Clore, 2005). The mood induction lasted 10 minutes. Following the mood induction, participants completed the measure of implicit prejudice, the measure of explicit prejudice, a mood manipulation check, and a series of demographic items.² Participants were carefully debriefed and thanked for their participation.

Materials

Implicit Prejudice

The IAT was used to measure implicit prejudice. The IAT assesses associations between attitude objects (e.g., African Americans and European Americans) and evaluative attributes (e.g., pleasant and unpleasant). This study used African American and European American names

and words borrowed from Dasgupta and Greenwald (2001) and Lowery, Hardin, and Sinclair (2001). Participants completed the task in seven blocks following the recommendations of Nosek, Greenwald, and Banaji (2005). Response latencies were dealt with following the recommendations of Greenwald, Nosek, and Banaji (2003), and all reported analyses used the *D* measure as the measure of implicit prejudice. This measure has several added benefits over the traditional scoring procedure (e.g., Greenwald et al., 1998) including the use of practice block data (i.e., Blocks 4 and 6), improved implicit-explicit correlations, and better internal consistency. The measure of implicit prejudice showed acceptable reliability ($\alpha = .60$). Higher values indicate a greater implicit prejudice toward African Americans in comparison to European Americans.

Explicit Prejudice

The Symbolic Racism scale (Henry & Sears, 2002) served as the measure of explicit prejudice. The scale consists of seven items. After appropriate rescaling, all items were averaged to create a composite measure of explicit prejudice ($\alpha = .74$). Two participants failed to complete one or more items on the scale. These participants' data were not included in the main results reported below.

Mood Manipulation Check

Participants were asked four questions to determine the efficacy of the mood induction: "How positive [negative, happy, sad] did you feel while you listened to the musical selection?" Responses were recorded on a 7-point scale, $-3 = \text{not at all}$ to $3 = \text{very much}$. After appropriate reverse scoring, a composite measure of positive mood was created such that higher numbers indicate a more positive mood ($\alpha = .89$).

Arousal

To rule out an arousal-based alternative explanation of mood-related differences in implicit-explicit attitude correspondence, we asked participants how alert they felt during the mood induction (see Tamir, Robinson, & Clore, 2002, for a similar measure of general arousal, and Thayer, 1978, for discussion of the benefits of self-report over other measures of arousal). Responses were recorded on a 7-point scale, $-3 = \text{not at all}$ to $3 = \text{very much}$.

Results

Mood Manipulation Check

The mood manipulation was successful. Participants reported feeling more positive while listening to the positive musical selection ($M = 1.75$; $SD = 1.04$) than the negative musical selection ($M = 1.18$; $SD = 1.37$), $t(74) = 2.05$, $p = .044$.

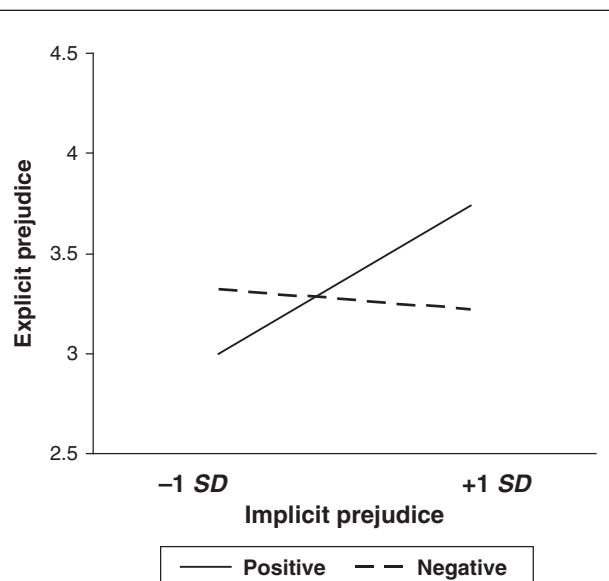


Figure 1 Explicit prejudice as a function of mood and implicit prejudice. Higher values indicate greater explicit and implicit prejudice. Predicted values displayed were computed at $+1\text{ SD}$ above and -1 SD below the mean.

Implicit-Explicit Correspondence

Implicit prejudice ($M = 0.46$, $SD = 0.25$) and explicit prejudice ($M = 3.35$, $SD = 0.80$) were modestly correlated overall ($r = .27$, $p = .02$). Our main prediction was that participants' mood would moderate the correlation between implicit and explicit prejudice. To test these predictions we conducted a multiple regression analysis predicting explicit prejudice from mood ($-1 = \text{negative mood}$; $1 = \text{positive mood}$), implicit prejudice (mean centered), and the Mood \times Implicit Prejudice interaction.

Consistent with predictions, the interaction between mood and implicit prejudice was significant, $b = 0.21$ (.09), $t(70) = 2.26$, $p = .027$, $d = 0.54$ (see Figure 1). We decomposed this interaction into simple slopes following the procedures outlined by Aiken and West (1991). This analysis revealed that, as predicted, when participants were in positive moods, implicit and explicit prejudice were significantly positively related, $b = 0.37$ (.11), $t(70) = 3.35$, $p = .0012$, $d = 0.80$. In contrast, when participants were in negative moods, implicit and explicit prejudice were nonsignificantly related, $b = -0.05$ (.14), $t(70) = -0.35$, $p = .72$, $d = 0.08$.

Mood-Related Differences in Arousal

Inconsistent with an arousal-based interpretation, participants in positive ($M = 0.84$, $SD = 1.52$) and negative ($M = 0.55$, $SD = 1.50$) moods did not differ in how alert they felt while completing the experiment,

$t(74) = 0.84$, $p = .41$. Furthermore, contrary to an arousal-based interpretation, we found no significant effect of condition on overall response speed for compatible, $t(74) < 1.0$, $p > .3$, and incompatible, $t(74) < 1.5$, $p > .80$, blocks.

EXPERIMENT 2

Consistent with predictions, in Experiment 1 we found that mood regulated implicit-explicit correspondence: Implicit and explicit prejudices were correlated when participants were in positive moods but not when they were in negative moods. Furthermore, the lack of a difference in self-reported arousal or in response latencies on the IAT as a consequence of mood strongly suggests that mood-related differences in arousal do not explain these results. This finding is consistent with past research that found the influence of positive mood on stereotyping was independent of whether positive mood was high or low in arousal (e.g., Bodenhausen et al., 1994) and other research that found no differences in arousal between positive and negative mood inductions (e.g., Tamir et al., 2002).

We conducted a second experiment for several reasons. First, we wanted to conceptually replicate the results of Experiment 1 using a different attitude domain. Thus, we turned our focus to implicit and explicit academic (i.e., math versus arts) attitudes. Second, following past studies examining implicit-explicit attitude correspondence (e.g., Nosek, 2005), we wanted to employ measures of explicit attitudes that conceptually mirrored the measure of implicit attitudes (see below for a discussion). Finally, we also wanted to clear up a point of interpretational ambiguity in Experiment 1. Specifically, it remains unclear whether the observed differences in implicit-explicit attitude correspondence resulted from positive mood enhancing or negative mood decreasing the relation between the two (or perhaps some combination of both). Accordingly, we included a condition in which no mood was induced to disambiguate the effect of positive versus negative versus neutral (i.e., nonmanipulated) moods on implicit-explicit correspondence.

In most experimental contexts, people in control conditions in which no mood manipulation occurs typically perform similarly to those in manipulated positive moods. For example, compared to negative mood participants, both groups typically exhibit a greater tendency to process incoming information in a global fashion (Gasper & Clore, 2002), to rely on the ease-of-retrieval heuristic (Ruder & Bless, 2003), to produce false memories (Storbeck & Clore, 2005), and to display a variety of cognitive priming effects (Storbeck &

Clore, 2008). This general finding probably occurs because people are generally happy (Diener & Diener, 1996) and, as a consequence, people in nonmanipulated moods are generally in positive moods when they take part in psychological studies (for discussions of this issue, see Clore & Huntsinger, 2007; Storbeck & Clore, 2008).

Despite this past research, we thought it important to explore this explanation that people are generally happy for why people in control conditions typically perform similarly to people in manipulated positive mood conditions. To this end, we conducted a pilot study in which participants ($N = 48$) were randomly assigned to experience the same positive or negative mood inductions from Experiment 1 or to experience no mood induction. Participants in the mood induction conditions then completed a measure of self-reported mood identical to that used in Experiment 1. Participants in the no mood induction condition reported their general mood during the experiment. All responses were made on a 7-point scale. As before, a composite measure of positive mood was created such that higher numbers indicate a more positive mood ($\alpha = .91$).

Submitting the measure of positive mood to a one-way analysis of variance yielded a significant effect of condition, $F(2, 45) = 4.44, p = .017$. As expected, participants in the positive ($M = 5.81, SD = 0.99$) and no mood induction ($M = 5.52, SD = 0.92$) conditions reported similarly positive moods, $p = .41$, and they reported more positive moods than did those in the negative mood induction ($M = 4.83, SD = 0.99$) condition, $p = .005$ and $p = .059$, respectively.

In summary, in Experiment 2, participants experienced a positive, negative, or no mood induction prior to completing measures of implicit and explicit academic attitudes. We predicted that participants in positive moods would exhibit greater implicit-explicit academic attitude correspondence than would those in negative moods. Based on the results of the pilot study and past research, we further predicted that participants in positive moods and those in the no mood induction condition would show a similar degree of implicit-explicit correspondence, with those in negative moods showing the least correspondence. Finally, we also investigated whether arousal may underlie the influence of mood on implicit-explicit correspondence.

Method

Participants

Fifty-six (40 women) participants completed this experiment for partial fulfillment of a course requirement.

Procedure

The procedure was virtually identical to Experiment 1, with the following changes: Participants were told the purpose of the experiment was to examine interpersonal interactions and academic attitudes; participants completed measures designed to assess their implicit and explicit arts–math attitudes; a no mood induction condition was added in which participants simply completed all measures without listening to any music.

Materials

Implicit arts–math attitudes. The IAT was again used to measure implicit arts–math attitudes. In this case, the IAT assesses associations between attitude objects (e.g., math and arts) and evaluative attributes (e.g., pleasant and unpleasant), and was an adaptation of an IAT used by Nosek, Banaji, and Greenwald (2002). The measure of implicit arts–math attitudes exhibited acceptable internal consistency ($\alpha = .80$). The IAT was scored via the same method as in Experiment 1, with higher values indicating a more positive implicit attitude toward arts than math.

Explicit arts–math attitudes. Participants indicated their feelings toward arts and math using five semantic differentials used in Nosek et al. (2002). Specifically, participants were asked to describe where their feelings toward mathematics (or arts) were located using the following five scale anchors: *sad–happy; delightful–disgusting; ugly–beautiful; avoid–approach; unaframed–afraid*. The scale for each semantic differential ranged from -3 to 3. After appropriate rescaling, composite measures of math ($\alpha = .92$) and arts ($\alpha = .70$) attitudes were created. Finally, to make this measure comparable to the measure of implicit arts–math attitudes, we computed a difference score by subtracting the composite measure of math attitudes from the composite measure of arts attitudes. The difference score could range from -6 to 6 and was created such that positive values indicated a more positive attitude toward arts than math, lower numbers the opposite, and a value of 0 indicating no preference.

Arousal. To measure participants' general level of arousal, they were asked to indicate how generally alert they felt during the experiment on a 5-point scale from 1 = *extremely alert* to 5 = *extremely un-alert*. This item was embedded among several demographics questions that participants completed at the end of the experiment. One participant failed to answer this question.

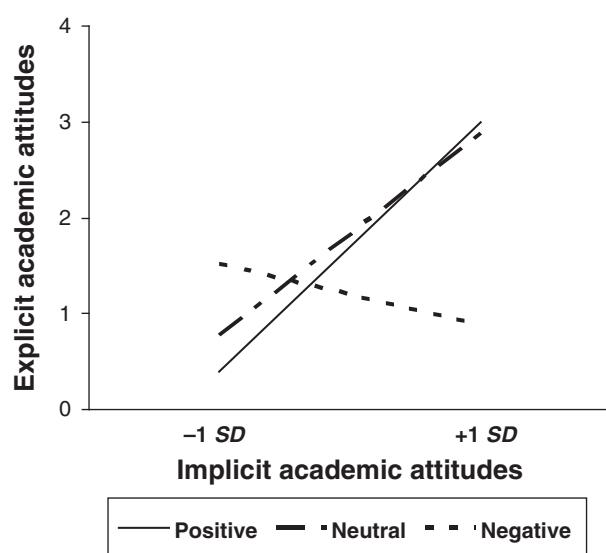


Figure 2 Explicit academic attitudes as a function of mood and implicit academic attitudes. Higher values indicate greater explicit and implicit preference for arts over math. Predicted values displayed were computed at $+1\text{ SD}$ above and -1 SD below the mean.

Results

Implicit-Explicit Correspondence

Implicit academic attitudes ($M = 0.51, SD = 0.33$) and explicit academic attitudes ($M = 1.60, SD = 2.09$) were modestly correlated ($r = .33, p = .013$). Our main prediction was that participants' mood would regulate implicit-explicit academic attitude correspondence. To test this prediction, we conducted multiple regression analyses predicting participants' explicit academic attitudes from implicit arts-math attitudes (mean centered), mood (the three levels were represented by two dummy codes: negative = 1, neutral = 0, positive = 0; negative = 0, neutral = 0, positive = 1), and their interactions (see Jordan, Whitfield, & Zeigler-Hill, 2007, for a similar analytic strategy). Main effects were entered in the first step, followed by the interactions in the second step. The second step was significant, ($R^2 \text{ change} = .10$), $F(2, 50) = 3.21, p = .049$, indicating that the correspondence between implicit and explicit differs significantly across mood condition (see Figure 2).

As in Experiment 1, we decomposed this interaction into simple slopes following procedures outlined by Aiken and West (1991). For participants in positive moods, implicit and explicit arts-math attitudes were significantly positively related, $b = 1.43 (.56)$, $t(50) = 2.56, p = .013, d = 0.72$. In the no mood induction conditions, implicit and explicit arts-math attitudes were also significantly positively related, $b = 0.88 (.38)$, $t(50) = 2.30, p = .026, d = 0.65$. For participants in

negative moods, however, implicit and explicit arts-math attitudes were nonsignificantly negatively related, $b = -0.39 (.51)$, $t(50) = 0.76, p = .45, d = 0.21$.³

Mood-Related Differences in Arousal

Inconsistent with an arousal-based interpretation, but consistent with results from Experiment 1, when we submitted the measure of arousal to a one-way analysis of variance (ANOVA), we found no significant differences across conditions, $F(2, 52) = 1.53, p = .23$. Participants in the positive mood ($M = 2.81, SD = 0.87$), negative mood ($M = 2.86, SD = 0.64$), and no mood ($M = 2.38, SD = 0.65$) induction conditions exhibited similar levels of arousal. Furthermore, when we submitted absolute response latencies on the IAT to the same ANOVA, we found no significant effect of condition on overall response speed for compatible, $F(2, 53) < 1.0, p > .5$, and incompatible, $F(2, 53) < 1.5, p > .20$, blocks.

GENERAL DISCUSSION

In this research, we asked whether positive and negative affective cues from mood would regulate correspondence between implicit and explicit attitudes. In Experiment 1, implicit and explicit prejudices were related for participants in positive moods but not for those in negative moods. In Experiment 2, participants in positive and naturally occurring moods exhibited greater correspondence between their implicit and explicit academic attitudes than did those in negative moods.

Although it may seem surprising that simply being in a fleeting negative mood would so fundamentally disrupt the relationship between automatically activated and more controlled attitudes, these results are readily interpretable if one combines the affect-as-information model (Clore & Huntsinger, 2007; Schwarz & Clore, 1983, 1996, 2007) with the APE model (Gawronski & Bodenhausen, 2006). The APE model predicts that people will use their affective reactions in constructing their controlled responses when they see those reactions as valid. The affect-as-information model predicts that people will see those reactions as valid when they are feeling positive but not when they are feeling negative. As a consequence, people in positive moods feel more comfortable than those in negative moods relying on these reactions when constructing their explicit attitude reports. In fact, participants in negative moods self-reported attitudes that were quite unrelated to their implicit attitudes.

In summary, this work adds to researchers' understanding of when implicit attitudes are used as a basis for explicit attitude reports. Until now, researchers

investigating the correspondence between implicit and explicit attitudes have focused on aspects of the individual's personality or, more frequently, aspects of the attitude object, largely neglecting intrapersonal factors (Nosek, 2007). This research demonstrates that fluctuations in intrapersonal cues (e.g., fleeting affective states) shape the relationship between implicit and explicit attitudes. Furthermore, this research has implications for the APE (Gawronski & Bodenhausen, 2006) model. Specifically, this research revealed that in addition to being validated by their consistency with other accessible propositions people's automatic affective reactions (i.e., implicit attitudes) might be directly validated by affective states.

Limitations and Alternative Interpretations

One limitation of this research is the lack of a genuine neutral mood condition, which limited our ability to establish if the observed differences in implicit-explicit attitude correspondence resulted from positive mood enhancing or negative mood decreasing the relationship between the two (or perhaps some combination of both). We attempted to address this possibility in Experiment 2 by including a condition in which no mood was induced. Unfortunately, because people are in mildly positive moods most of the time (Diener & Diener, 1996), participants in the no mood induction condition displayed similar levels of positive mood as those who experienced the positive mood induction. As such, we can only firmly say that a negative mood degrades the relationship between implicit and explicit evaluations as compared to experimentally manipulated and naturally occurring positive moods. Future research is necessary to resolve this issue.

In both experiments, and consistent with predictions, we found that participants in negative moods exhibited little correspondence between their implicit and explicit attitudes. This result is in harmony with past research that commonly finds little connection between accessible thoughts and evaluative judgments when such thoughts are invalidated by affective and bodily cues (e.g., Briñol & Petty, 2003; Briñol et al., 2007). Nonetheless, one may have reasonably expected people in negative moods to actively reject or to avoid the influence of their implicit attitudes when reporting their explicit attitudes, resulting in a negative relationship between the two. This is an intriguing possibility and we suspect that whether negative mood leads people to simply disregard or to actively avoid the influence of accessible thoughts is likely driven by a variety of factors. One factor may be the intensity of the negative mood—as the intensity of the negative mood increases, individuals should be increasingly likely to view their implicit attitudes as especially invalid and a potential contaminant when

reporting their explicit attitudes (see also Briñol et al., 2007). Future research is necessary to determine those conditions when people in negative moods will simply ignore and when they will actively avoid the influence of their immediate affective reactions on their explicit attitudes.

Although arousal is sometimes invoked to explain why affect regulates cognition and memory (Corson & Verrier, 2007; Revelle & Loftus, 1992), we found no evidence that arousal played a role in regulating implicit-explicit attitude correspondence in these experiments. In both experiments, participants in positive and negative moods reported similar levels of arousal in response to the mood inductions (Experiment 1) and during the experiment (Experiment 2). Participants also exhibited similar levels of response speed on the measures of implicit attitudes across experiments. These results converge with research by Bodenhausen, Sheppard, and Kramer (1994) that found the influence of positive mood on stereotyping was unrelated to whether positive mood was high or low in arousal.

Finally, despite the consistency of the findings, one could argue that differences in cognitive processing often attributed to mood (e.g., Bless & Schwarz, 1999; Schwarz & Clore, 2007) led to the differences in implicit-explicit attitude correspondence. From this view, negative mood instigated greater controlled processing than did positive mood, which offset the impact of activated implicit attitudes on explicit attitude reports. These data cannot exclude this possibility. However, rather than viewing this as an alternative explanation, we think it best to view any mood-related differences in cognitive processing as contributing to the observed differences in implicit-explicit attitude correspondence. That is, following Bless and Schwarz (1999; see also Clore & Huntsinger, in press), we consider any cognitive processing differences between positive and negative mood as a consequence of mood signaling the validity (or value) of accessible thoughts (i.e., implicit attitudes). Future research is necessary to determine whether differences in cognitive processing contributed to the mood-related differences in implicit and explicit attitude correspondence observed in this research.

Implications and Future Research Directions

This research has potential implications for the question of whether implicit attitudes are accessible or inaccessible to conscious awareness. Early theory and research on implicit attitudes suggested that, generally, people lack conscious awareness of them (e.g., Greenwald & Banaji, 1995; Wilson et al., 2000). However, recently this assumption has been challenged by research demonstrating that people may be at least partially

aware of their implicit attitudes and may experience them as intuitions or gut feelings (Gawronski & Bodenhausen, 2006; Gawronski, Hofmann, & Wilbur, 2006; Jordan et al., 2007; Pelham, Koole, & Hardin, 2005; Ranganath et al., 2008). This work suggests that one's ability to self-report attitudes that are similar in quality to their implicit attitudes is not monotonic but, instead, can be changed by internal information—in this case, one's fleeting mood.

As with much work on the relationship between implicit and explicit evaluations, this work inevitably leads to the issue of predictive validity; in this case, the question is whether mood moderates the relationship between implicit and explicit evaluations in predicting behavior. In general, implicit and explicit attitudes are found to predict different types of behaviors: Implicit attitudes predict more spontaneous behaviors and explicit attitudes predict more deliberate behaviors (Dovidio, Kawakami, & Gaertner, 2002; Fazio, Jackson, Dunton, & Williams, 1995; McConnell & Leibold, 2001; Wilson et al., 2000). We have demonstrated that implicit attitudes reliably inform explicit attitude reports among people in manipulated and naturally occurring positive moods, and they do not among people in negative moods. To the extent that positive moods increase implicit-explicit attitude correspondence, implicit attitudes may inform not only spontaneous behaviors but also deliberate behaviors, leading to greater correspondence between these two types of behavior. In contrast, our finding of greater dissociation between implicit and explicit attitudes for those in negative moods suggests that negative moods may increase the degree to which implicit and explicit attitudes, respectively, uniquely predict spontaneous versus deliberate behaviors.

Another question raised by this work is whether other affective states, such as emotions, have a similar influence on implicit-explicit attitude correspondence. On one hand, it could be that positive emotions and negative emotions exert the same influence as more diffuse positive and negative moods, suggesting that valence is crucial to predicting whether affective states enhance or diminish implicit-explicit correspondence. On the other hand, recent research warns against such a simple prediction (e.g., Bodenhausen et al., 1994; DeSteno, Petty, Rucker, Wegener, & Braverman, 2004; DeSteno, Petty, Wegener, & Rucker, 2000; Lerner & Keltner, 2001; Lerner & Tiedens, 2006). In that research, the appraisal patterns associated with emotions, and not necessarily their valence, determined how they regulated cognition (see Clore & Huntsinger, in press, for a review). The experience of anger, for instance, is often associated with a sense of one's position being correct and a general sense of certainty (Clore et al., 2001; Lerner & Keltner, 2001). This sense

of certainty should lead people to deem their immediate affective reactions as valuable and valid, which should lead to implicit-explicit attitude correspondence. Fear is often associated with a sense of insecurity and uncertainty (Lerner & Keltner, 2001; Ortony, Clore, & Collins, 1988). This sense of uncertainty should lead people to deem their immediate affective reactions suspect, which should disrupt implicit-explicit attitude correspondence. In sum, the appraisal pattern associated with the experience of a given emotion seems likely to determine if immediate affective reactions are seen as valid, which should then regulate implicit-explicit attitude correspondence accordingly.

It would also be interesting to examine affective states that are evoked by attitude objects or social groups and also those experienced at the group level as these may influence correspondence between implicit and explicit attitudes in ways different than the incidental affective states examined in this research. Certain emotional reactions are evoked by or associated with specific social groups (e.g., Cottrell & Neuberg, 2005), for example, and people experience emotions based on their social identities (e.g., Mackie, Devos, & Smith, 2000; Mallett, Huntsinger, Sinclair, & Swim, in press; Schmader & Lickel, 2006; Swim & Miller, 1999). Future research is necessary to determine whether these types of emotional reactions have unique consequences for the relationship between implicit and explicit attitudes.

Although this work only examined two attitude domains, the two domains varied with respect to both whether self-presentational concerns were present (i.e., prejudice) or not (i.e., academic attitudes) and whether the focus was on evaluations of social groups or academic subjects. This suggests that the influence of affect on implicit-explicit attitude correspondence is independent of self-presentational concerns. Nevertheless, future work can answer the question of whether the effect of mood on the correspondence between implicit and explicit evaluations is a general phenomenon or whether it is restricted to these two attitude domains (or a certain set of attitude domains). Furthermore, future work should investigate whether this relationship is unique to the IAT or whether it is true of implicit measures more generally. Finally, this research focused on incidental affective states not directly linked to the attitude object and experienced at the personal level.

Coda

In this research, we discovered that being in fleeting positive or negative moods shapes implicit-explicit attitude correspondence: Negative moods disrupt, and positive moods maintain, correspondence between implicit and explicit attitudes. In other words, to paraphrase the

Beat poet Allen Ginsberg, for people in positive moods, first thoughts are seen as best thoughts; for those in negative moods, they are seen as worst thoughts. Admittedly, the question of whether happy people create more inspired poetry than do those who are sad by relying more on their immediate reactions to the world remains unanswered.

NOTES

1. Exploratory analyses revealed that participant gender did not meaningfully qualify the main results of Experiments 1 and 2 (i.e., implicit-explicit attitude correspondence was similarly influenced for male and female participants as a function of mood condition). Therefore, it was not included in any analyses and will not be discussed further.

2. Because past research demonstrates little (or no) impact of the order in which participants completed measures of implicit and explicit attitudes on their correspondence (Hofmann, Gawronski, & Gschwendner, 2005; Nosek, Greenwald, & Banaji, 2005) and to avoid introducing extraneous variance into the analyses, participants always completed the measure of implicit attitude before the measure of explicit attitude in both experiments (see also Jordan, Whitfield, & Zeigler-Hill, 2007).

3. There are several theoretically uninteresting reasons for the difference in implicit-explicit correspondence between mood conditions in these studies. These reasons map onto the factors known to influence the strength of correlations more generally (i.e., restriction of range, differences in variability, violations of normality, etc.). Although we could not find any theoretically grounded reasons to suspect that negative moods would be associated with these factors, we examined if they were present in both experiments. Results of these analyses revealed that implicit and explicit attitudes had similar variability, ranges, and reliabilities, and they were normally distributed across mood conditions in both experiments. All of these results are available from the first author.

REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Ashton-James, C., Huntsinger, J., & Clore, G. L. (2006). *The affective regulation of social category priming: Attitude and behavior*. Unpublished manuscript.
- Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer Jr. (Ed.), *The automaticity of everyday life: Advances in social cognition* (vol. 10, pp. 1-61). Mahwah, NJ: Lawrence Erlbaum.
- Bargh, J. A., & Cohen, J. L. (1978). Mediating factors in the arousal-performance relationship. *Motivation and Emotion*, 2, 243-257.
- Bless, H. (2001). The relation between mood and the use of general knowledge structures. In L. L. Martin & G. L. Clore (Eds.), *Mood and social cognition: Contrasting theories* (pp. 9-29). Mahwah, NJ: Lawrence Erlbaum.
- Bless, H., Clore, G. L., Schwarz, N., Golisano, V., Rabe, C., & Wolk, M. (1996). Mood and the use of scripts: Does happy mood really lead to mindlessness? *Journal of Personality and Social Psychology*, 71, 665-679.
- Bless, H., & Schwarz, N. (1999). Sufficient and necessary conditions in dual-process models: The case of mood and information processing. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 423-440). New York: Guilford.
- Bless, H., Schwarz, N., & Kemmelmeier, M. (1996). Mood and stereotyping: Affective states and the use of general knowledge structures. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 7, pp. 63-93). Chichester, UK: Wiley.
- Bodenhausen, G. V., Kramer, G. P., & Susser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology*, 66, 621-632.
- Bodenhausen, G. V., Sheppard, L., & Kramer, G. P. (1994). Negative affect and social perception: The differential impact of anger and sadness. *European Journal of Social Psychology*, 24, 45-62.
- Brñol, P., & Petty, R. E. (2003). Overt head movements and persuasion: A self-validation analysis. *Journal of Personality and Social Psychology*, 84, 1123-1139.
- Brñol, P., Petty, R. E., & Barden, J. (2007). Happiness versus sadness as a determinant of thought confidence in persuasion: A self-validation analysis. *Journal of Personality and Social Psychology*, 93, 711-727.
- Clore, G. L., & Huntsinger, J. R. (2007). How emotions inform judgment and regulate thought. *Trends in Cognitive Sciences*, 9, 393-399.
- Clore, G. L., & Huntsinger, J. R. (in press). How the object of affect guides its impact. *Emotion Review*.
- Corson, Y., & Verrier, N. (2007). Emotions and false memories: Valence or arousal? *Psychological Science*, 18, 208-211.
- Clore, G. L., Wyer R. S., Dienes, B., Gasper, K., Gohm, C. L., & Isbell, L. (2001). Affective Feelings as Feedback: Some Cognitive Consequences. In L. L. Martin & G. L. Clore (Eds.), *Theories of mood and cognition: A user's handbook* (pp. 27-62). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cottrell, C. A., & Neuberg, S. L. (2005). Different emotional reactions to different groups: A sociofunctional threat-based approach to "prejudice." *Journal of Personality and Social Psychology*, 88, 770-789.
- Dasgupta, N., & Greenwald, A. G. (2001). On the malleability of automatic attitudes: Combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology*, 81, 800-814.
- DeSteno, D., Petty, R. E., Rucker, D. D., Wegener, D. T., & Braverman, J. (2004). Discrete emotions and persuasion: The role of emotion-induced expectancies. *Journal of Personality and Social Psychology*, 86, 43-56.
- DeSteno, D., Petty, R. E., Wegener, D. T., & Rucker, D. D. (2000). Beyond valence in the perception of likelihood: The role of emotion specificity. *Journal of Personality and Social Psychology*, 78, 397-416.
- Diener, E., & Diener, C. (1996). Most people are happy. *Psychological Science*, 7, 181-185.
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, 82, 62-68.
- Ellis, H. C., & Ashbrook, P. W. (1988). Resource allocation model and the effects of depressed mood states on memory. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition and social behavior* (pp. 25-43). Toronto, Canada: Hogrefe.
- Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 75-109). New York: Academic Press.
- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247-282). Hillsdale, NJ: Lawrence Erlbaum.
- Fazio, R. H., Jackson, J. R., Dunton, B. C., Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013-1027.
- Gasper, K., & Clore, G. L. (2002). Attending to the big picture: Mood and global vs. local processing of visual information. *Psychological Science*, 13, 34-40.
- Gawronski, B., & Bodenhausen, G. V. (2006). Associate and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin*, 132, 692-731.
- Gawronski, B., & Bodenhausen, G. V. (2007). Unraveling the processes underlying evaluation: Attitudes from the perspective of the APE model. *Social Cognition*, 25, 687-717.
- Gawronski, B., Hofmann, W., & Wilbur, C. J. (2006). Are "implicit" attitudes unconscious? *Consciousness and Cognition: An International Journal*, 15, 485-499.
- Ginsberg, A. (2001). *Spontaneous mind: Selected interviews, 1958-1996*. New York: Harper Collins.

- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4-27.
- Greenwald, A. G., McGhee, D. E., & Schwarz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464-1480.
- Greenwald, A. G., & Nosek, B. A. (2008). Attitudinal dissociation: What does it mean? In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 65-82). Hillsdale, NJ: Lawrence Erlbaum.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197-216.
- Henry, P. J., & Sears, D. O. (2002). The symbolic racism 2000 scale. *Political Psychology*, 23, 253-283.
- Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the Implicit Association Test and explicit self-report measures. *Personality and Social Psychology Bulletin*, 31, 1369-1385.
- Isbell, L. (2004). Not all happy people are lazy or stupid: Evidence of systematic processing in happy moods. *Journal of Experimental Social Psychology*, 40, 341-349.
- Jordan, C. H., Whitfield, M., & Zeigler-Hill, V. (2007). Intuition and the correspondence between implicit and explicit self-esteem. *Journal of Personality and Social Psychology*, 93, 1067-1079.
- Krauth-Gruber, S., & Ric, F. (2000). Affect and stereotypic thinking: A test of the mood-and-general-knowledge model. *Personality and Social Psychology Bulletin*, 26, 1587-1597.
- Lerner, J. S., & Kelchner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology*, 81, 146-159.
- Lerner, J. S., & Tiedens, L. Z. (2006). Portrait of the angry decision maker: How appraisal tendencies shape anger's influence on cognition. *Journal of Behavioral Decision Making*, 19, 115-137.
- Lowery, B. S., Hardin, C. D., & Sinclair, S. (2001). Social influence effects on automatic racial prejudice. *Journal of Personality and Social Psychology*, 81, 842-855.
- Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology*, 79, 602-616.
- Mackie, D. M., & Worth, L. T. (1991). Feeling good, but not thinking straight: The impact of positive mood on persuasion. In J. Forgas (Ed.), *Emotion and social judgment* (pp. 201-220). Oxford, UK: Pergamon.
- Mallett, R. K., Huntsinger, J. R., Sinclair, S., & Swim, J. (in press). Seeing through their eyes: When majority group members take collective action on behalf of an outgroup. *Group Processes & Intergroup Relations*.
- Martin, L. L., & Clore, G. L. (Eds.). (2001). *Theories of mood and cognition: A user's guidebook*. Mahwah, NJ: Lawrence Erlbaum.
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the Implicit Association Test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, 37, 435-442.
- Miles, B. (1989). *Ginsberg: A biography*. New York: Simon & Schuster.
- Niedenthal, P. M., & Setterlund, M. B. (1994). Emotion congruence in perception. *Personality and Social Psychology Bulletin*, 20, 401-411.
- Nosek, B. A. (2005). Moderators of the relationship between implicit and explicit evaluation. *Journal of Experimental Psychology: General*, 134, 565-584.
- Nosek, B. A. (2007). Implicit-explicit relations. *Current Directions in Psychological Science*, 16, 65-69.
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Math = male, me = female, therefore math ≠ me. *Journal of Personality and Social Psychology*, 83, 44-59.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, 31, 166-180.
- Ortony, A., Clore, G., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.
- Pelham, B. W., Koole, S. L., & Hardin, C. D. (2005). Gender moderates the relation between implicit and explicit self-esteem. *Journal of Experimental Social Psychology*, 41, 84-89.
- Ranganath, K. A., Smith, C. T., & Nosek, B. A. (2008). Distinguishing automatic and controlled components of attitudes from direct and indirect measurement. *Journal of Experimental Social Psychology*, 44, 386-396.
- Revelle, W., & Loftus, D. (1992). The implications of arousal effects for the study of affect and memory. In S. A. Christianson (Ed.), *Handbook of emotion and memory* (pp. 113-150). Hillsdale, NJ: Lawrence Erlbaum.
- Ruder, M., & Bless, H. (2003). Mood and the reliance on the ease of retrieval heuristic. *Journal of Personality and Social Psychology*, 85, 20-32.
- Schmader, T., & Lickel, B. (2006). Stigma and shame: Emotional responses to the stereotypical actions of one's ethnic ingroup. In S. Levin & C. van Laar (Eds.), *Stigma and group inequality: Social psychological approaches* (pp. 281-286). New York: Erlbaum.
- Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527-561). New York: Guilford.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-523.
- Schwarz, N., & Clore, G. L. (1996). Feelings and phenomenal experiences. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: A handbook of basic principles* (pp. 433-465). New York: Guilford.
- Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: A handbook of basic principles* (2nd ed., pp. 385-407). New York: Guilford.
- Smith, C. T., & Nosek, B. A. (2008). Affective focus increases the concordance between implicit and explicit attitudes. Unpublished manuscript.
- Storbeck, J., & Clore, G. L. (2005). With sadness comes accuracy, with happiness, false memory: Mood and the false memory effect. *Psychological Science*, 16, 785-791.
- Storbeck, J., & Clore, G. L. (2008). The affective regulation of cognitive priming. *Emotion*, 8, 208-215.
- Swim, J., & Miller, D. (1999). White guilt: Its antecedents and consequences for attitudes toward affirmative action. *Personality and Social Psychology Bulletin*, 25, 500-514.
- Tamir, M., Robinson, M. D., & Clore, G. L. (2002). The epistemic benefits of trait-consistent mood states: An analysis of extraversion and mood. *Journal of Personality and Social Psychology*, 83, 663-677.
- Thayer, R. E. (1978). Toward a psychological theory of multidimensional activation (arousal). *Motivation and Emotion*, 2, 1-34.
- Wegener, D. T., & Petty, R. E. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality and Social Psychology*, 66, 1034-1048.
- Wegener, D. M., & Bargh, J. A. (1998). Control and automaticity in social life. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., vols. 1 & 2, pp. 446-496). New York: McGraw-Hill.
- Wilson, T. D. (2002). *Strangers to ourselves: Discovering the adaptive unconscious*. Cambridge, MA: Harvard University Press.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107, 101-126.
- Zajonc, R. B. (1965). Social facilitation. *Science*, 149, 269-274.

Received February 1, 2008

Revision accepted August 19, 2008